May 30, 2019

Mr. David Szymanski
New York State Dept. of Environmental Conservation
Division of Environmental Remediation
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: RiverBend Site (formerly Steelfields) (V00619)
Periodic Review Report (May 1, 2018 to May 1, 2019)

Dear Mr. Szymanski:

On behalf of Fort Schuyler Management Corporation (FSMC), TurnKey Environmental Restoration, LLC (TurnKey) in association with Benchmark Environmental Engineering & Science, PLLC (Benchmark) has prepared the enclosed hard copy of the completed Institutional and Engineering Controls (IC/EC) certification form and one compact disc containing the Periodic Review Report (PRR) for the RiverBend Site (V00619), including all supporting appendices. The IC/EC certification form and report have been prepared in accordance with NYSDEC's DER-10 Technical Guidance (May 2010). The IC portion of the certification form (Box 6) has been signed by Mr. Scott Bateman, FSMC Board Treasurer, and the EC portion (Box 7) has been signed by Mr. Thomas H. Forbes, P.E. and Principal Engineer of Benchmark and TurnKey.

Please contact me if you have any questions regarding this submittal.

Sincerely,
TurnKey Environmental Restoration, LLC

Brock Greene
Project Environmental Scientist

ec: Kenneth Gelting (FSMC)
Thomas H. Forbes (Benchmark TurnKey)

File: 0322-019-502

2558 Hamburg Turnpike, Suite 300 | Buffalo, NY 14218
phone: (716) 856-0599 | fax: (716) 856-0583

Periodic Review Report

May 1, 2018 through May 1, 2019

Riverbend Site (No. V00619)
Buffalo, New York

May 2019

0322-019-502

Prepared For:

Fort Schuyler Management Corporation

Prepared By:

TurnKey Environmental Restoration, LLC

In Association With:

Benchmark Environmental Engineering & Science, PLLC

2558 Hamburg Turnpike, Suite 300, Buffalo, New York 14218 | phone: (716) 856-0635 | fax: (716) 856-0583

PERIODIC REVIEW REPORT
for the
STEELFIELDS (AKA RIVERBEND, LLC) SITE
(SITE NO. V00619)

BUFFALO, NEW YORK

May 2019 0322-019-502

Prepared for:

FORT SCHUYLER MANAGEMENT CORPORATION

Prepared By:

TurnKey Environmental Restoration, LLC
2558 Hamburg Turnpike, Suite 300
Buffalo, NY 14218
(716)856-0635

In Association With:

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PERIODIC REVIEW REPORT

Steelfields (aka Riverbend, LLC) Site

Site No. V00619

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PERIODIC REVIEW REPORT
Steelfields (aka Riverbend, LLC) Site
Site No. V00619
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FIGURES

APPENDICIES

1.0 INTRODUCTION

TurnKey Environmental Restoration, LLC (TurnKey), in association with Benchmark Environmental Engineering and Science, PLLC (Benchmark) has prepared this Periodic Review Report (PRR) on behalf of Fort Schuyler Management Corporation (FSMC) to summarize the post-remedial status of New York State Department of Environmental Conservation (NYSDEC) Voluntary Cleanup Program (VCP) Steelfields (aka RiverBend, LLC) Site No. V00619.

This PRR has been prepared in accordance with the NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation (Ref. 1). The NYSDEC's Institutional and Engineering Controls (IC/EC) Certification Forms have been prepared for each of the three designated areas (i.e., Area I, Area II, and Area III) of the Site. This PRR and the associated IC/EC Form (see Appendix A) have been completed for the May 1, 2017 to May 1, 2018 reporting period.

1.1 Background

In October 2002, Steelfields Ltd. (Steelfields) purchased several vacant industrial properties in South Buffalo, New York (see Figures 1 and 2) out of bankruptcy from the LTV Steel Company and Hanna Furnace Corporation (a wholly owned subsidiary of the National Steel Corporation). At the same time, Steelfields entered into a Voluntary Cleanup Agreement (VCA) with the NYSDEC to remediate four parcels identified below, totaling approximately 218 acres. The parcels were divided based on the operational and ownership history of each:

- Area I – Former Republic (LTV) Steel Plant Parcel (± 90.6 acres)
- Area II – Former Donner-Hanna Coke Plant Parcel (± 53.0 acres)
- Area III - Former Republic (LTV) Steel Warehouse Parcel (± 43.2 acres)
- Area IV – Former Donner-Hanna Coke Yard Parcel (± 31.1 acres)

In July 2003, a fifth parcel, the formerly owned and operated August Feine & Sons property (±4.7 acres), was acquired by Steelfields. The August Feine property, though relevant and proximate to the RiverBend Site, is not under any NYSDEC program or subject to a SMP under the RiverBend VCA. As such, only Areas I, II, III, and IV were

remediated under the NYSDEC VCA. Subsequent to completion of the remediation of Area IV by Steelfields in 2006, this parcel was separated from the Site, sold to Hydro-Air Components, Inc. (Hydro-Air), and entered into the Brownfield Cleanup Program (NYSDEC BCP Site No. C915204) by Hydro-Air. Accordingly, this report does not address Area IV. RiverBend, LLC, a Buffalo Urban Development Corporation (BUDC)-related entity, acquired the Site from Steelfields in May 2008. On July 22, 2014, FSMC acquired Area I of the RiverBend Site from RiverBend, LLC. On November 24, 2014, FSMC acquired Areas II and III from RiverBend, LLC. On June 24, 2016, a sixth parcel, the formerly owned and operated Norfolk Southern Railroad property (±22.16 acres), was acquired by FSMC. Similar to the former August Feine property, the former Norfolk Southern property is also relevant and proximate to the RiverBend Site and is not under any NYSDEC program or subject to a SMP under the RiverBend VCA.

2.0 SITE OVERVIEW

The RiverBend Site, comprised of former heavy industrial properties identified as Areas I, II, III, and the former August Feine and Norfolk Southern parcels, encompass approximately 204 acres in the City of Buffalo, Erie County, New York (see Figure 2). The Site is bordered by the Buffalo River and South Park Avenue to the north; Abby Street and residential neighborhoods to the east; Former Area IV (currently Hydro-Air Components) to the south; and a railroad corridor and rail yard to the west (contiguous parcels owned by South Buffalo Railroad Company, Buffalo Southern Railroad, and CSX Corporation) (see Figure 2).

Environmental investigations of the Site revealed the presence of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) including polycyclic aromatic hydrocarbons (PAHs), and metals in soil and groundwater that required remediation. Remedial activities were completed across the Site from 2002 through 2006. Detailed descriptions of the remedial efforts and construction documents for this period are provided in the NYSDEC's approved Construction Closeout Report for Area I, including the Site Management Plan, prepared by TurnKey (Ref. 2); and the Final Engineering Report for Areas II and III, Former Donner-Hanna Coke Plant and Republic (LTV) Steel Properties, including a Site Management Plan, prepared by Malcolm Pirnie (Ref. 3). A brief description of the remedial efforts described in those documents is presented below.

2.1 Area I - Former Republic (LTV) Steel Parcel

The former Republic Steel (LTV) Plant property encompasses two adjoining parcels (122.16-1-8.1 and 122.20-1-3.1) totaling approximately 90.6 acres (see Figure 2). Area I is bordered by the Buffalo River and South Park Avenue to the north, Abby Street and residential neighborhoods to the east, former Norfolk Southern property to the south (now part of the RiverBend Site), and a railroad corridor and rail yard to the west. Remedial efforts conducted in Area I included:

- Remediation of petroleum/naphthalene/tar-impacted and metals-impacted soil/fill.
- Removal of former fuel oil and tar transfer pipelines, including disposal of residual product within the piping and impacted soil in the vicinity of the pipelines.

- Removal of former underground storage tanks.
- Buffalo River bank stabilization.

2.2 Area II – Former Donner-Hanna Coke Plant

The former Donner-Hanna Coke Plant property encompasses three adjoining parcels (122.20-1-21, 122.20-1-5.1, and 132.08-1-6) totaling approximately 53.0 acres (see Figure 2). Area II, partially intersected by Baraga Street, is bordered by an adjacent earthen berm along Abby Street and residential neighborhoods to the east; the former Norfolk Southern property and the former August Feine parcel (now part of the Riverbend Site) to the north; Area III to the south; and a railroad corridor and rail yard to the west. Remedial efforts conducted in Area II included:

- Construction of a 14-acre Containment Cell with slurry wall, low-permeability cover system, and a groundwater collection and conveyance system
- Construction of a groundwater pre-treatment system (GWPTS)
- In-situ "hotspot" remediation

2.3 Area III – Former Warehouse Parcel

The former Republic Steel Warehouse property encompasses two adjoining parcels (132.08-1-7 and 132.12-1-9.11) totaling approximately 43.2 acres (see Figure 2). Area III is bordered by Abby Street and residential neighborhoods to the east; Area II to the north; Former Area IV (currently Hydro-Air Components) to the south; and an active railroad corridor and rail yard to the west. Remedial efforts conducted in Area III included:

- On-site blue-stained soil/fill treatment and disposal/consolidation in the Area II Containment Cell
- On-site lead-impacted soil/fill treatment and disposal/consolidation in the Area II Containment Cell
- Tar-impacted soil/fill disposal/consolidation in Area II Containment Cell
- In situ groundwater treatment with oxygen release compound (ORC) at 11 ORC treatment wells

2.4 Former August Feine Parcel

The former August Feine property encompasses one parcel (122.20-1-22) approximately 4.7 acres in size (see Figure 2). This property is surrounded by Area II on the west, south, and east; and the former Norfolk Southern property to the north (Baraga Street dead ends at the entrance to this parcel). The August Feine property, though relevant and proximate to the RiverBend Site, is not under any NYSDEC program or subject to a SMP under the RiverBend VCA. As such, any discussions or findings as a result of the site assessment regarding the August Feine property are provided herein for informational purposes only.

A July 2006 site assessment of the former August Feine parcel identified localized VOC (primarily benzene) and total metal (plus cyanide) impacts to subsurface soil/fill and shallow groundwater along the common boundary with Area II. Based on the proximity of these identified impacts to the Area II groundwater collection trench, the leachable impacts, if any, are being captured and treated by the groundwater collection system, mitigating downgradient migration and potential environmental impact. As such, no additional remediation, beyond those already being implemented in accordance with the VCA for Area II, was recommended. Any potential for subsurface soil/fill exposure during future development of the property (i.e., utility installation) will be addressed in accordance with the Soil/Fill Management Plan (see Section 3.3).

2.5 Former Norfolk Southern Parcel

The former Norfolk Southern property encompasses one parcel (122.20-1-23.1) approximately 22.16 acres in size (see Figure 2). The property is bounded on the north by Area I and Area II and the former August Feine property to the south. The former Norfolk Southern property was historically used to transport manufactured steel, iron, metallurgical coke, and coke by-products for Republic Steel and Donner Hanna Coke. This property, though relevant and proximate to the RiverBend Site, is not under any NYSDEC program or subject to a SMP under the RiverBend VCA, but is owned by FSMC.

3.0 SITE MANAGEMENT PLAN

Areas I, II, and III of the RiverBend Site are managed by two separate Site Management Plans (SMPs). One SMP covers Area I (Ref. 2) and the second covers Areas II and III (Ref. 3). Both SMPs include Operation, Monitoring, and Maintenance (OM&M) Plans; Long-Term Groundwater Monitoring (LTGWM) Plans; Soil/Fill Management Plans (SFMPs); and Environmental Easements (also identified as Covenant and Restrictions) for their respective parcels. A brief description of these SMP components is presented below.

3.1 Operation, Monitoring, and Maintenance (OM&M) Plan

As a requirement of the OM&M Plans, annual inspection of Areas I, II, and III are required; as there are no engineering controls on the former August Feine parcel the site inspection is provided for informational purposes only. The NYSDEC PRR Institutional and Engineering Controls (IC/EC) Certification Form has replaced the previously used Environmental Inspection Forms for each Area. Appendix A includes the completed IC/EC Form for the current period. Details of the annual inspection and completion of the IC/EC Form is discussed in Sections 3.5 and 3.6 below.

3.1.1 Area I

The Area I SMP provides the details for Operation and Maintenance (O&M) related to the product recovery at monitoring well A1-MW-6. Specifically, the O&M Plan details the product recovery system inspection program, routine maintenance operations, and reporting requirements. In February 2017 due to very low product recovery volumes, the NYSDEC approved discontinuing the use of a passive skimmer in well A1-MW-6 in lieu of an absorbent pad.

3.1.2 Area II

The Area II SMP provides the O&M details related to the groundwater collection and conveyance system, including the soil flushing system; groundwater pre-treatment system (GWPTS) including the bag filters, carbon vessels, transfer pumps, separator tank, and general house-keeping; sewer discharge effluent monitoring; and low-permeability cover system (i.e., landfill post-closure monitoring and cover maintenance). Appendix B includes the Area II GWPTS annual progress report submitted to the NYSDEC and the two semi-

annual effluent compliance monitoring reports submitted to the Buffalo Sewer Authority (BSA) during the current reporting period.

3.1.3 Area III

The Area IIII O&M plan provides the details related to the in-situ groundwater treatment with oxygen release compound (ORC) at 11 ORC treatment wells. ORC monitoring results are included in the annual groundwater monitoring report (Appendix C; and discussed in Section 3.2 below). Appendix D includes the June and November 2018 ORC semi-annual event inspection forms.

3.1.4 Former August Feine Parcel

There are no voluntary cleanup O&M requirements for the former August Feine parcel. In June 2009, the former August Feine building caught fire and emergency demolition followed. A concrete slab on grade foundation and a small brick walled shed is all that remained, and storm water management of this area was subsequently discontinued. In September 2015 and with NYSDEC approval, the footprint of the former August Feine building was filled in with processed concrete material generated during Area I redevelopment. A substation servicing the redevelopment on Area I was constructed on the August Feine parcel in 2016.

3.1.5 Former Norfolk Southern Parcel

There are no voluntary cleanup O&M requirements for the former Norfolk Southern parcel.

3.2 Long-Term Groundwater Monitoring (LTGWM) Plan

As a requirement of the SMPs, long-term groundwater monitoring is being performed at the Site. A Long-Term Groundwater Monitoring (LTGWM) Work Plan was prepared by TurnKey in March 2000 (revised June 2005 for Area I. Similarly, LTGWM Work Plans were prepared by others in October 2007 for Areas II (revised April 2008) and III. Groundwater monitoring began in 2004 for Area I and in 2007 for Areas II and III. Since 2009 and with NYSDEC approval, LTGWM for Areas I, II, and III was modified into a combined site-wide monitoring and reporting event. A total of 23 network monitoring

wells are sampled across the Site including 11 wells in Area I, 7 wells in Area II, and 5 wells in Area III. In addition to the groundwater monitoring network wells, six additional wells in Area II are monitored for water level only.

In May 2011, the NYSDEC approved a modification of the groundwater parameter lists and sample frequency for Areas I, II, and III. The modified monitoring program for the 3 Areas now follows a 2-year monitoring cycle (e.g., bi-annual) as presented in Appendix C. In general, this modification reduces the VOC and metals analysis frequency to once every other year for most wells while the collection of field parameters must be measured every year going forward. Currently, groundwater monitoring is performed on an annual basis and ORC monitoring is performed semi-annually (every 6 months). The activities performed during each groundwater monitoring event are performed in general accordance with the following documents:

- *Work Plan for Long-Term Groundwater Monitoring (LTGWM) of Area I* (revised June 2005 Ref. 4)
- *Work Plan for LTGWM of Areas II and III* (October 2007) submitted as Attachment A4 of Appendix HH of the Final Engineering Report for Areas II and III (Ref. 5)
- May 5, 2008 Response to NYSDEC comment letter regarding Area III Site Management Plan (comment/responses 8, 9, and 10)
- May 5, 2008 Response to NYSDEC comment letter regarding Areas II and III Final Engineering Report (comment/responses 19 and 22)
- *ORC Maintenance and Monitoring Manual* (March 2008) submitted as Attachment A5 of Appendix HH of the Final Engineering Report for Areas II and III (Ref. 5)
- May 5, 2011 NYSDEC Response to Modification Request Letter.

In June 2016 and upon NYSDEC notification, wells A1-MW-8R and A1-MW-10 were installed to replace historically decommissioned well A1-MW-8 and piezometer A1-MW-P-4, respectively. In September 2016 and upon NYSDEC consultation and approval, it was determined that wells A1-MW-4 and A1-MW-M2 and piezometer A1-P-2 were located within the Area I Variance Area footprint and required removal and relocation. As such, these wells and the piezometer were decommissioned in general accordance with NYSDEC Commissioners Policy 43 (CP-43: Groundwater Monitoring Well Decommissioning). In May 2017, replacement wells A1-MW-4R and A1-MW-11 were installed for decommissioned wells A1-MW-4 and A1-MW-M2, respectively, and are sampled as part of the LTGWM plan.

Upon NYSDEC concurrence, it was determined that piezometer A1-P-2 did not require replacement.

Appendix C includes the 2018 Comprehensive Annual Groundwater Monitoring Report for Areas I, II, and III. This report includes the results of the September 2018 groundwater monitoring event as well as the results of the June and November 2018 ORC semi-annual monitoring events for Area III, all of which were conducted during the current PRR period (May 1, 2018 through May 1, 2019). Appendix D includes the ORC inspection forms for the June and November 2018 events.

3.3 Soil/Fill Management Plan

A Soil/Fill Management Plan (SFMP) was included in the approved SMPs for each Area of the Site. The SFMP provides guidelines for the management of soil and fill material during any future intrusive activities.

3.4 Institutional and Engineering Control Requirements

As detailed in the SMPs, several institutional controls (ICs) and engineering controls (ECs) are to be maintained as a requirement of the VCA for the Site.

3.4.1 Institutional Controls

Three RiverBend parcels (Areas I, II, and III) are subject to the following ICs:

- Groundwater-Use Restriction: The use of groundwater for potable and non-potable purposes is prohibited
- Land-Use Restriction: The controlled property may be used for commercial and/or industrial use
- Soil/Fill Management Plan

Additionally, Areas II and III are subject to compliance with the O&M Plans for their respective areas, as described in Section 3.1.

3.4.2 Engineering Controls

Three RiverBend parcels (Areas I, II, and III) are subject to several ECs as indicated by Area below.

- Area I: Maintain vegetative cover and perimeter fencing; soil/fill management; soil vapor intrusion (SVI) evaluation before on-site building construction or installation of vapor mitigation system during on-site building construction and prior to occupancy (effective 08/16/2007).
- Area II: Maintain final cover system of containment cell and maintain vegetative cover outside containment cell area until build-out whereupon one foot of clean cover or alternative with a demarcation layer is required; O&M of GWPTS; O&M of containment cell and perimeter fencing; soil/fill management; soil vapor intrusion (SVI) evaluation before on-site building construction or installation of vapor mitigation system during on-site building construction and prior to occupancy (effective 05/21/2008).
- Area III: Maintain vegetative cover (limited area sampling required before build-out, failure to meet Site Specific Action Levels (SSALs) would require one foot of clean cover or alternative with a demarcation layer); O&M of passive groundwater treatment (e.g., ORC) and perimeter fencing; soil/fill management; soil vapor intrusion (SVI) evaluation before on-site building construction or installation of vapor mitigation system during on-site building construction and prior to occupancy (effective 05/21/2008).

3.5 Site Inspection & IC/EC Compliance

On May 24, 2019, Benchmark's Certifying Professional Engineer performed a Site assessment of Areas I, II, and III, including the former August Feine and Norfolk Southern parcels. The following sections provide a parcel-by-parcel description of the Site assessment and maintenance activities performed. Appendix A includes the completed IC/EC Form for Areas I, II, and III. Appendix E includes a photographic log of the Site.

3.5.1 Area I

Redevelopment activities associated with Area I are complete. A 1.2 million square-foot manufacturing building (Tesla) was constructed and is in service. Redevelopment activities subject to the Area I SMP are summarized in the RiverBend Area I Construction Completion Report (Area I CCR, Ref. 6). At the time of the May 2019 inspection, Area I was in compliance with the IC/ECs.

3.5.2 Area II

At the time of the May 2019 inspection, Area II, including the pump stations, GWTS and Containment Cell, was in compliance with the IC/ECs.

3.5.3 Area III

At the time of the May 2019 inspection, Area III was vacant and in compliance with the IC/ECs.

3.5.4 Former August Feine Parcel

At the time of the May 2019 inspection, the former August Feine parcel was vacant. There are no IC/ECs associated with this parcel; therefore, this parcel is not included on the IC/EC Form.

3.5.5 Former Norfolk Southern Parcel

At the time of the May 2019 inspection, the former Norfolk Southern parcel was vacant. There are no IC/ECs associated with this parcel; therefore, this parcel is not included on the IC/EC Form.

3.6 Abby & Baraga Streets Surface Drainage System

Although not a component of the Area II SMP, TurnKey personnel perform a monthly inspection of the drainage system including the Baraga Street manhole due to historic blockages in the system resulting in past complaints of ponding water along Abby Street. As requested by the NYSDEC, the surface drainage system background and monthly assessment results are provided below.

3.6.1 Background

The surface drainage system at the RiverBend Site was installed to mitigate breakout of calcium-rich surface water resulting from the underlying slag and lime materials in the vicinity of the berm along Abby Street. Since 1998, the drainage system has functioned as intended, but has required periodic maintenance and repair to remedy clogs due to calcium and sediment build-up and occasional damage from heavy snow removal equipment. More recently the surface drainage system required repair and modification due to significant damage to the Berm from South Park to Baraga Street caused by vehicle rutting, particularly in the Abby Street drain vicinity, which prevented the system from functioning as intended.

In May 2014, TurnKey performed repairs and modifications to the original Abby Street drainage system to restore function and to allow the system to be more efficient. The

modified Abby Street drainage system configuration is presented in Figure 3. Both the Berm and drainage system are inspected monthly.

On April 4, 2018, TurnKey had Pinto Construction Services, Inc. (Pinto) flush the Abby Street Drainage System via high-pressure water injection. Observed flows within the Baraga Street manhole indicate the system is operating as intended. No further activities were required or performed on the Abby Street drain system during the current reporting period (May 1, 2018 through May 1, 2019).

4.0 CONCLUSIONS AND RECOMMENDATIONS

At the time of the inspection, the Site was in compliance with the IC/ECs. No modifications to the OM&M procedures are recommended at this time.

5.0 DECLARATION/LIMITATION

TurnKey Environmental Restoration, LLC in association with Benchmark Environmental Engineering and Science, PLLC, personnel conducted the annual site inspections for Voluntary Cleanup Program Site No. V00619, located in Buffalo, New York, according to generally accepted practices. This report complies with the scope of work provided to FSMC by TurnKey Environmental Restoration, LLC.

This report has been prepared for the exclusive use of Fort Schuyler Management Corporation. The contents of this report are limited to information available at the time of the site inspection. The findings herein may be relied upon only at the discretion of Fort Schuyler Management Corporation. Use of or reliance upon this report or its findings by any other person or entity is prohibited without written permission of TurnKey Environmental Restoration, LLC and/or Benchmark Environmental Engineering and Science, PLLC.

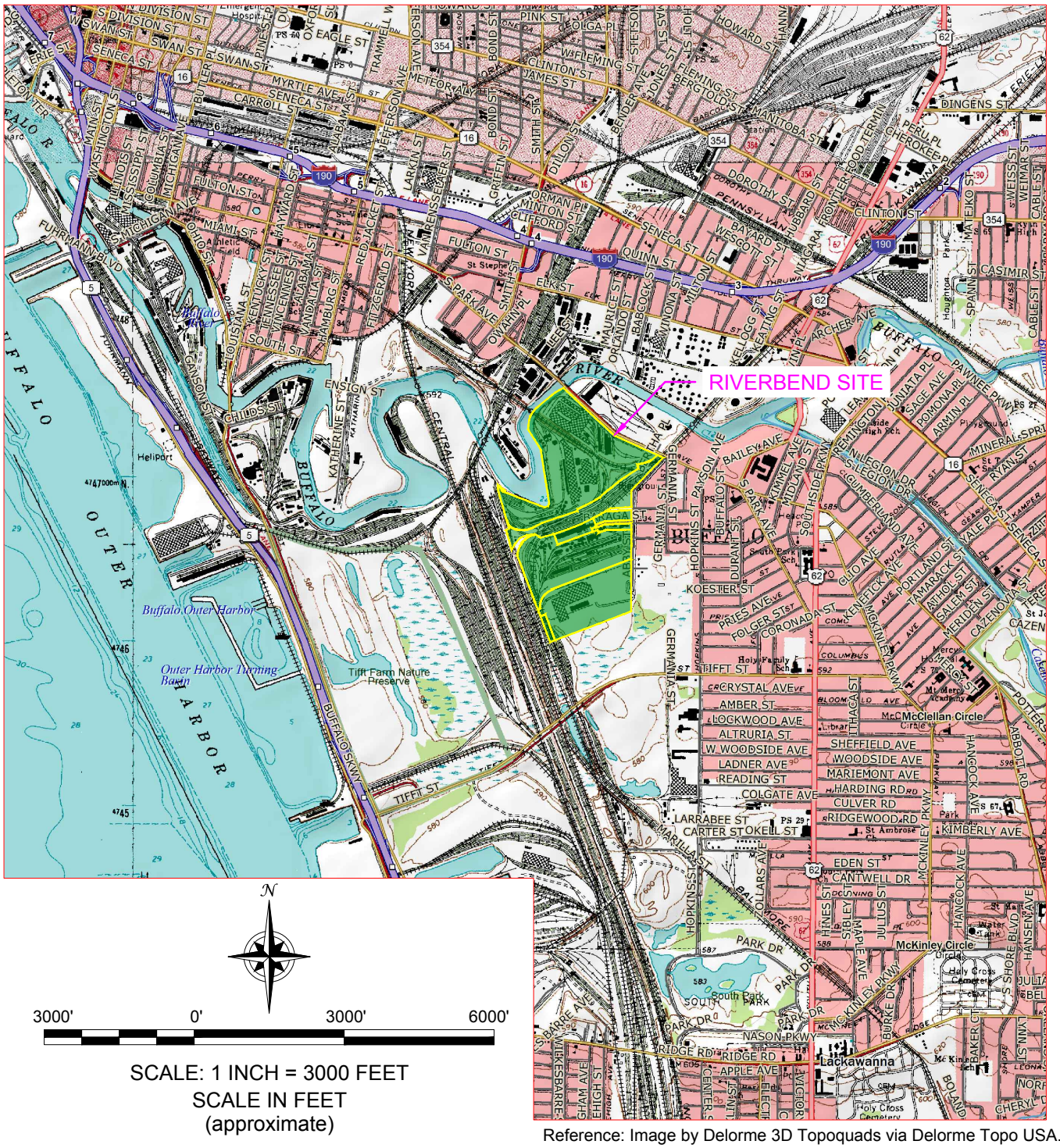
6.0 REFERENCES

1. New York State Department of Environmental Conservation. *DER-10; Technical Guidance for Site Investigation and Remediation.* May 2010.
2. *Site Management Plan for Area I (former Republic (LTV) Steel Parcel), Steelfields Site, Buffalo, NY (NYSDEC Site # V00619-9),* dated Revised August 2016, prepared by TurnKey Environmental Restoration, LLC and Benchmark Environmental Engineering and Science, PLLC.
3. *Final Engineering Report for Areas II & III, Former Donner-Hanna Coke Plant and Republic (LTV) Steel Properties, Steelfields Site Buffalo, NY (NYSDEC Site #V00133-9), Appendix GG and HH,* dated May 2008, prepared by Malcolm Pirnie.
4. *Work Plan for Long-Term Groundwater Monitoring, Former Steel Manufacturing Site, Buffalo, NY*, prepared for Steelfields Ltd., revised June 2005 by TurnKey Environmental Restoration, LLC.
5. *Final Engineering Report for Areas II & III, Former Donner-Hanna Coke Plant and Republic (LTV) Steel Properties, Steelfields Site Buffalo, NY (NYSDEC Site #V00133-9), Appendix HH – Attachments A4 and A5,* dated May 2008, prepared by Malcolm Pirnie.
6. *Construction Completion Report, RiverBend Area I, Voluntary Cleanup Program, VCP Site No. V00619-1, Buffalo New York.* Prepared by TurnKey Environmental Restoration, PLLC. April 2018.

FIGURES

F:\CAD\TurnKey\Riverbend (formerly Steelfields)\PRR\2018 - May 1, 2017 through May 1, 2018\Figure 1; Site Vicinity and Location Map (2018).dwg

FIGURE 1



SCALE: 1 INCH = 3000 FEET
SCALE IN FEET
(approximate)

Reference: Image by Delorme 3D Topoquads via Delorme Topo USA.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
TURNKEY ENVIRONMENTAL RESTORATION, LLC
2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218, (716) 856-0599

PROJECT NO.: 0322-017-500

DATE: May 2018

DRAFTED BY: CMC

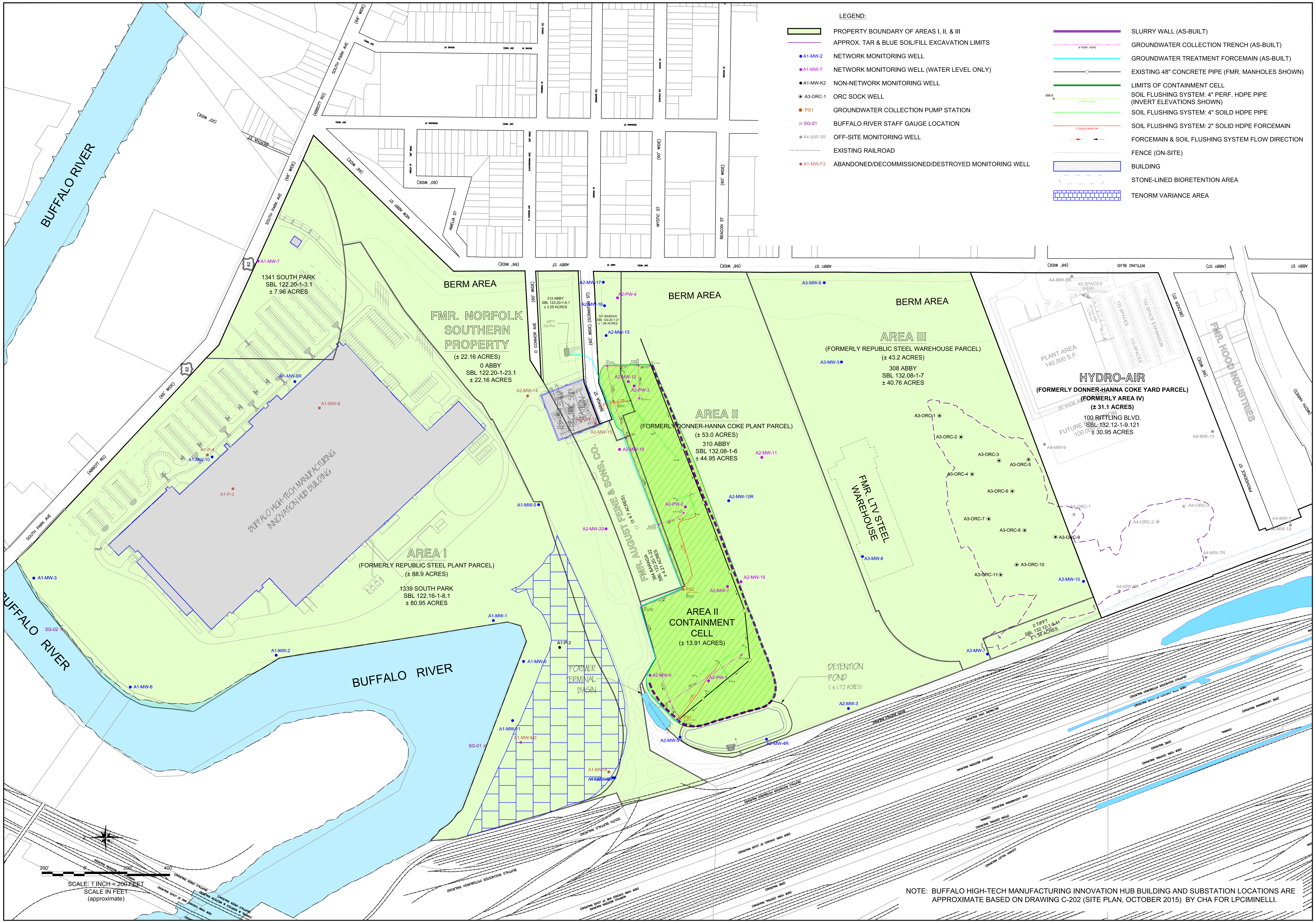
SITE VICINITY & LOCATION MAP

PERIODIC REVIEW REPORT

RIVERBEND SITE
BUFFALO, NEW YORK

PREPARED FOR

FORT SCHUYLER MANAGEMENT CORPORATION



LEGEND:
PROPERTY BOUNDARY OF AREAS I, II, & III
APPROX. TAR & BLUE SOIL/FILL EXCAVATION LIMITS
NETWORK MONITORING WELL
NETWORK MONITORING WELL (WATER LEVEL ONLY)
NON-NETWORK MONITORING WELL
ORC SOCK WELL
GROUNDWATER COLLECTION PUMP STATION
BUFFALO RIVER STAFF GAUGE LOCATION
OFF-SITE MONITORING WELL
EXISTING RAILROAD
ABANDONED/DECOMMISSIONED/DESTROYED MONITORING WELL
SLURRY WALL (AS-BUILT)
GROUNDWATER COLLECTION TRENCH (AS-BUILT)
GROUNDWATER TREATMENT FORCEMAIN (AS-BUILT)
EXISTING 48" CONCRETE PIPE (FMR. MANHOLES SHOWN)
LIMITS OF CONTAINMENT CELL
SOIL FLUSHING SYSTEM: 4" PERF. HDPE PIPE (INVERT ELEVATIONS SHOWN)
SOIL FLUSHING SYSTEM: 4" SOILD HDPE PIPE
SOIL FLUSHING SYSTEM: 2" SOLID HDPE FORCEMAIN
FORCEMAIN & SOIL FLUSHING SYSTEM FLOW DIRECTION
FENCE (ON-SITE)
BUILDING
STONE-LINED BIORETENTION AREA
TENORM VARIANCE AREA
BUFFALO RIVER
BERM AREA
1341 SOUTH PARK
SBL 122.20-1-3.1
± 7.96 ACRES
FMR. NORFOLK SOUTHERN PROPERTY
(± 22.16 ACRES)
0 ABBY
SBL 122.20-1-23.1
± 22.16 ACRES
BUFFALO HIGH-TECH MANUFACTURING INNOVATION HUB BUILDING
AREA I
(FORMERLY REPUBLIC STEEL PLANT PARCEL)
(± 88.9 ACRES)
1339 SOUTH PARK
SBL 122.16-1-8.1
± 80.95 ACRES
FMR. AUGUST FEINE & SONS, CO.
AREA II
(FORMERLY DONNER-HANNA COKE PLANT PARCEL)
(± 53.0 ACRES)
310 ABBY
SBL 132.08-1-6
± 44.95 ACRES
AREA II CONTAINMENT CELL
(± 13.91 ACRES)
FORMER TERMINAL BASIN
DETENTION POND
AREA III
(FORMERLY REPUBLIC STEEL WAREHOUSE PARCEL)
(± 43.2 ACRES)
308 ABBY
SBL 132.08-1-7
± 40.76 ACRES
FMR. LTV STEEL WAREHOUSE
HYDRO-AIR
(FORMERLY DONNER-HANNA COKE YARD PARCEL)
(FORMERLY AREA IV)
(± 31.1 ACRES)
100 RITTLING BLVD.
SBL 132.12-1-9.121
± 30.95 ACRES
PLANT AREA
140,000 S.F.
FMR. HOOD INDUSTRIES
SOUTH PARK AVE
ABBY ST
RITTLING BLVD
SCALE: 1 INCH = 200 FEET
SCALE IN FEET
(approximate)
NOTE: BUFFALO HIGH-TECH MANUFACTURING INNOVATION HUB BUILDING AND SUBSTATION LOCATIONS ARE APPROXIMATE BASED ON DRAWING C-202 (SITE PLAN, OCTOBER 2015) BY CHA FOR LPCIMINELLI.

TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

JOB NO.: 0322-017-500

REVISIONS

NO.	BY	DATE	REMARKS

SEAL

DRAWN BY: BCH-CMC
DATE: MAY 2018
CHECKED BY:
APPROVED BY:

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SITE PLAN

PERIODIC REVIEW REPORT
FORMER STEEL MANUFACTURING SITE
BUFFALO, NEW YORK

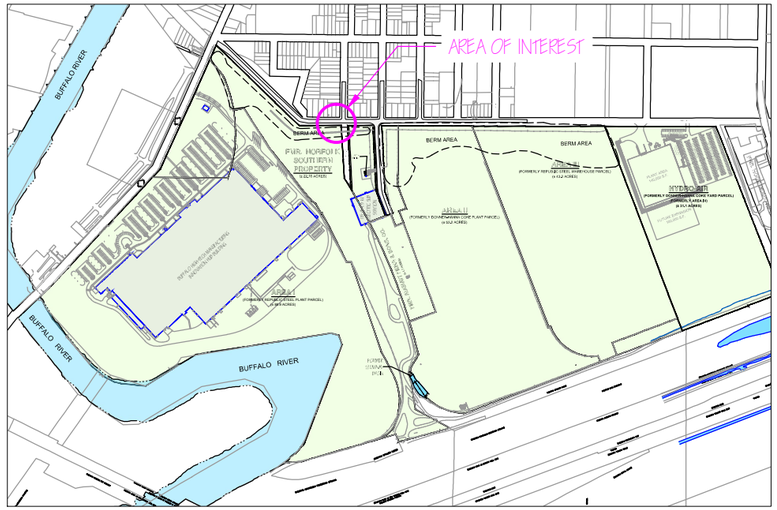
PREPARED FOR
FORT SCHUYLER MANAGEMENT CORPORATION

FIGURE 2

F:\CAD\TurnKey\Riverbend (formerly Steelfields)\PRR2018 - May 1, 2017 through May 1, 2018\Figure 3; Abby Street Drain Site Sketch (2018).dwg

SITE PLAN:

SCALE (APPROX.): 1" = 1200'



ABBY-EAST DRAIN
(4-INCH PERFORATED / CORRUGATED)

ABBY-SECONDARY RELIEF DRAIN
(6-INCH PERFORATED / CORRUGATED)

O'CONNER STREET MANHOLE

O'CONNER ST.

ABBY ST. (66' R.O.W.)

DI

DI

DI

STOP

STOP

18" PVC

BARAGA STREET MANHOLE

M.H. (PAVED OVER)

EXIST. 6" V.T.

CLEAN-OUT

CLEAN-OUT

CLEAN-OUT

CLEAN-OUT

ABBY-WEST DRAIN
(6-INCH PERFORATED / CORRUGATED)

ABBY-MAIN DRAIN
(FORMERLY ABBY-WEST)
(6-INCH PERFORATED / CORRUGATED)

ABBY-MAIN FINGER DRAIN
(6-INCH RIGID PERFORATED / CORRUGATED)

BARAGA ST. DRAIN
(6-INCH PERFORATED / CORRUGATED)

ABBY-MAIN DRAIN
(6-INCH PERFORATED / CORRUGATED)

R ST. (PAPER)

LEGEND:

- EDGE OF PAVEMENT (ABBY STREET)
- NEW ABBY STREET DRAIN LINES
- EXISTING ABBY STREET DRAIN LINES
- SANITARY SEWER LINES (APPROX.)
- WATER LINES (APPROX.)
- GAS LINES (APPROX.)
- MANHOLE
- DI — DROP INLET

N

50' 0' 50' 100'

SCALE: 1 INCH = 50 FEET
SCALE IN FEET
(approximate)

DATE: MAY 2018
DRAFTED BY: BCH-CMC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

TurnKey Environmental Restoration, LLC

JOB NO.: 0322-017-500

ABBEY STREET DRAINAGE SYSTEM SITE SKETCH

PERIODIC REVIEW REPORT
RIVERBEND SITE
BUFFALO, NEW YORK

PREPARED FOR
FORT SCHUYLER MANAGEMENT CORPORATION

FIGURE 3

APPENDIX A

SITE INSPECTION (IC/EC) FORM

Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. **V00619**

Site Name Steelfields (aka Riverbend)

Site Address: 312 Abby Street Zip Code: 14220
City/Town: Buffalo
County: Erie
Site Acreage: 182.000

Reporting Period: May 01, 2018 to May 01, 2019

	YES	NO
1. Is the information above correct?	☑	☐
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☑
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☑
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☑
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	☑

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Commercial and Industrial	☑	☐
7. Are all ICs/ECs in place and functioning as designed?	☑	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative Date

SITE NO. V00619 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
122.16-1-8.1	Fort Schuyler Management Corporation	Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan O&M Plan

Area I: Maintain vegetative cover, land use restriction, fencing, groundwater use prohibition, soil/fill management, SVI evaluation or installation of vapor mitigation system before buildout. (8/16/07)

122.20-1-21	Fort Schuyler Management Corporation	Monitoring Plan Ground Water Use Restriction Soil Management Plan Landuse Restriction O&M Plan

Area II: Maintain vegetative cover until buildout whereupon one foot of clean cover or alternative with a demarcation layer is required, O&M of groundwater pre-treatment plant, O&M of containment cell, land use restriction, fencing, groundwater use prohibition, soil/fill management, SVI evaluation or installation of vapor mitigation system before buildout. (5/21/08)

122.20-1-3.1	Fort Schuyler Management Corporation	Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan O&M Plan

Area I: Maintain vegetative cover, land use restriction, fencing, groundwater use prohibition, soil/fill management, SVI evaluation or installation of vapor mitigation system before buildout. (8/16/07)

122.20-1-5.1	Fort Schuyler Management Corporation	Monitoring Plan Ground Water Use Restriction Soil Management Plan Landuse Restriction O&M Plan

Area II: Maintain vegetative cover until buildout whereupon one foot of clean cover or alternative with a demarcation layer is required, O&M of groundwater pre-treatment plant, O&M of containment cell, land use restriction, fencing, groundwater use prohibition, soil/fill management, SVI evaluation or installation of vapor mitigation system before buildout. (5/21/08)

132.08-1-6	Fort Schuyler Management Corporation	O&M Plan Ground Water Use Restriction Soil Management Plan

Landuse Restriction
Monitoring Plan

Area II: maintain vegetative cover until buildout whereupon one foot of clean cover or alternative with a demarcation layer is required, O&M of groundwater pre-treatment plant, O&M of containment cell, land use restriction, fencing, groundwater use prohibition, soil/fill management, SVI evaluation or installation of vapor mitigation system before buildout. (5/21/08)

132.08-1-7 Fort Schuyler Management Corp.

Monitoring Plan
Ground Water Use Restriction
Soil Management Plan
Landuse Restriction
O&M Plan

Area III: Maintain vegetative cover (limited area sampling required before buildout, failure to meet SSALs would require one foot of clean cover or alternative with a demarcation layer), O&M of passive groundwater treatment, land use restriction, fencing, groundwater use prohibition, soil/fill management, SVI evaluation or installation of vapor mitigation system before buildout. (5/21/08)

132.12-1-9.11 Fort Schuyler Management Corp.

Ground Water Use Restriction
Soil Management Plan
Landuse Restriction
O&M Plan

Monitoring Plan

Area III: Maintain vegetative cover (limited area sampling required before buildout, failure to meet SSALs would require one foot of clean cover or alternative with a demarcation layer), O&M of passive groundwater treatment, land use restriction, fencing, groundwater use prohibition, soil/fill management, SVI evaluation or installation of vapor mitigation system before buildout. (5/21/08)

Box 4

Description of Engineering Controls

Parcel	Engineering Control
122.16-1-8.1	Cover System Fencing/Access Control
122.20-1-21	Groundwater Treatment System Cover System Groundwater Containment Leachate Collection Fencing/Access Control
122.20-1-3.1	Cover System Fencing/Access Control
122.20-1-5.1	Groundwater Treatment System Cover System Fencing/Access Control
132.08-1-6	Groundwater Treatment System Cover System Groundwater Containment Leachate Collection

Parcel	Engineering Control
	Fencing/Access Control
132.08-1-7	
	Cover System Fencing/Access Control
132.12-1-9.11	
	Cover System Fencing/Access Control

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
☑	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
☑	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. V00619

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Scott Bateman at FORT SCHUYLER MANAGEMENT CORP.
print name print business address

am certifying as OWNER (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

5/29/19
Date

IC/EC CERTIFICATIONS

Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Thomas Forbes at Benchmark Environmental Engineering 2558 Hamburg TPK Buffalo, NY 14218,
print name print business address

am certifying as a Professional Engineer for the Owner
(Owner or Remedial Party)

STATE OF NEW YORK THOMAS H. FORBES No. 70581 LICENSED PROFESSIONAL ENGINEER

Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification — Stamp (Required for PE) — 5-30-19 Date

APPENDIX B

AREA II

ANNUAL GWPTS REPORT
&
BSA SEMI-ANNUAL COMPLIANCE MONITORING REPORTS

ANNUAL PROGRESS REPORT FOR THE
OPERATION, MAINTENANCE, AND MONITORING SERVICES
RiverBend, LLC
(Site No. V00619-9)
197 Baraga St,
Buffalo NY, 14210

PROGRESS REPORT No. 19
REPORTING PERIOD ENDING DECEMBER 31, 2018

Project Description

This Annual Progress Report has been prepared for the RiverBend, LLC Groundwater Pre-Treatment System (GWPTS) located at 312 Abby Street, Buffalo, NY in accordance with the requirements of the Site Management Plan and at the request of the NYSDEC. In accordance with our NYSDEC-approved Modification Request (dated April 25, 2011), this Progress Report covers one-year operation and maintenance of the GWPTS from January 1, 2018 through December 31, 2018.

1.0 Treatment Statistics

- Approximately 9,427,491 gallons of groundwater was collected and treated over the current monitoring period averaging 25,771 gallons per day.
- System was on-line for approximately 99% of the time.
- System was off-line for approximately 1% of the time.
- Approximately 156.5 pounds of tar was generated from the oil/water separator and non-routine pump station cleaning activities. Based on this monthly quantity (less than 13 pounds per calendar month), a Hazardous Waste Report is not required making FSMC's RiverBend Site a Conditionally Exempt Small Quantity Generator (CESQG) in accordance with Part 371.1(f). For comparison, quantities of generated tar during previous years of operation included: ± 659 pounds in 2012, ± 912 pounds in 2013, ± 139.4 pounds in 2014, ± 296.9 pounds in 2015, ± 1614.8 pounds in 2016, and ± 2,535.4 pounds in 2017.
- On February 9, 2018, 5 drums of tar (approximately 236 gallons) were transported and disposed at US Ecology Detroit South (formerly EQ Detroit Inc.) of Detroit, Michigan as a D007 (53 O-cresol waste), D008 (54 M-cresol waste), D018 (55 P-cresol waste), and D030 (211 Mercury waste).

2.0 General Schedule of Maintenance Undergone

- Regular Maintenance Items
  - 2 bag filter changes/week or as necessary with weekly off-site remote monitoring via the internet.
  - Carbon filtration vessel back-washing: 2 times per week or as necessary
  - Decant tar from separator: 2 times per week or as necessary
- January 3, 2018 - Flow meter was calibrated.
- January 2018 – Cleaned the influent tank, effluent tank, and oil/water separator.

- May thru October 2018 – Mowed grass area and weed trimmed fence line around the treatment building, as necessary.
- June 8, 2018 – Changed the carbon in lead vessel #1. Lead and lag vessels were reversed at that time (vessel #1 became the lag and #2 the lead).
- June 12, 2018 – Annual certification/inspection associated with the Periodic Review Report (PRR) in accordance with DER-10 was performed.
- June 2018 – ORC monitoring in Area III was performed.
- September 2018 – Long-Term Groundwater Monitoring was performed in Areas I, II, and III.
- September 26, 2018 – Mowed final cover and weed trimmed penetrations associated with the Area II Containment Cell.
- November 2018 – ORC monitoring in Area III was performed.
- December 13, 2018 – Changed the carbon in lead vessel #2. Lead and lag vessels were reversed at that time (vessel #2 will become the lag and #1 the lead).

3.0 Attachments/Logs

- Attachment 1: Graph of monitored flows through treatment system for 2018
- Attachment 2: Maintenance Logs for 2018 (01/03/18 thru 01/08/19)
- Attachment 3: Generated Volume of Tar Material (01/03/18 thru 12/31/17)
- Attachment 4: Hazardous Waste Manifest (2/9/18)

ATTACHMENT 1

MONITORED FLOWS VS. TIME

ATTACHMENT 1

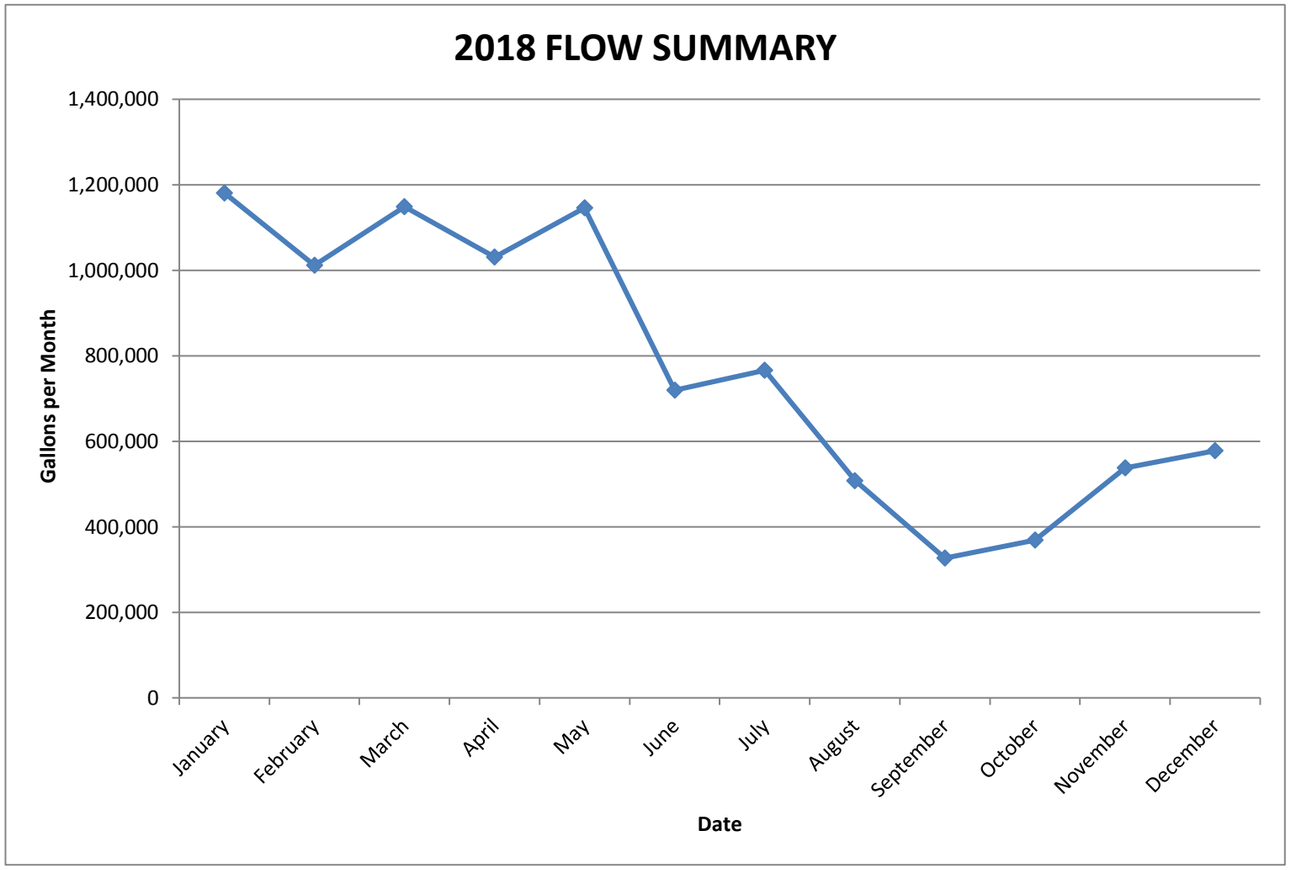
MONITORED FLOWS v. TIME
2018

Groundwater Pre-Treatment System (GWPTS)
Riverbend, LLC
(Site No. V00619-9)
Buffalo, New York

2018

Month	GPMo	GPD	GPM
January	1,181,053	38,098	26
February	1,011,469	34,878	24
March	1,148,920	37,062	26
April	1,031,091	34,370	24
May	1,146,071	36,970	26
June	719,681	23,989	17
July	766,029	24,711	17
August	508,256	16,395	11
September	326,777	10,893	8
October	369,054	11,905	8
November	537,635	17,921	12
December	578,105	18,649	13
Total	9,324,141		
Min.	326,777	10,893	8
Max.	1,181,053	38,098	26
Ave.	777,012	25,487	18

Since August 2008:		
Total	93,099,936	NA
Min.	191,242	6,169
Max.	2,318,235	77,104
Ave.	838,738	27,575

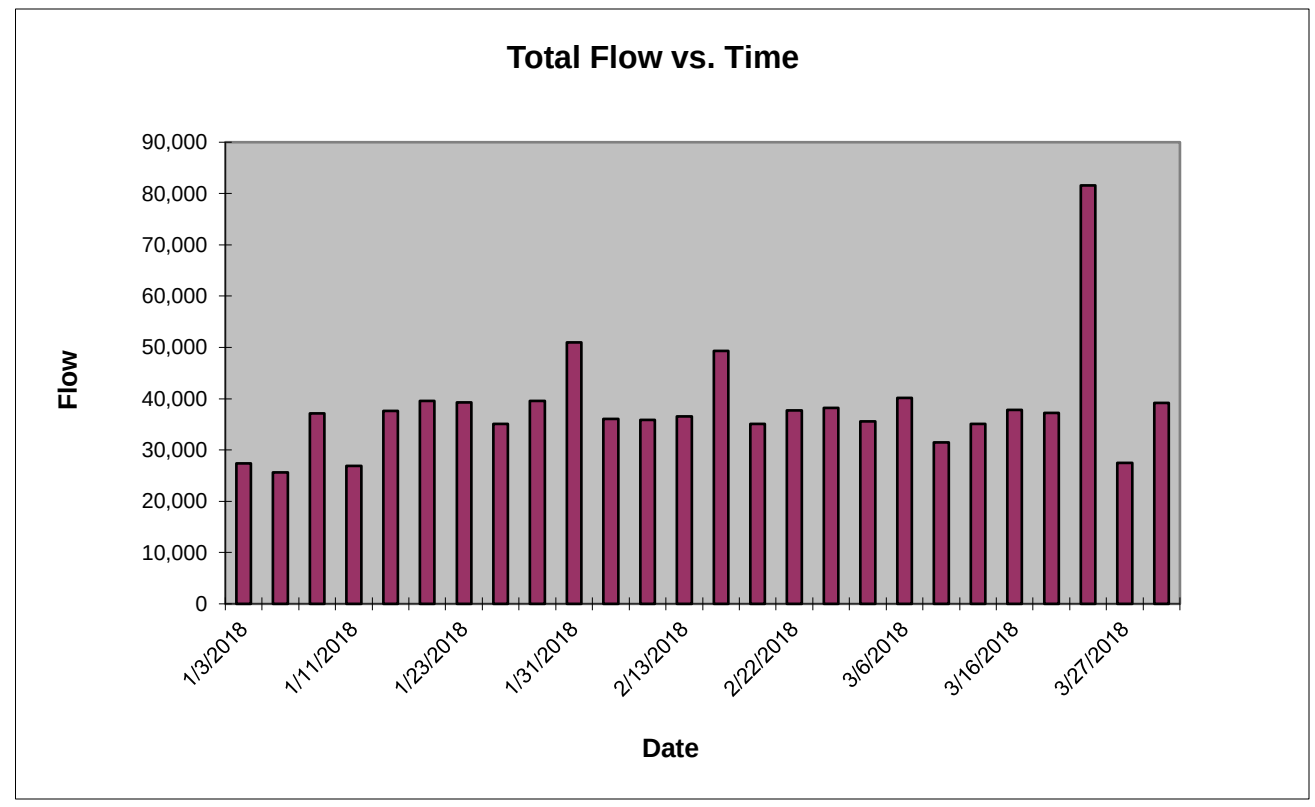


ATTACHMENT 1

MONITORED FLOWS v. TIME
FIRST QUARTER 2018

Groundwater Pre-Treatment System (GWPTS)
Riverbend, LLC
Buffalo, New York

Date	Total Flow	Daily Avg
1/3/2018	10,226,872	27,339
1/5/2018	51,206	25,603
1/9/2018	148,693	37,173
1/11/2018	202,473	26,890
1/16/2018	390,675	37,640
1/17/2018	430,226	39,551
1/23/2018	666,146	39,320
1/24/2018	701,203	35,057
1/30/2018	938,713	39,585
1/31/2018	989,680	50,967
2/6/2018	1,205,964	36,047
2/8/2018	1,277,635	35,836
2/13/2018	1,460,327	36,538
2/15/2018	1,559,049	49,361
2/20/2018	1,734,528	35,096
2/22/2018	1,809,954	37,713
2/27/2018	2,001,149	38,239
3/1/2018	2,072,230	35,541
3/6/2018	2,272,940	40,142
3/8/2018	2,335,866	31,463
3/12/2018	2,476,312	35,112
3/16/2018	2,627,418	37,777
3/21/2018	2,813,673	37,251
3/22/2018	2,895,261	81,588
3/27/2018	3,032,560	27,460
3/30/2018	3,150,069	39,170



Total Quarterly Flow: 3,341,442 gallons
Ave. Quarterly Flow: 36,680 gallons/day

JANUARY	
1,181,053	gallons/month
31	days
38,098	gallons/day
26	gallons/min

FEBRUARY	
1,011,469	gallons/month
29	days
34,878	gallons/day
24	gallons/min

MARCH	
1,148,920	gallons/month
31	days
37,062	gallons/day
26	gallons/min

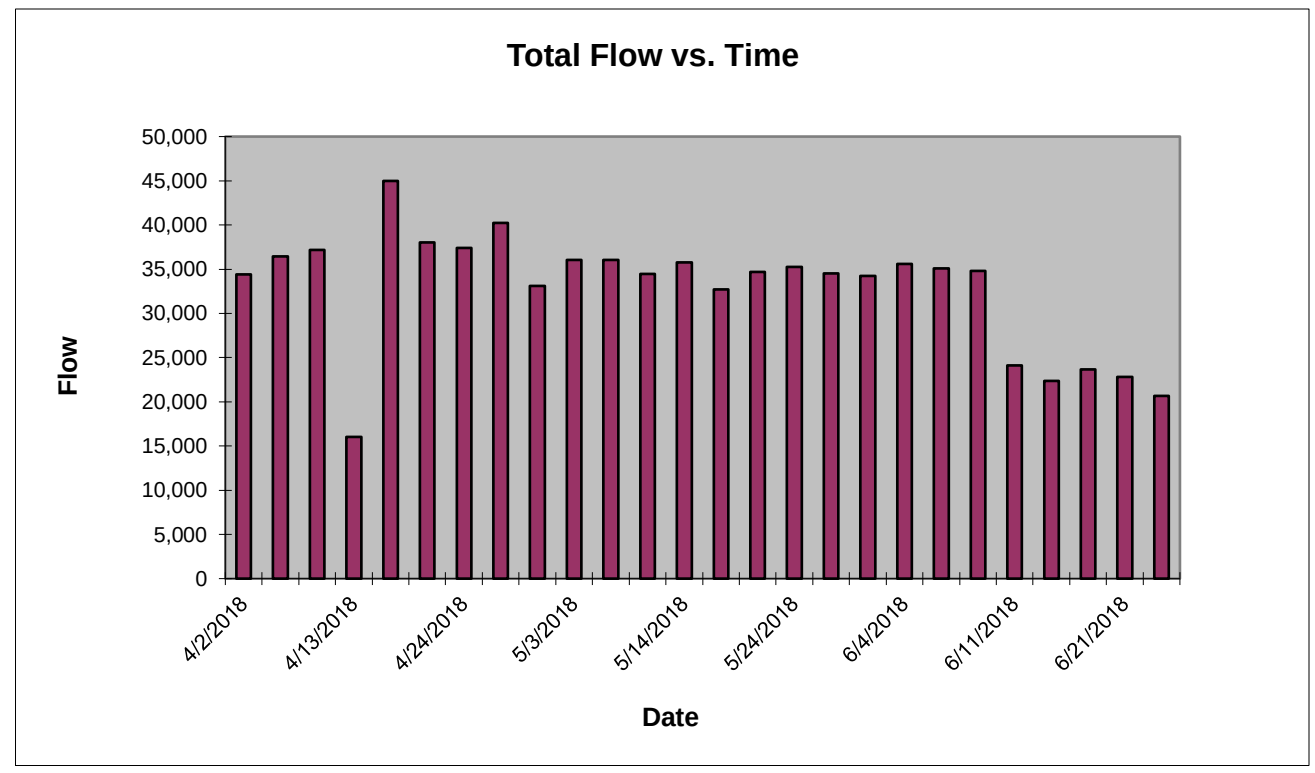
Notes:
flow meter calibrated and reset to zero on 01/03/18

ATTACHMENT 1

MONITORED FLOWS v. TIME
SECOND QUARTER 2018

Groundwater Pre-Treatment System (GWPTS)
Riverbend, LLC
Buffalo, New York

Date	Total Flow	Daily Avg
4/2/2018	3,253,255	34,395
4/5/2018	3,362,572	36,439
4/11/2018	3,585,612	37,173
4/13/2018	3,617,642	16,015
4/17/2018	3,797,492	44,963
4/19/2018	3,873,519	38,014
4/24/2018	4,060,453	37,387
4/27/2018	4,181,160	40,236
5/1/2018	4,313,554	33,099
5/3/2018	4,385,690	36,068
5/8/2018	4,566,014	36,065
5/10/2018	4,634,899	34,443
5/14/2018	4,777,858	35,740
5/17/2018	4,876,025	32,722
5/22/2018	5,049,399	34,675
5/24/2018	5,119,934	35,268
5/30/2018	5,327,231	34,550
6/1/2018	5,395,764	34,267
6/4/2018	5,502,524	35,587
6/6/2018	5,572,710	35,093
6/8/2018	5,642,343	34,817
6/11/2018	5,714,682	24,113
6/15/2018	5,804,233	22,388
6/18/2018	5,875,194	23,654
6/21/2018	5,943,562	22,789
6/26/2018	6,046,912	20,670



Total Quarterly Flow:	2,896,843	gallons
Ave. Quarterly Flow:	31,776	gallons/day

APRIL	
1,031,091	gallons/month
30	days
34,370	gallons/day
24	gallons/min

MAY	
1,146,071	gallons/month
31	days
36,970	gallons/day
26	gallons/min

JUNE	
719,681	gallons/month
30	days
23,989	gallons/day
17	gallons/min

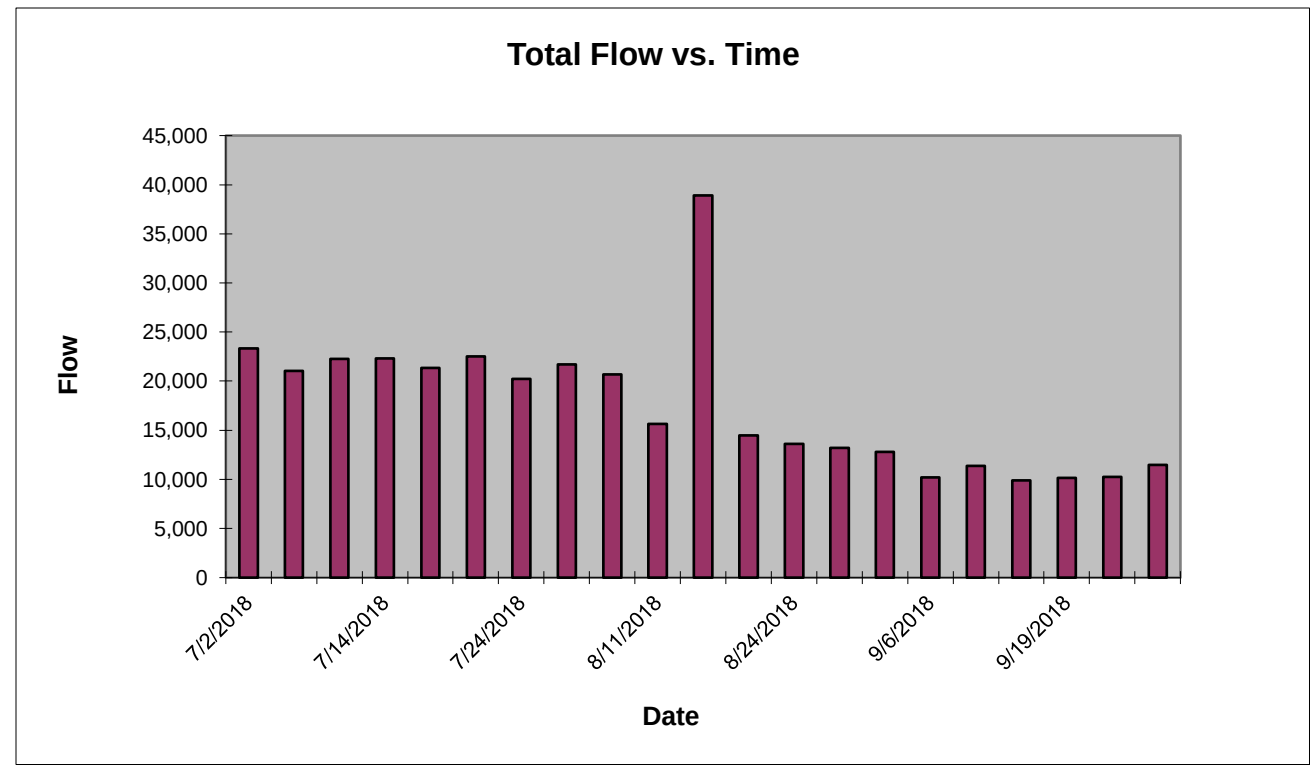
Notes:
flow meter calibrated and reset to zero on 01/03/18

ATTACHMENT 1

MONITORED FLOWS v. TIME
THIRD QUARTER 2018

Groundwater Pre-Treatment System (GWPTS)
Riverbend, LLC
Buffalo, New York

Date	Total Flow	Daily Avg
7/2/2018	6,186,825	23,319
7/6/2018	6,270,987	21,041
7/10/2018	6,359,983	22,249
7/14/2018	6,449,262	22,320
7/18/2018	6,534,570	21,327
7/22/2018	6,624,588	22,505
7/24/2018	6,665,022	20,217
7/27/2018	6,730,132	21,703
7/31/2018	6,812,941	20,702
8/11/2018	6,985,122	15,653
8/15/2018	7,140,809	38,922
8/21/2018	7,227,618	14,468
8/24/2018	7,268,447	13,610
8/28/2018	7,321,197	13,188
9/2/2018	7,385,297	12,820
9/6/2018	7,426,203	10,227
9/11/2018	7,483,099	11,379
9/14/2018	7,512,836	9,912
9/19/2018	7,563,470	10,127
9/25/2018	7,624,987	10,253
9/27/2018	7,647,974	11,494



Total Quarterly Flow: 1,601,062 gallons
Ave. Quarterly Flow: 17,333 gallons

JULY	
766,029	gallons/month
31	days
24,711	gallons/day
17	gallons/min

AUGUST	
508,256	gallons/month
31	days
16,395	gallons/day
11	gallons/min

SEPTEMBER	
326,777	gallons/month
30	days
10,893	gallons/day
8	gallons/min

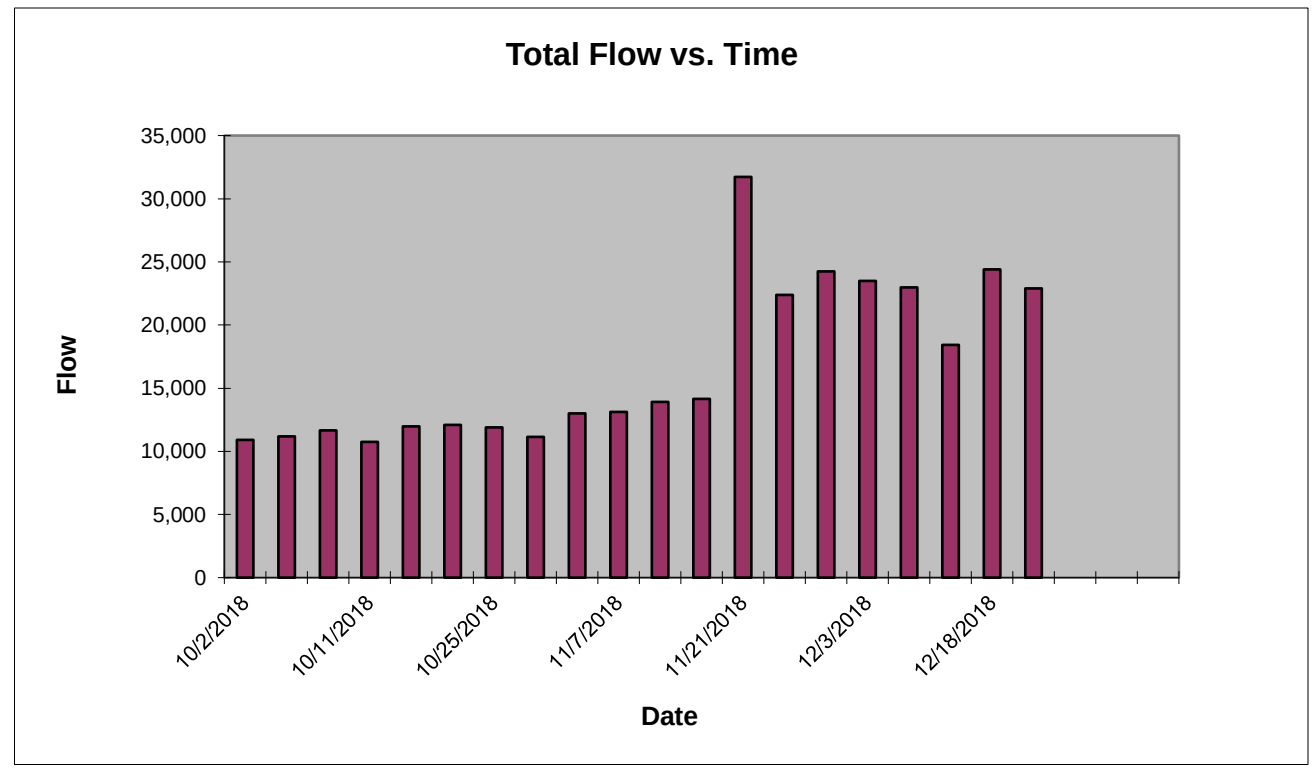
Notes:
flow meter calibrated and reset to zero on 01/03/18

ATTACHMENT 1

MONITORED FLOWS v. TIME
FOURTH QUARTER 2018

Groundwater Pre-Treatment System (GWPTS)
Riverbend, LLC
Buffalo, New York

Date	Total Flow	Daily Avg
10/2/2018	7,702,397	10,885
10/4/2018	7,724,745	11,174
10/9/2018	7,782,939	11,639
10/11/2018	7,804,430	10,746
10/17/2018	7,876,161	11,955
10/23/2018	7,948,661	12,083
10/25/2018	7,972,466	11,903
10/29/2018	8,017,028	11,141
11/2/2018	8,069,105	13,019
11/7/2018	8,134,756	13,130
11/12/2018	8,204,377	13,924
11/20/2018	8,317,633	14,157
11/21/2018	8,349,378	31,745
11/28/2018	8,506,146	22,395
11/30/2018	8,554,663	24,259
12/3/2018	8,625,161	23,499
12/7/2018	8,717,035	22,969
12/13/2018	8,827,626	18,432
12/18/2018	8,949,664	24,408
12/26/2018	9,132,768	22,888



Total Quarterly Flow:	1,484,794	gallons
Ave. Quarterly Flow:	16,158	gallons

OCTOBER	
369,054	gallons/month
31	days
11,905	gallons/day
8	gallons/min

NOVEMBER	
537,635	gallons/month
30	days
17,921	gallons/day
12	gallons/min

DECEMBER	
578,105	gallons/month
31	days
18,649	gallons/day
13	gallons/min

Notes:
flow meter calibrated and reset to zero on 01/03/18

ATTACHMENT 2

FIELD LOGS

Waste Water Treatment Plant - Riverbend

Maintenance Log

	Date	Flow Meter Reading	Lead Tank		Back Flush		Bag Filter Change		Bag Pressure (PSI)		Decant Oil Seperator	Tar in Drum (inches)	Instantaneous Flow	
			Tank 1	Tank 2	Tank 1	Tank 2	Tank 1	Tank 2	Before	After			Before	After
G *	1-3-18	10226872		✓	✓	✓	✓	✓	23.4	22.3	✓	1"	65.92	83.07
	1-5-18	51806		✓	✓	✓	✓	✓	22.4	22.1	✓	--	72.82	80.31
	1-9-18	1481693		✓	✓	✓	✓	✓	23.0	22.0	✓	--	72.45	82.54
•	1-11-18	202473		✓	✓	✓	✓	✓	25.9	21.6	✓	--	42.45	81.65
G	1-16-18	390675		✓	✓	✓	✓	✓	23.6	22.2	✓	3"	68.26	79.26
	1-17-18	430226		✓	✓	✓	✓	✓	23.0	22.4	✓	--	71.46	81.08
	1-23-18	666146		✓	✓	✓	✓	✓	23.3	22.4	✓	--	66.71	78.86
	1-24-18	701203		✓	✓	✓	✓	✓	23.1	22.5	✓	--	70.54	84.03
	1-30-18	938713		✓	✓	✓	✓	✓	22.3	22.2	✓	4.5"	71.72	78.91
	1-31-18	989680		✓	✓	✓	✓	✓	22.7	22.1	✓	--	73.73	77.46
	2-6-18	1205964		✓	✓	✓	✓	✓	23.3	22.2	✓	--	68.46	77.13
	2-8-18	1277635		✓	✓	✓	✓	✓	22.8	22.3	✓	--	69.89	77.27
	2-13-18	1460327		✓	✓	✓	✓	✓	23.4	22.5	✓	5.5"	63.89	76.84
G	2-15-18	1559049		✓	✓	✓	✓	✓	23.0	22.4	✓	--	70.14	73.95
	2-20-18	1734528		✓	✓	✓	✓	✓	23.2	22.4	✓	--	61.49	74.77
	2-22-18	1809954		✓	✓	✓	✓	✓	22.9	22.5	✓	--	68.61	75.82
G C	2-27-18	2001149	✓	✓	✓	✓	✓	✓	23.2	22.2	✓	6.5"	65.74	76.79
	3-1-18	2072230	✓		✓	✓	✓	✓	22.5	22.3	✓	--	67.37	77.96
	3-6-18	2272940	✓		✓	✓	✓	✓	22.1	21.9	✓	--	69.89	78.92
	3-8-18	2335866	✓		✓	✓	✓	✓	22.4	21.8	✓	--	68.72	78.03
	3-12-18	2476312	✓		✓	✓	✓	✓	23.0	22.0	✓	7"	66.39	79.12
• G	3-16-18	2627418	✓		✓	✓	✓	✓	23.6	21.8	✓	--	62.17	77.77
	3-21-18	2813673	✓		✓	✓	✓	✓	23.2	21.2	✓	--	62.14	78.63
	3-22-18	2895261	✓		✓	✓	✓	✓	22.2	21.4	✓	--	66.58	74.65
	3-27-18	3032560	✓		✓	✓	✓	✓	22.3	22.0	✓	7.5"	68.52	76.92
G	3-30-18	3150069	✓		✓	✓	✓	✓	23.1	21.6	✓	--	67.34	75.96
	4-2-18	3253255	✓		✓	✓	✓	✓	22.7	21.8	✓	--	70	82
	4-5-18	3362572	✓		✓	✓	✓	✓	22.2	21.7	✓	--	65	82
	4-11-18	3585619	✓		✓	✓	✓	✓	22.9	21.6	✓	8"	62	81
G	4-13-18	3617642	✓		✓	✓	✓	✓	23.0	21.7	✓	--	68	79
	4-17-18	3797492	✓		✓	✓	✓	✓	23.1	21.8	✓	--	64	80
•	4-19-18	3873519	✓		✓	✓	✓	✓	23.0	21.7	✓	--	69	77
	4-24-18	4060453	✓		✓	✓	✓	✓	22.7	21.6	✓	8.25"	70	78

* FLOW METER RE-CALIBRATED (ANNUAL) AND METER RE-SET TO 0. → ½" IS FIRST REMOVAL OF YEAR POST RE-SET

"G" - PUMPS GREASED - 1 XS A MONTH (2 PUMPS)

C - CARBON CHANGE OF TANK 2. & LEAD TANK CHANGED TO TANK 1

Waste Water Treatment Plant - Riverbend

Maintenance Log

	Date	Flow Meter Reading	Lead Tank		Back Flush		Bag Filter Change		Bag Pressure (PSI)		Decant Oil Seperator	Tar in Drum (inches)	Instantaneous Flow	
			Tank 1	Tank 2	Tank 1	Tank 2	Tank 1	Tank 2	Before	After			Before	After
	4-27-18	4181161	✓		✓	✓	✓	✓	22.1	21.6	✓	8.75"	69	78
	5-1-18	4313554	✓		✓	✓	✓	✓	22.3	21.7	✓	--	66	79
	5-3-18	4385690	✓		✓	✓	✓	✓	22.1	21.6	✓	--	68	80
	5-8-18	4566014	✓		✓	✓	✓	✓	23.3	21.5	✓	--	64	77
G	5-10-18	4634899	✓		✓	✓	✓	✓	22.0	21.4	✓	9"	69	77
	5-14-18	4777858	✓		✓	✓	✓	✓	22.5	21.4	✓	--	67	79
	5-17-18	4876025	✓		✓	✓	✓	✓	22.2	21.7	✓	--	67	77
	5-22-18	5049399	✓		✓	✓	✓	✓	22.5	21.8	✓	--	64	78
	5-24-18	5119934	✓		✓	✓	✓	✓	22.2	21.6	✓	9 1/4"	65	78
	5-30-18	5327231	✓		✓	✓	✓	✓	23.6	21.4	✓	--	58	77
	6-1-18	5395764	✓		✓	✓	✓	✓	22.4	21.5	✓	--	67	78
* G	6-4-18	5502524	✓		✓	✓	✓	✓	26.7	21.0	✓	--	47	79
	6-6-18	5572710	✓		✓	✓	✓	✓	22.3	21.3	✓	9 3/4"	69	77
	6-8-18	5642343		✓	✓	✓	✓	✓		20.7	✓	--		75
	6-11-18	5714682		✓	✓	✓	✓	✓	21.3	20.8	✓	--	74	84
	6-15-18	5804233		✓	✓	✓	✓	✓	21.9	20.7	✓	--	68	81
	6-18-18	5875194		✓	✓	✓	✓	✓	21.7	21.1	✓	9 3/4"	78	83
G	6-21-18	5943562		✓	✓	✓	✓	✓	21.5	20.8	✓	--	72	82
	6-26-18	6046912		✓	✓	✓	✓	✓	21.7	20.9	✓	--	71	83
	7-2-18	6186825		✓	✓	✓	✓	✓	22.8	21.0	✓	--	67	80
G	7-6-18	6270987		✓	✓	✓	✓	✓	22.1	20.8	✓	10"	73	86
	7-10-18	6359983		✓	✓	✓	✓	✓	22.3	21.0	✓	--	73	86
	7-14-18	6449262		✓	✓	✓	✓	✓	22.5	20.9	✓	--	72	85
	7-18-18	6534530		✓	✓	✓	✓	✓	21.9	20.8	✓	--	71	86
	7-22-18	6624588		✓	✓	✓	✓	✓	22.9	21.0	✓	10"	66	84
G	7-24-18	6665022		✓	✓	✓	✓	✓	21.8	21.1	✓	--	70	85
	7-27-18	6730132		✓	✓	✓	✓	✓	22.6	21.3	✓	--	67	87
	7-31-18	6812941		✓	✓	✓	✓	✓	22.4	21.4	✓	--	62	84
G	8-11-18	6985122		✓	✓	✓	✓	✓	23.0	20.9	✓	10.25	67	81
	8-15-18	7140809		✓	✓	✓	✓	✓	22.4	21.3	✓	--	72	86
	8-21-18	7277614		✓	✓	✓	✓	✓	22.3	21.1	✓	--	69	83
	8-24-18	7368447		✓	✓	✓	✓	✓	22.2	20.9	✓	--	75	87
	8-28-18	7321197		✓	✓	✓	✓	✓	22.4	21.0	✓	10.25	71	85

"G" → Pumps Greased

* 6/4 — System shut down on arrival - Effluent Tank Alarm @ High Level. - Backflushed cleaned pipes - working properly

Waste Water T. ment Plant - Riverbend

Maintenance Log

Date	Flow Meter Reading	Lead Tank		Back Flush		Bag Filter Change		Bag Pressure (PSI)		Decant Oil Seperator	Tar in Drum (inches)	Instantaneous Flow	
		Tank 1	Tank 2	Tank 1	Tank 2	Tank 1	Tank 2	Before	After			Before	After
9-2-18	7385297		✓	✓	✓	✓	✓	22.5	21.8	✓	~~10.75~~	71	81
9-6-18	7471203		✓	✓	✓	✓	✓	22.0	20.8	✓	-	73	85
"C" 9-11-18	7483049		✓	✓	✓	✓	✓	22.4	20.9	✓	-	70	84
9-14-18	7517836		✓	✓	✓	✓	✓	22.5	21.0	✓	-	69	83
9-19-18	7563470		✓	✓	✓	✓	✓	22.3	20.9	✓	9~~6~~.25	76	83
"B" 9-25-18	7624987		✓	✓	✓	✓	✓	22.6	21.0	✓	-	69	86
9-27-18	7647974		✓	✓	✓	✓	✓	22.4	20.8	✓	-	78	80
10-2-18	7702397		✓	✓	✓	✓	✓	22.0	20.9	✓	-	72	84
10-4-18	7724745		✓	✓	✓	✓	✓	22.3	21.3	✓	90.5	75	83
10-9-18	7782939		✓	✓	✓	✓	✓	21.9	20.8	✓	-	74	84
10-11-18	7804430		✓	✓	✓	✓	✓	21.8	21.2	✓	-	75	88
10-17-18	7876161		✓	✓	✓	✓	✓	22.8	21.4	✓	-	70	87
10-23-18	7945661		✓	✓	✓	✓	✓	22.5	21.0	✓	~~9~~.75	72	82
"G" 10-25-18	7972466		✓	✓	✓	✓	✓	22.2	21.2	✓	-	74	86
10-29-18	8017028		✓	✓	✓	✓	✓	22.9	21.4	✓	-	71	85
11-2-18	8069105		✓	✓	✓	✓	✓	22.7	21.2	✓	-	74	87
11-7-18	8134756		✓	✓	✓	✓	✓	22.6	21.0	✓	10"	73	84
11-13-18	8204377		✓	✓	✓	✓	✓	22.8	21.4	✓	-	70	86
11-20-18	8317633		✓	✓	✓	✓	✓	22.6	21.2	✓	-	76	85
11-21-18	8349378		✓	✓	✓	✓	✓	21.7	21.0	✓	-	76	86
11-28-18	8506146		✓	✓	✓	✓	✓	22.6	21.4	✓	10"	66	83
"G" 11-30-18	8554663		✓	✓	✓	✓	✓	22.5	21.1	✓	-	71	86
12-3-18	8625161		✓	✓	✓	✓	✓	22.4	20.9	✓	-	74	85
12-7-18	8717035		✓	✓	✓	✓	✓	22.6	21.0	✓	-	70	86
12-12-18			✓			✓	✓			✓	10.~~75~~		
"C" → 12-13-18	8827626	✓		✓	✓			22.7	21.3	✓	-		
12-18-18	8949664	✓		✓	✓	✓	✓	23.1	20.8	✓	-	67	90
12-21-18		✓		✓	✓	✓	✓	21.4	20.~~8~~3	✓	-	82	92
12-26-18	9132468	✓		✓	✓	✓	✓	22.9	2~~1~~0.7	✓	10.~~75~~6	65	90
1-2-19	9285781	✓		✓	✓	✓	✓	~~23~~.2	20.6	✓	-	~~69~~74	91
1-8-19	9425679	✓		✓	✓	✓	✓	22.1	20.2	✓	-	75	95
											-		

"G" - Greased Pump

* "C" - 12-13-18 - Carbon Change Tank 2. Switch to Tank 1 as lead.

** - 10/18 - Mike (LOB) takes yearly water samples

ATTACHMENT 3

GENERATED VOLUME OF TAR MATERIAL

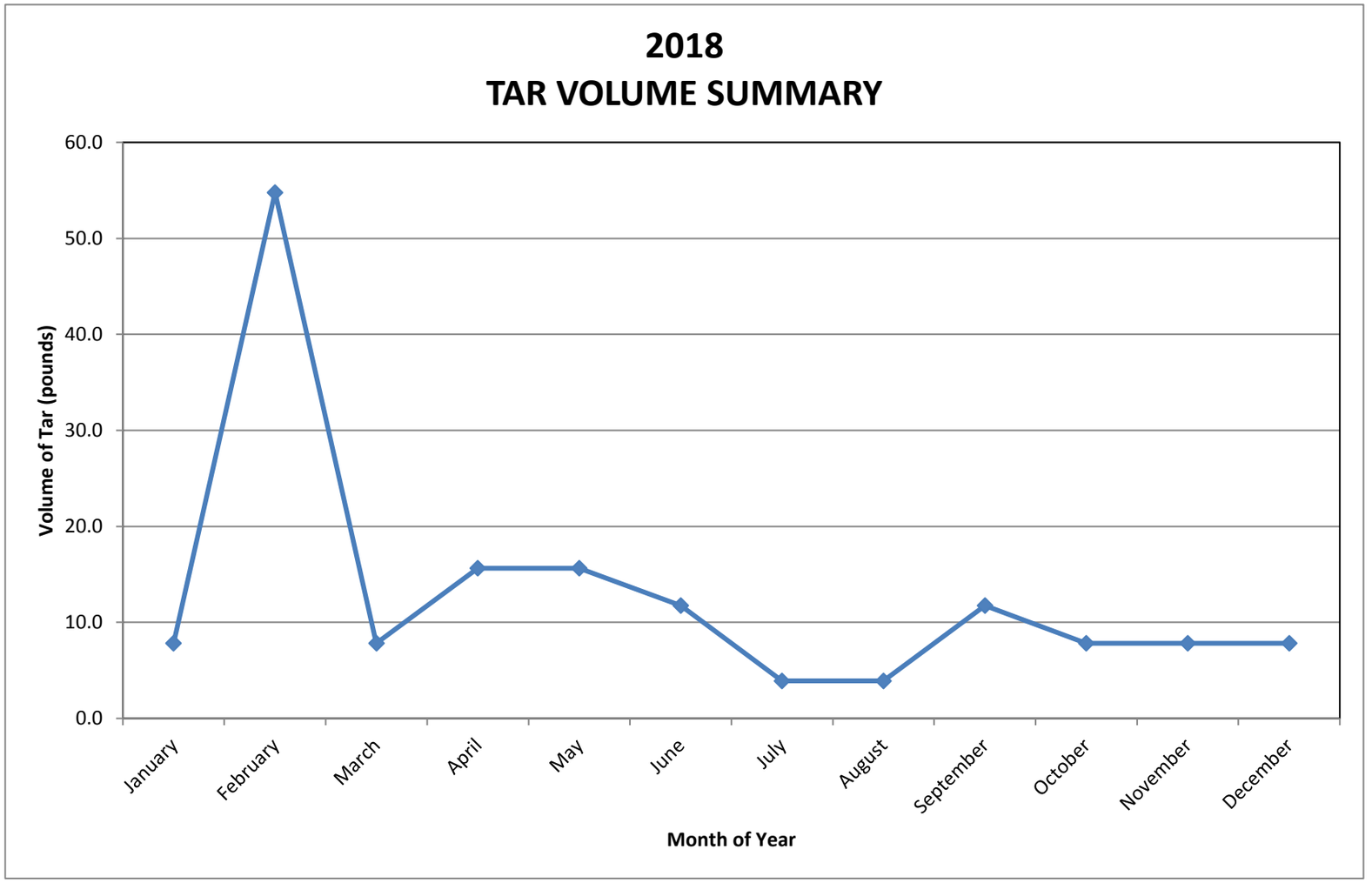
ATTACHMENT 3

GENERATED VOLUME OF TAR MATERIAL
2018

Groundwater Pre-Treatment System (GWPTS)
Riverbend, LLC
(Site No. V00619-9)
Buffalo, New York

Month	Volume of Tar (pounds)
January	7.8
February	54.8
March	7.8
April	15.7
May	15.7
June	11.7
July	3.9
August	3.9
September	11.7
October	7.8
November	7.8
December	7.8

Total:	156.5 pounds
Drums:	0.34
Min.	3.9 pounds
Max.	54.8 pounds
Ave.	13.0 pounds



ATTACHMENT 4

HAZARDOUS WASTE MANIFEST
(02/09/18)

US ecology

Receipt Waste Summary

DISPOSAL CONNECTIONS INC
6569 HEATHER DRIVE
LOCKPORT, NY 14094-1152

Invoice Date: 02/15/2018
Customer ID: 018081

Facility: EQ Detroit, Inc., 1923 Frederick, Detroit, MI 48211

Description	Qty.	Unit
K179198DET - K179198DET pump station cleaning residuals (wc-2)	5.00	DM55

Manifest 009805874FLE

Form Approved. OMB No. 2050-0039

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	NYR000148924	1	716-225-3314	009805874 FLE

GENERATOR

5. Generator's Name and Mailing Address
Fort Schuyler Management Corporation
257 Fuller Road
Albany NY 12203
Attn: Tom O'Brien

Generator's Site Address (if different than mailing address)
Riverbend Site
312 Abby Street
Buffalo NY 14220

Generator's Phone: 518 956-7098

U.S. EPA ID Number: NYD097644801

6. Transporter 1 Company Name
Tonawanda Tank Transport Service Inc.

U.S. EPA ID Number

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address
EQ Detroit, Inc.
1923 Frederick Street
Detroit MI 48211

U.S. EPA ID Number: MID980991566

Facility's Phone: 313 923-0080

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ NA3077, Hazardous Waste, Solid, n.o.s. (D007, D008, D018, D030), 9, PGIII	005	DM	01575	P	D007 D008 D018 D030 B
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1K179180ET, ERG#171 The weights in section 11 are estimated.

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Chester Hochreiter
Signature: Chester Hochreiter
Month 12 Day 4 Year 18

TRANSPORTER INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Gumersindo Barrera
Signature: Gumersindo Barrera
Month 12 Day 4 Year 18

Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
U.S. EPA ID Number

18b. Alternate Facility (or Generator)
Facility's Phone:
Month Day

18c. Signature of Alternate Facility (or Generator)

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H141 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Alvis McAthell
Signature
Month 12 Day 13

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIR

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

June 15, 2018

Mr. Michael Szilagyi
Buffalo Sewer Authority
Industrial Waste Section
90 West Ferry Street
Buffalo, NY 14213-1799

Re: RiverBend Site
Ground Water Pre-Treatment Discharge Monitoring Results
June 2018 Semi-Annual Compliance Monitoring Report
BPDES Permit No. 14-04-BU267

Dear Mr. Szilagyi:

On behalf of our client, Fort Schuyler Management Corporation, TurnKey Environmental Restoration, LLC has prepared this correspondence to present the first semi-annual 2018 discharge monitoring results for the groundwater pre-treatment system at the above-referenced facility. Discharge monitoring was performed from June 5-6, 2018.

SAMPLE COLLECTION

Samples were collected from the pretreated process effluent (Outfall 001) in general accordance with Buffalo Pollution Discharge Elimination System (BPDES) Permit No. 16-01-BU278 in laboratory-provided, pre-cleaned, and pre-preserved sample bottles (see Figure 1). Four grab samples for volatile organic compound (VOC) and semi-volatile organic compound (SVOC) analysis were containerized in individual sample bottles for laboratory composite preparation during sample extraction and USEPA Method 624 and Method 625 analysis, respectively. Composite samples were also collected for laboratory pH and total cyanide analysis. In accordance with the Permit, composite samples were prepared for all required parameters by combining grab samples collected at four equally spaced intervals over the 24-hour monitoring period. Field documentation is provided in Attachment 1.

ANALYTICAL RESULTS

The current period analytical results are provided in Attachment 2. Compounds detected above the laboratory reporting limit during the June 2018 event are summarized in Table 1 along with permitted BSA discharge limits. As indicated, all parameters are well within allowable limits.

FLOW MONITORING

Flow measurement data is presented in Table 1. Quarterly flow monitoring was based on the total flow recorded during the monitoring period divided by the number of days in that monitoring period. A copy of the annual flow meter calibration data is presented in Attachment 3. The next flow meter calibration is tentatively scheduled for January 2019.

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Please contact us if you have any questions.

Sincerely,
TurnKey Environmental Restoration, LLC

Brock Greene
Project Environmental Scientist

ec: Tom O'Brien (Fort Schuyler)
Paul Werthman (TurnKey)

File: 0322-018-501

TABLES

TABLE 1

2018 SEMI-ANNUAL GROUNDWATER PRETREATMENT SYSTEM DATA SUMMARY

BPDES Permit No. 16-01-BU278
Fort Schuyler RiverBend Site
312 Abby Street, Buffalo, NY

Parameter	June 16-17, 2016		Daily Discharge Limits [2]
	Concentration (units as indicated)	*Mass* [1] *(pounds)*	
Laboratory pH (S.U.)	7.20	na	5.0 - 12.0
Field pH (S.U.) [3]	6.90	na	5.0 - 12.0
Volatile Organic Compounds - Method 624 (mg/L)			
Acetone	3.4 J	na	Monitor
Bromomethane	3.7 J	na	Monitor
Total VOCs	7.1 J	na	Monitor
Semi-Volatile Organic Compounds - Method 625 (mg/L)			
Acenapthene	1.6 J	na	Monitor
Total SVOCs	1.6 J	na	Monitor
Inorganics (mg/L)			
Total Cyanide	2.08	0.631	4.3 lbs
Average Daily Flow (gallons per day) [4]	36,402		*see Note 5*

Notes:

1. The monitoring result is calculated based on the concentration of detected parameters and the average daily flow rate identified below.
2. Mass limits are based on the Average Daily Flow through the June event; actual limits may vary slightly based on actual discharge.
3. Field pH is an average of 4 grab samples collected over a 24-hour period.
4. Average daily flow based on net flow recorded between the Flow Calculation dates shown below for the June event.
5. Permitted maximum allowable daily flow is 110,000 gpd. An action level of 54,000 gpd is identified in the Permit. The BSA is to be notified if flow consistently exceeds this action level so that the permit can be modifed.
6. " ND " = Indicates compound was part of the analysis, but not detected at a concentration above the reporting limit.

Flow Calculations:

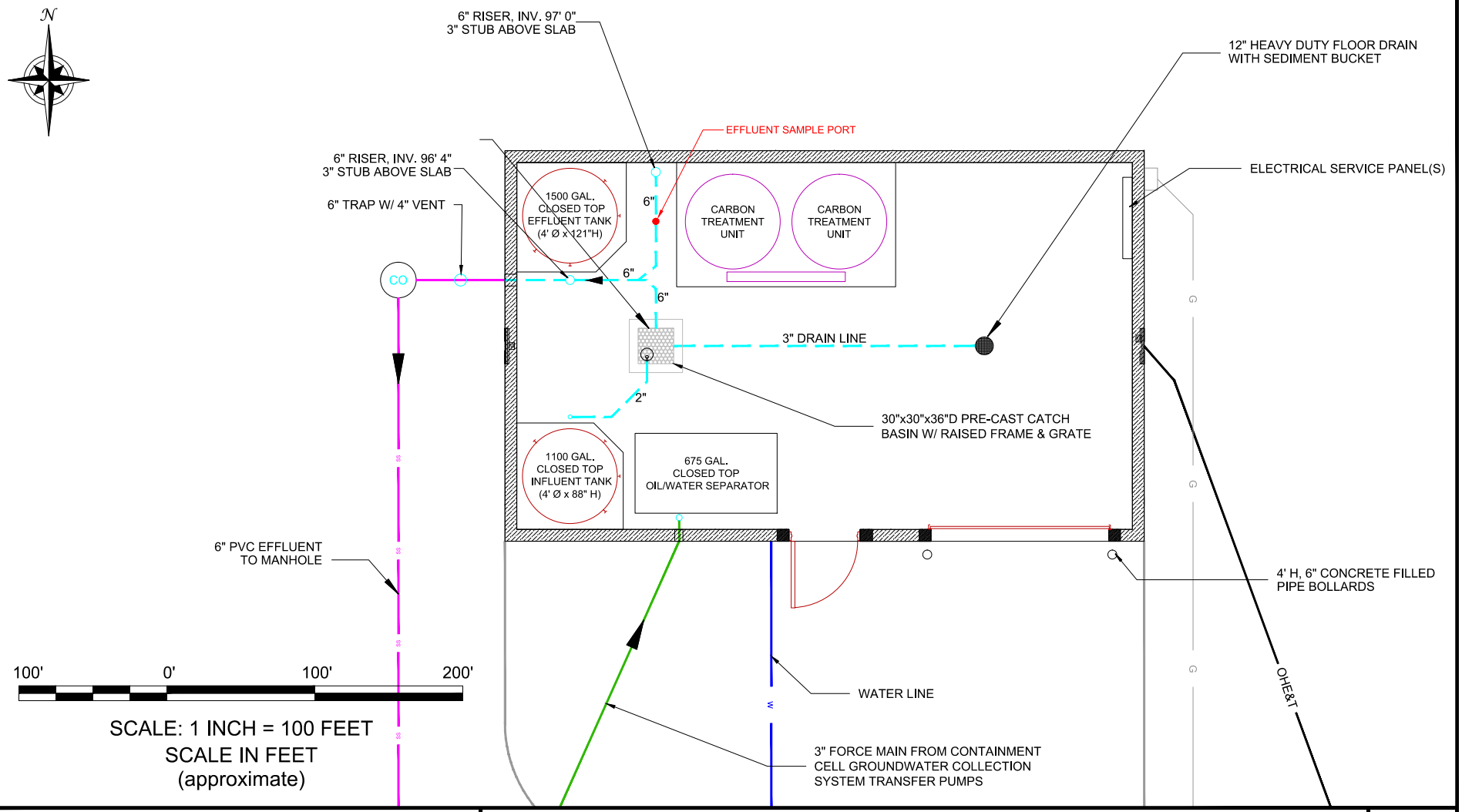
Event	Date	Flow Measurement * (gallons)	Average Daily Flow * (gallons per day)
June 2018	1/4/2018	0	36,402
	6/8/2018	5,642,343	

Notes:

* = flow meter calibrated and reset to zero on 01/04/17. Average daily flow presented above accounts for the recalibration and zeroing.

FIGURES

F:\CAD\TurnKey\Riverbend (formerly Steelfields)\BSA Effluent Monitoring\2014 - First Semi-Annual Event (June)\Figure 1; GWPTS Building Detail.DWG



TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

PROJECT NO.: 0171-013-500

DATE: AUGUST 2014

DRAFTED BY: BCH

GWPTS BUILDING LAYOUT

BSA PERMIT NO. 14-04-BU267

RIVERBEND SITE
BUFFALO, NEW YORK

PREPARED FOR
RIVERBEND, LLC

FIGURE 1

ATTACHMENT 1

FIELD DOCUMENTATION

WATER SAMPLE COLLECTION LOG

PROJECT INFORMATION

Project Name: RiverBend Site
Project No.: 0322-018-501
Client: FSMC
Location: 312 Abby Street, Buffalo, NY

SAMPLE DESCRIPTION

I.D.: **Process Effluent**

Matrix: ☐ SURFACE WATER ☐ STORM ☐ SEEP ☐ OTHER ☐ INFLUENT ☑ EFFLUENT

SAMPLE INFORMATION

Date Collected: 6-5-18 and 6-6-18
Time Collected:
Date Shipped to Lab: 6-8-2018
Collected By: Chester Hochreiter
Sample Type: ☐ POINT ☐ GRAB ☑ COMPOSITE
Sample Collection Method: ☐ DIRECT DIP ☐ SS / POLY. DIPPER ☐ PERISTALTIC PUMP ☐ POLY. DISP. BAILER ☐ ISCO SAMPLER ☑ OTHER - sample port grab

SAMPLING INFORMATION

Weather:
Air Temperature:

Parameter	Units	Grab #1	Grab #2	Grab #3	Grab #4
pH	units	6.92	6.94	6.85	6.87
Temp.	°C	11.2	11.3	11.3	11.2
Cond.	mS	1267	1268	1311	1284
Turbidity	NTU	8.00	9.00	5.00	8.00
Eh / ORP	mV	108	115	84	85
D.O.	ppm	3.71	4.44	4.58	4.71
Odor	olfactory	no odor	No odor	no odor	No odor
Appearance	visual	clear	clear	clear	clear
Sample Date		6-5-18	6-5-18	6-5-18	6-6-18
Sample Time		0815	1205	1710	0845

EXACT LOCATION (if applicable)

Northing (ft)	Easting (ft)	Elevation (fmsl)

SAMPLE DESCRIPTION (appearance, olfactory):

SAMPLE ANALYSIS (depth, laboratory analysis required):

* Collect four individual grab samples for method 624 (VOCs) and 625 (SVOCs) analysis, these samples will be composited at the lab.
* Collect composite samples for cyanide and laboratory pH by filling equal aliquots of sample to fill sample containers

ADDITIONAL REMARKS:

PREPARED BY: Chester Hochreiter **DATE:** 6/6/2018

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

EQUIPMENT CALIBRATION LOG

PROJECT INFORMATION:

Project Name: River Bend Site

Project No.: T0322-018-501

Client:

Date: 6-5-2018

Instrument Source: [X] BM [ ] Rental

METER TYPE	UNITS	TIME	MAKE/MODEL	SERIAL NUMBER	CAL. BY	STANDARD	POST CAL. READING	SETTINGS
[X] pH meter	units	800	Myron L Company Ultra Meter 6P	6213516 [ ] 6243084 [ ] 6212375 [ ] 6243003 [X] 6223973 [ ]	CEH	4.00 7.00 10.01	4.01 6.99 10.01	
[X] Turbidity meter	NTU	805	Hach 2100P or 2100Q Turbidimeter	06120C020523 (P) [X] 13120C030432 (Q) [ ]	CEH	< 0.4 or 10 for 2100 Q 20 100 800	0.00 20 97 783	
[ ] Turbidity meter	NTU		LaMotte 2020	6523-1816 (La) [ ]		0.0 NTU 1.0 NTU 10.0 NTU		
[X] Sp. Cond. meter	uS mS	800	Myron L Company Ultra Meter 6P	6213516 [ ] 6243084 [ ] 6212375 [ ] 6243003 [X] 6223973 [ ]	CEH	1413 mS @ 25 °C	1413	
[ ] PID	ppm		MinRAE 2000			open air zero ____ ppm Iso. Gas		MIBK response factor = 1.0
[X] Dissolved Oxygen	ppm	810	HACH Model HQ30d	080700023281 [ ] 100500041867 [X] 1402000100319 [ ]	CEH	100% Satuartion	100%	
[ ] Particulate meter	mg/m^3					zero air		
[ ] Oxygen	%					open air		
[ ] Hydrogen sulfide	ppm					open air		
[ ] Carbon monoxide	ppm					open air		
[ ] LEL	%					open air		
[ ] Radiation Meter	uR/H					background area		

ADDITIONAL REMARKS:

PREPARED BY: **DATE:**

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

EQUIPMENT CALIBRATION LOG

PROJECT INFORMATION:

Project Name: River bend Site

Project No.: T0322-018-501

Client:

Date: 6-6-2018

Instrument Source: ☐ BM ☐ Rental

METER TYPE	UNITS	TIME	MAKE/MODEL	SERIAL NUMBER	CAL. BY	STANDARD	POST CAL. READING	SETTINGS
☒ pH meter	units	830	Myron L Company Ultra Meter 6P	6213516 ☐ 6243084 ☐ 6212375 ☐ 6243003 ☒ 6223973 ☐	CEH	4.00 7.00 10.01	3.97 7.01 10.02	
☒ Turbidity meter	NTU	835	Hach 2100P or 2100Q Turbidimeter	06120C020523 (P) ☒ 13120C030432 (Q) ☐	CEH	< 0.4 or 10 for 2100 Q 20 100 800	0.00 20 96 783	
☐ Turbidity meter	NTU		LaMotte 2020	6523-1816 (La) ☐		0.0 NTU 1.0 NTU 10.0 NTU		
☒ Sp. Cond. meter	uS mS	830	Myron L Company Ultra Meter 6P	6213516 ☐ 6243084 ☐ 6212375 ☐ 6243003 ☒ 6223973 ☐	CEH	1413 mS @ 25 °C	1408	
☐ PID	ppm		MinRAE 2000			open air zero ____ ppm Iso. Gas		MIBK response factor = 1.0
☒ Dissolved Oxygen	ppm	840	HACH Model HQ30d	080700023281 ☐ 100500041867 ☒ 1402000100319 ☐	CEH	100% Satuartion	100%	
☐ Particulate meter	mg/m^3					zero air		
☐ Oxygen	%					open air		
☐ Hydrogen sulfide	ppm					open air		
☐ Carbon monoxide	ppm					open air		
☐ LEL	%					open air		
☐ Radiation Meter	uR/H					background area		

ADDITIONAL REMARKS:

PREPARED BY: CEH **DATE:** 6-6-2018

ATTACHMENT 2

ANALYTICAL DATA

ANALYTICAL REPORT

Lab Number:	L1821602
Client:	Benchmark & Turnkey Companies 2558 Hamburg Turnpike Suite 300 Buffalo, NY 14218
ATTN:	Brock Greene
Phone:	(716) 856-0599
Project Name:	RIVERBEND S/A BSA
Project Number:	T0322-018-501
Report Date:	06/14/18

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501

Lab Number: L1821602
Report Date: 06/14/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1821602-01	PROCESS EFFLUENT-GRAB 1,2,3,4	WATER	BUFFALO, NY	06/06/18 08:45	06/08/18
L1821602-02	COMPOSITE PROCESS EFFLUENT-GRAB 1, 2, 3, 4	WATER	BUFFALO, NY	06/06/18 08:45	06/08/18
L1821602-03	PROCESS EFFLUENT	WATER	BUFFALO, NY	06/06/18 08:45	06/08/18
L1821602-04	TRIP BLANK	WATER	BUFFALO, NY	06/05/18 00:00	06/08/18

Project Name:	RIVERBEND S/A BSA	**Lab Number:**	L1821602
Project Number:	T0322-018-501	**Report Date:**	06/14/18

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name:	RIVERBEND S/A BSA	**Lab Number:**	L1821602
Project Number:	T0322-018-501	**Report Date:**	06/14/18

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L1821602-04: A sample identified as "TRIP BLANK" was received but not listed on the Chain of Custody. This sample was not analyzed.

Cyanide, Total

The WG1125245-3 Laboratory Duplicate RPD (48%), performed on L1821602-03, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Michelle M. Morris

Title: Technical Director/Representative Date: 06/14/18

ORGANICS

VOLATILES

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501
Lab Number: L1821602
Report Date: 06/14/18

SAMPLE RESULTS

Lab ID: L1821602-01
Client ID: PROCESS EFFLUENT-GRAB 1,2,3,4
Sample Location: BUFFALO, NY

Date Collected: 06/06/18 08:45
Date Received: 06/08/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 06/09/18 13:44
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	5.0	0.56	1
1,1-Dichloroethane	ND		ug/l	1.5	0.40	1
Chloroform	ND		ug/l	1.0	0.38	1
Carbon tetrachloride	ND		ug/l	1.0	0.24	1
1,2-Dichloropropane	ND		ug/l	3.5	0.46	1
Dibromochloromethane	ND		ug/l	1.0	0.27	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.34	1
2-Chloroethylvinyl ether	ND		ug/l	10	0.35	1
Tetrachloroethene	ND		ug/l	1.5	0.26	1
Chlorobenzene	ND		ug/l	3.5	0.30	1
Trichlorofluoromethane	ND		ug/l	5.0	0.28	1
1,2-Dichloroethane	ND		ug/l	1.5	0.47	1
1,1,1-Trichloroethane	ND		ug/l	2.0	0.29	1
Bromodichloromethane	ND		ug/l	1.0	0.28	1
trans-1,3-Dichloropropene	ND		ug/l	1.5	0.31	1
cis-1,3-Dichloropropene	ND		ug/l	1.5	0.34	1
Bromoform	ND		ug/l	1.0	0.22	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.20	1
Benzene	ND		ug/l	1.0	0.38	1
Toluene	ND		ug/l	1.0	0.31	1
Ethylbenzene	ND		ug/l	1.0	0.28	1
Chloromethane	ND		ug/l	5.0	1.0	1
Bromomethane	3.7	J	ug/l	5.0	1.2	1
Vinyl chloride	ND		ug/l	1.0	0.38	1
Chloroethane	ND		ug/l	2.0	0.37	1
1,1-Dichloroethene	ND		ug/l	1.0	0.31	1
trans-1,2-Dichloroethene	ND		ug/l	1.5	0.33	1
cis-1,2-Dichloroethene[1]	ND		ug/l	1.0	0.17	1

Project Name: RIVERBEND S/A BSA **Lab Number:** L1821602

Project Number: T0322-018-501 **Report Date:** 06/14/18

SAMPLE RESULTS

Lab ID: L1821602-01 Date Collected: 06/06/18 08:45

Client ID: PROCESS EFFLUENT-GRAB 1,2,3,4 Date Received: 06/08/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	0.33	1
1,2-Dichlorobenzene	ND		ug/l	5.0	0.28	1
1,3-Dichlorobenzene	ND		ug/l	5.0	0.27	1
1,4-Dichlorobenzene	ND		ug/l	5.0	0.29	1
p/m-Xylene[1]	ND		ug/l	2.0	0.30	1
o-xylene[1]	ND		ug/l	1.0	0.34	1
Xylenes, Total[1]	ND		ug/l	1.0	0.30	1
Styrene[1]	ND		ug/l	1.0	0.37	1
Acetone[1]	3.4	J	ug/l	10	2.4	1
Carbon disulfide[1]	ND		ug/l	5.0	0.28	1
2-Butanone[1]	ND		ug/l	10	1.0	1
Vinyl acetate[1]	ND		ug/l	10	0.41	1
4-Methyl-2-pentanone[1]	ND		ug/l	10	0.19	1
2-Hexanone[1]	ND		ug/l	10	0.55	1
Acrolein[1]	ND		ug/l	8.0	1.8	1
Acrylonitrile[1]	ND		ug/l	10	0.33	1
Dibromomethane[1]	ND		ug/l	1.0	0.23	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	100		60-140
Fluorobenzene	108		60-140
4-Bromofluorobenzene	95		60-140

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501
Lab Number: L1821602
Report Date: 06/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 06/09/18 11:16
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1124695-4					
Methylene chloride	ND		ug/l	5.0	0.56
1,1-Dichloroethane	ND		ug/l	1.5	0.40
Chloroform	ND		ug/l	1.0	0.38
Carbon tetrachloride	ND		ug/l	1.0	0.24
1,2-Dichloropropane	ND		ug/l	3.5	0.46
Dibromochloromethane	ND		ug/l	1.0	0.27
1,1,2-Trichloroethane	ND		ug/l	1.5	0.34
2-Chloroethylvinyl ether	ND		ug/l	10	0.35
Tetrachloroethene	ND		ug/l	1.5	0.26
Chlorobenzene	ND		ug/l	3.5	0.30
Trichlorofluoromethane	ND		ug/l	5.0	0.28
1,2-Dichloroethane	ND		ug/l	1.5	0.47
1,1,1-Trichloroethane	ND		ug/l	2.0	0.29
Bromodichloromethane	ND		ug/l	1.0	0.28
trans-1,3-Dichloropropene	ND		ug/l	1.5	0.31
cis-1,3-Dichloropropene	ND		ug/l	1.5	0.34
Bromoform	ND		ug/l	1.0	0.22
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.20
Benzene	ND		ug/l	1.0	0.38
Toluene	ND		ug/l	1.0	0.31
Ethylbenzene	ND		ug/l	1.0	0.28
Chloromethane	ND		ug/l	5.0	1.0
Bromomethane	ND		ug/l	5.0	1.2
Vinyl chloride	ND		ug/l	1.0	0.38
Chloroethane	ND		ug/l	2.0	0.37
1,1-Dichloroethene	ND		ug/l	1.0	0.31
trans-1,2-Dichloroethene	ND		ug/l	1.5	0.33
cis-1,2-Dichloroethene[1]	ND		ug/l	1.0	0.17
Trichloroethene	ND		ug/l	1.0	0.33

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501
Lab Number: L1821602
Report Date: 06/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 06/09/18 11:16
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1124695-4					
1,2-Dichlorobenzene	ND		ug/l	5.0	0.28
1,3-Dichlorobenzene	ND		ug/l	5.0	0.27
1,4-Dichlorobenzene	ND		ug/l	5.0	0.29
p/m-Xylene[1]	ND		ug/l	2.0	0.30
o-xylene[1]	ND		ug/l	1.0	0.34
Xylenes, Total[1]	ND		ug/l	1.0	0.30
Styrene[1]	ND		ug/l	1.0	0.37
Acetone[1]	ND		ug/l	10	2.4
Carbon disulfide[1]	ND		ug/l	5.0	0.28
2-Butanone[1]	ND		ug/l	10	1.0
Vinyl acetate[1]	ND		ug/l	10	0.41
4-Methyl-2-pentanone[1]	ND		ug/l	10	0.19
2-Hexanone[1]	ND		ug/l	10	0.55
Acrolein[1]	ND		ug/l	8.0	1.8
Acrylonitrile[1]	ND		ug/l	10	0.33
Methyl tert butyl ether[1]	ND		ug/l	10	0.19
Dibromomethane[1]	ND		ug/l	1.0	0.23

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	102		60-140
Fluorobenzene	109		60-140
4-Bromofluorobenzene	96		60-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: RIVERBEND S/A BSA

Project Number: T0322-018-501

Lab Number: L1821602

Report Date: 06/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1124695-3								
Methylene chloride	80		-		60-140	-		28
1,1-Dichloroethane	75		-		50-150	-		49
Chloroform	110		-		70-135	-		54
Carbon tetrachloride	110		-		70-130	-		41
1,2-Dichloropropane	110		-		35-165	-		55
Dibromochloromethane	95		-		70-135	-		50
1,1,2-Trichloroethane	90		-		70-130	-		45
2-Chloroethylvinyl ether	95		-		1-225	-		71
Tetrachloroethene	90		-		70-130	-		39
Chlorobenzene	80		-		65-135	-		53
Trichlorofluoromethane	95		-		50-150	-		84
1,2-Dichloroethane	110		-		70-130	-		49
1,1,1-Trichloroethane	110		-		70-130	-		36
Bromodichloromethane	105		-		65-135	-		56
trans-1,3-Dichloropropene	90		-		50-150	-		86
cis-1,3-Dichloropropene	100		-		25-175	-		58
Bromoform	80		-		70-130	-		42
1,1,2,2-Tetrachloroethane	85		-		60-140	-		61
Benzene	110		-		65-135	-		61
Toluene	100		-		70-130	-		41
Ethylbenzene	90		-		60-140	-		63
Chloromethane	105		-		1-205	-		60
Bromomethane	70		-		15-185	-		61

Lab Control Sample Analysis
Batch Quality Control

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501

Lab Number: L1821602
Report Date: 06/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1124695-3								
Vinyl chloride	90		-		5-195	-		66
Chloroethane	85		-		40-160	-		78
1,1-Dichloroethene	80		-		50-150	-		32
trans-1,2-Dichloroethene	80		-		70-130	-		45
cis-1,2-Dichloroethene[1]	100		-		60-140	-		30
Trichloroethene	100		-		65-135	-		48
1,2-Dichlorobenzene	85		-		65-135	-		57
1,3-Dichlorobenzene	80		-		70-130	-		43
1,4-Dichlorobenzene	85		-		65-135	-		57
p/m-Xylene[1]	82		-		60-140	-		30
o-xylene[1]	80		-		60-140	-		30
Styrene[1]	75		-		60-140	-		30
Acetone[1]	94		-		40-160	-		30
Carbon disulfide[1]	80		-		60-140	-		30
2-Butanone[1]	130		-		60-140	-		30
Vinyl acetate[1]	75		-		60-140	-		30
4-Methyl-2-pentanone[1]	100		-		60-140	-		30
2-Hexanone[1]	110		-		60-140	-		30
Acrolein[1]	85		-		60-140	-		30
Acrylonitrile[1]	90		-		60-140	-		60
Methyl tert butyl ether[1]	80		-		60-140	-		30
Dibromomethane[1]	95		-		70-130	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: RIVERBEND S/A BSA

Project Number: T0322-018-501

Lab Number: L1821602

Report Date: 06/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1124695-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	103				60-140
Fluorobenzene	106				60-140
4-Bromofluorobenzene	97				60-140

SEMIVOLATILES

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501
Lab Number: L1821602
Report Date: 06/14/18

SAMPLE RESULTS

Lab ID: L1821602-01
Client ID: PROCESS EFFLUENT-GRAB 1,2,3,4
Sample Location: BUFFALO, NY

Date Collected: 06/06/18 08:45
Date Received: 06/08/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 06/14/18 04:09
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 06/13/18 00:01

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	1.6	J	ug/l	2.0	0.41	1
Benzidine[1]	ND		ug/l	20	12.	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	1.5	1
Hexachlorobenzene	ND		ug/l	2.0	0.95	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.60	1
2-Chloronaphthalene	ND		ug/l	2.0	0.32	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	0.46	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.64	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.63	1
Azobenzene[1]	ND		ug/l	2.0	0.89	1
Fluoranthene	ND		ug/l	2.0	0.74	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.37	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.45	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.82	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.58	1
Hexachlorobutadiene	ND		ug/l	2.0	0.92	1
Hexachlorocyclopentadiene[1]	ND		ug/l	10	1.4	1
Hexachloroethane	ND		ug/l	2.0	0.97	1
Isophorone	ND		ug/l	5.0	0.55	1
Naphthalene	ND		ug/l	2.0	0.90	1
Nitrobenzene	ND		ug/l	2.0	0.79	1
NDPA/DPA[1]	ND		ug/l	2.0	0.78	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.63	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.7	1
Butyl benzyl phthalate	ND		ug/l	5.0	0.67	1
Di-n-butylphthalate	ND		ug/l	5.0	0.63	1
Di-n-octylphthalate	ND		ug/l	5.0	0.63	1
Diethyl phthalate	ND		ug/l	5.0	0.72	1

Project Name: RIVERBEND S/A BSA **Lab Number:** L1821602

Project Number: T0322-018-501 **Report Date:** 06/14/18

SAMPLE RESULTS

Lab ID: L1821602-01 Date Collected: 06/06/18 08:45

Client ID: PROCESS EFFLUENT-GRAB 1,2,3,4 Date Received: 06/08/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Dimethyl phthalate	ND		ug/l	5.0	1.4	1
Benzo(a)anthracene	ND		ug/l	2.0	0.66	1
Benzo(a)pyrene	ND		ug/l	2.0	0.61	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.74	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.74	1
Chrysene	ND		ug/l	2.0	0.67	1
Acenaphthylene	ND		ug/l	2.0	0.93	1
Anthracene	ND		ug/l	2.0	0.79	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.67	1
Fluorene	ND		ug/l	2.0	0.93	1
Phenanthrene	ND		ug/l	2.0	0.82	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.69	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.63	1
Pyrene	ND		ug/l	2.0	0.73	1
4-Chloroaniline[1]	ND		ug/l	5.0	0.79	1
Dibenzofuran[1]	ND		ug/l	2.0	0.37	1
2-Methylnaphthalene[1]	ND		ug/l	2.0	0.35	1
n-Nitrosodimethylamine[1]	ND		ug/l	2.0	0.41	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1
p-Chloro-m-cresol[1]	ND		ug/l	2.0	0.53	1
2-Chlorophenol	ND		ug/l	2.0	0.51	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.55	1
2,4-Dimethylphenol	ND		ug/l	5.0	0.85	1
2-Nitrophenol	ND		ug/l	5.0	0.60	1
4-Nitrophenol	ND		ug/l	10	0.83	1
2,4-Dinitrophenol	ND		ug/l	20	1.2	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.2	1
Pentachlorophenol	ND		ug/l	5.0	0.62	1
Phenol	ND		ug/l	5.0	0.26	1
2-Methylphenol[1]	ND		ug/l	5.0	0.77	1
3-Methylphenol/4-Methylphenol[1]	ND		ug/l	5.0	0.51	1
2,4,5-Trichlorophenol[1]	ND		ug/l	5.0	0.64	1
Benzoic Acid[1]	ND		ug/l	50	1.2	1
Benzyl Alcohol[1]	ND		ug/l	2.0	0.49	1

Project Name: RIVERBEND S/A BSA
Lab Number: L1821602
Project Number: T0322-018-501
Report Date: 06/14/18

SAMPLE RESULTS

Lab ID: L1821602-01
Client ID: PROCESS EFFLUENT-GRAB 1,2,3,4
Sample Location: BUFFALO, NY

Date Collected: 06/06/18 08:45
Date Received: 06/08/18
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	53		35-77
Phenol-d6	40		24-61
Nitrobenzene-d5	75		15-314
2-Fluorobiphenyl	76		55-108
2,4,6-Tribromophenol	84		52-123
4-Terphenyl-d14	82		52-109

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501

Lab Number: L1821602
Report Date: 06/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 06/13/18 21:12
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 06/12/18 22:07

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1125256-1					
Acenaphthene	ND		ug/l	2.0	0.41
Benzidine[1]	ND		ug/l	20	12.
1,2,4-Trichlorobenzene	ND		ug/l	5.0	1.5
Hexachlorobenzene	ND		ug/l	2.0	0.95
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.60
2-Chloronaphthalene	ND		ug/l	2.0	0.32
3,3'-Dichlorobenzidine	ND		ug/l	5.0	0.46
2,4-Dinitrotoluene	ND		ug/l	5.0	0.64
2,6-Dinitrotoluene	ND		ug/l	5.0	0.63
Azobenzene[1]	ND		ug/l	2.0	0.89
Fluoranthene	ND		ug/l	2.0	0.74
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.37
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.45
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.82
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.58
Hexachlorobutadiene	ND		ug/l	2.0	0.92
Hexachlorocyclopentadiene[1]	ND		ug/l	10	1.4
Hexachloroethane	ND		ug/l	2.0	0.97
Isophorone	ND		ug/l	5.0	0.55
Naphthalene	ND		ug/l	2.0	0.90
Nitrobenzene	ND		ug/l	2.0	0.79
NDPA/DPA[1]	ND		ug/l	2.0	0.78
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.63
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.7
Butyl benzyl phthalate	ND		ug/l	5.0	0.67
Di-n-butylphthalate	ND		ug/l	5.0	0.63
Di-n-octylphthalate	ND		ug/l	5.0	0.63
Diethyl phthalate	ND		ug/l	5.0	0.72
Dimethyl phthalate	ND		ug/l	5.0	1.4

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501

Lab Number: L1821602
Report Date: 06/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 06/13/18 21:12
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 06/12/18 22:07

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1125256-1					
Benzo(a)anthracene	ND		ug/l	2.0	0.66
Benzo(a)pyrene	ND		ug/l	2.0	0.61
Benzo(b)fluoranthene	ND		ug/l	2.0	0.74
Benzo(k)fluoranthene	ND		ug/l	2.0	0.74
Chrysene	ND		ug/l	2.0	0.67
Acenaphthylene	ND		ug/l	2.0	0.93
Anthracene	ND		ug/l	2.0	0.79
Benzo(ghi)perylene	ND		ug/l	2.0	0.67
Fluorene	ND		ug/l	2.0	0.93
Phenanthrene	ND		ug/l	2.0	0.82
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.69
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.63
Pyrene	ND		ug/l	2.0	0.73
4-Chloroaniline[1]	ND		ug/l	5.0	0.79
Dibenzofuran[1]	ND		ug/l	2.0	0.37
2-Methylnaphthalene[1]	ND		ug/l	2.0	0.35
n-Nitrosodimethylamine[1]	ND		ug/l	2.0	0.41
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61
p-Chloro-m-cresol[1]	ND		ug/l	2.0	0.53
2-Chlorophenol	ND		ug/l	2.0	0.51
2,4-Dichlorophenol	ND		ug/l	5.0	0.55
2,4-Dimethylphenol	ND		ug/l	5.0	0.85
2-Nitrophenol	ND		ug/l	5.0	0.60
4-Nitrophenol	ND		ug/l	10	0.83
2,4-Dinitrophenol	ND		ug/l	20	1.2
4,6-Dinitro-o-cresol	ND		ug/l	10	1.2
Pentachlorophenol	ND		ug/l	5.0	0.62
Phenol	ND		ug/l	5.0	0.26
2-Methylphenol[1]	ND		ug/l	5.0	0.77

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501

Lab Number: L1821602
Report Date: 06/14/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 06/13/18 21:12
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 06/12/18 22:07

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1125256-1					
3-Methylphenol/4-Methylphenol[1]	ND		ug/l	5.0	0.51
2,4,5-Trichlorophenol[1]	ND		ug/l	5.0	0.64
Benzoic Acid[1]	ND		ug/l	50	1.2
Benzyl Alcohol[1]	ND		ug/l	2.0	0.49

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	61		35-77
Phenol-d6	48		24-61
Nitrobenzene-d5	83		15-314
2-Fluorobiphenyl	95		55-108
2,4,6-Tribromophenol	75		52-123
4-Terphenyl-d14	83		52-109

Lab Control Sample Analysis
Batch Quality Control

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501

Lab Number: L1821602
Report Date: 06/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1125256-2								
Acenaphthene	83		-		60-132	-		30
Benzidine[1]	34		-		0-70	-		30
1,2,4-Trichlorobenzene	75		-		57-130	-		30
Hexachlorobenzene	82		-		8-142	-		30
Bis(2-chloroethyl)ether	79		-		43-126	-		30
2-Chloronaphthalene	80		-		65-120	-		30
3,3'-Dichlorobenzidine	35		-		8-213	-		30
2,4-Dinitrotoluene	87		-		48-127	-		30
2,6-Dinitrotoluene	87		-		68-137	-		30
Azobenzene[1]	88		-		44-115	-		30
Fluoranthene	83		-		43-121	-		30
4-Chlorophenyl phenyl ether	82		-		38-145	-		30
4-Bromophenyl phenyl ether	86		-		65-120	-		30
Bis(2-chloroisopropyl)ether	79		-		63-139	-		30
Bis(2-chloroethoxy)methane	84		-		49-165	-		30
Hexachlorobutadiene	71		-		38-120	-		30
Hexachlorocyclopentadiene[1]	52		-		7-118	-		30
Hexachloroethane	68		-		55-120	-		30
Isophorone	87		-		47-180	-		30
Naphthalene	80		-		36-120	-		30
Nitrobenzene	84		-		54-158	-		30
NDPA/DPA[1]	90		-		45-112	-		30
n-Nitrosodi-n-propylamine	86		-		14-198	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501

Lab Number: L1821602
Report Date: 06/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1125256-2								
Bis(2-ethylhexyl)phthalate	91		-		29-137	-		30
Butyl benzyl phthalate	88		-		1-140	-		30
Di-n-butylphthalate	93		-		8-120	-		30
Di-n-octylphthalate	93		-		19-132	-		30
Diethyl phthalate	85		-		1-120	-		30
Dimethyl phthalate	90		-		1-120	-		30
Benzo(a)anthracene	83		-		42-133	-		30
Benzo(a)pyrene	79		-		32-148	-		30
Benzo(b)fluoranthene	81		-		42-140	-		30
Benzo(k)fluoranthene	87		-		25-146	-		30
Chrysene	83		-		44-140	-		30
Acenaphthylene	90		-		54-126	-		30
Anthracene	89		-		43-120	-		30
Benzo(ghi)perylene	82		-		1-195	-		30
Fluorene	86		-		70-120	-		30
Phenanthrene	86		-		65-120	-		30
Dibenzo(a,h)anthracene	84		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	79		-		1-151	-		30
Pyrene	82		-		70-120	-		30
4-Chloroaniline[1]	64		-		10-100	-		30
Dibenzofuran[1]	83		-		23-126	-		30
2-Methylnaphthalene[1]	84		-		40-109	-		30
n-Nitrosodimethylamine[1]	48		-		15-68	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501

Lab Number: L1821602
Report Date: 06/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1125256-2								
2,4,6-Trichlorophenol	90		-		52-129	-		30
p-Chloro-m-cresol[1]	92		-		68-130	-		30
2-Chlorophenol	82		-		36-120	-		30
2,4-Dichlorophenol	90		-		53-122	-		30
2,4-Dimethylphenol	90		-		42-120	-		30
2-Nitrophenol	86		-		45-167	-		30
4-Nitrophenol	67		-		13-129	-		30
2,4-Dinitrophenol	64		-		1-173	-		30
4,6-Dinitro-o-cresol	86		-		56-130	-		30
Pentachlorophenol	68		-		38-152	-		30
Phenol	51		-		17-120	-		30
2-Methylphenol[1]	84		-		38-102	-		30
3-Methylphenol/4-Methylphenol[1]	89		-		35-103	-		30
2,4,5-Trichlorophenol[1]	93		-		47-126	-		30
Benzoic Acid[1]	27		-		2-55	-		30
Benzyl Alcohol[1]	74		-		31-103	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501

Lab Number: L1821602
Report Date: 06/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1125256-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	61				35-77
Phenol-d6	50				24-61
Nitrobenzene-d5	85				15-314
2-Fluorobiphenyl	90				55-108
2,4,6-Tribromophenol	84				52-123
4-Terphenyl-d14	82				52-109

INORGANICS
&
MISCELLANEOUS

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501

Lab Number: L1821602
Report Date: 06/14/18

SAMPLE RESULTS

Lab ID: L1821602-03
Client ID: PROCESS EFFLUENT
Sample Location: BUFFALO, NY

Date Collected: 06/06/18 08:45
Date Received: 06/08/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	2.08		mg/l	0.025	0.009	5	06/12/18 23:27	06/13/18 13:35	121,4500CN-CE	LH
pH (H)	7.2		SU	-	NA	1	-	06/09/18 09:09	121,4500H+-B	GD

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501
Lab Number: L1821602
Report Date: 06/14/18

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 03 Batch: WG1125245-1										
Cyanide, Total	ND		mg/l	0.005	0.001	1	06/12/18 23:27	06/13/18 12:18	121,4500CN-CE	LH

Lab Control Sample Analysis

Batch Quality Control

Project Name: RIVERBEND S/A BSA

Project Number: T0322-018-501

Lab Number: L1821602

Report Date: 06/14/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 03 Batch: WG1124267-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 03 Batch: WG1125245-2								
Cyanide, Total	93		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501

Lab Number: L1821602
Report Date: 06/14/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 03 QC Batch ID: WG1125245-4 QC Sample: L1821426-01 Client ID: MS Sample												
Cyanide, Total	0.002J	0.2	0.179	90		-	-		90-110	-		30

Lab Duplicate Analysis

Batch Quality Control

Project Name: RIVERBEND S/A BSA

Project Number: T0322-018-501

Lab Number: L1821602

Report Date: 06/14/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 03 QC Batch ID: WG1124267-2 QC Sample: L1821459-01 Client ID: DUP Sample						
pH	8.4	8.4	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 03 QC Batch ID: WG1125245-3 QC Sample: L1821602-03 Client ID: PROCESS EFFLUENT						
Cyanide, Total	2.08	1.27	mg/l	**48**	Q	30

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501

Lab Number: L1821602
Report Date: 06/14/18

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1821602-01A	Vial Na2S2O3 preserved split	A	NA		3.4	Y	Absent		624.1(3)
L1821602-01B	Vial Na2S2O3 preserved split	A	NA		3.4	Y	Absent		624.1(3)
L1821602-01C	Vial Na2S2O3 preserved split	A	NA		3.4	Y	Absent		624.1(3)
L1821602-01D	Split Amber 1000ml Na2S2O3	A	N/A	N/A	3.4	Y	Absent		625.1(7)
L1821602-01E	Split Amber 1000ml Na2S2O3	A	N/A	N/A	3.4	Y	Absent		625.1(7)
L1821602-02A	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		COMP-VOA()
L1821602-02B	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		COMP-VOA()
L1821602-02C	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		COMP-VOA()
L1821602-02D	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		COMP-VOA()
L1821602-02E	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		COMP-VOA()
L1821602-02F	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		COMP-VOA()
L1821602-02G	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		COMP-VOA()
L1821602-02H	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		COMP-VOA()
L1821602-02I	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		COMP-VOA()
L1821602-02J	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		COMP-VOA()
L1821602-02K	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		COMP-VOA()
L1821602-02L	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		COMP-VOA()
L1821602-02M	Amber 1000ml Na2S2O3	A	7	7	3.4	Y	Absent		COMP-W()
L1821602-02N	Amber 1000ml Na2S2O3	A	7	7	3.4	Y	Absent		COMP-W()
L1821602-02O	Amber 1000ml Na2S2O3	A	7	7	3.4	Y	Absent		COMP-W()
L1821602-02P	Amber 1000ml Na2S2O3	A	7	7	3.4	Y	Absent		COMP-W()
L1821602-02Q	Amber 1000ml Na2S2O3	A	7	7	3.4	Y	Absent		COMP-W()
L1821602-02R	Amber 1000ml Na2S2O3	A	7	7	3.4	Y	Absent		COMP-W()

*Values in parentheses indicate holding time in days

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501

Lab Number: L1821602
Report Date: 06/14/18

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1821602-02S	Amber 1000ml Na2S2O3	A	7	7	3.4	Y	Absent		COMP-W()
L1821602-02T	Amber 1000ml Na2S2O3	A	7	7	3.4	Y	Absent		COMP-W()
L1821602-03A	Plastic 60ml unpreserved	A	7	7	3.4	Y	Absent		PH-4500(.01)
L1821602-03B	Plastic 250ml NaOH preserved	A	>12	>12	3.4	Y	Absent		TCN-4500(14)
L1821602-04A	Vial Na2S2O3 preserved	A	N/A	N/A	3.4	Y	Absent		ARCHIVE()
L1821602-04B	Vial Na2S2O3 preserved	A	N/A	N/A	3.4	Y	Absent		ARCHIVE()

*Values in parentheses indicate holding time in days

Project Name:	RIVERBEND S/A BSA	**Lab Number:**	L1821602
Project Number:	T0322-018-501	**Report Date:**	06/14/18

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: DU Report with 'J' Qualifiers

Project Name:	RIVERBEND S/A BSA	**Lab Number:**	L1821602
Project Number:	T0322-018-501	**Report Date:**	06/14/18

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-501
Lab Number: L1821602
Report Date: 06/14/18

REFERENCES

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

128 Method 624.1: Purgeables by GC/MS, EPA 821-R-16-008, December 2016.

129 Method 625.1: Base/Neutrals and Acids by GC/MS, EPA 821-R-16-007, December 2016.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Be, Cd, Cr, Cu, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

NEW YORK CHAIN OF CUSTODY

Page 1 of 1

Date Rec'd in Lab: 6/9/18

ALPHA Job #: L1822162

Project Information

Project Name:	Riverbend S/A BSA
Project Location:	Buffalo, NY
Project #	T0322-018-501
(Use Project name as Project #)	☐
Project Manager:	~~[illegible]~~ Brock Greene
ALPHAQuote #:	

Client Information

Client:	Benchmark Environmental
Address:	2558 Hamburg Turnpike,Ste300
	Buffalo, NY 14218
Phone:	716-856-0599
Fax:	BGreene@Turnkeyllc.com
Email:	~~[illegible]@turnkeyllc.com~~

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information

☑ Same as Client Info
PO #

Regulatory Requirement

☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.

Disposal Facility:
☐ NJ ☐ NY
☐ Other: NA

These samples have been previously analyzed by Alpha ☒

Other project specific requirements/comments:

Please specify Metals or TAL.

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	624	625	TCN	pH					Sample Specific Comments	Total Bottles
22162-01,02	Process Effluent - Grab 1	6/5/18	0815	Water	CEH	x	x							Lab to composite 1-4	5
01,02	Process Effluent - Grab 2	6/5/18	1205	Water	CEH	x	x							Lab to composite 1-4	5
01,02	Process Effluent - Grab 3	6/5/18	1710	Water	CEH	x	x							Lab to composite 1-4	5
01,02	Process Effluent - Grab 4	6/6/18	0845	Water	CEH	x	x							Lab to composite 1-4	5
03	Process Effluent	6/6/18	0845	Water	CEH			x	x						2
	~~Trip Blank~~			~~Water~~		~~x~~									~~2~~

	624	625	TCN	pH
Container Type	V	A	P	P
Preservative	H	H	E	A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Chester Hackett	6-6-18/1200	Audrey Libby AAL	6/8/18 15:00
Audrey Libby AAL	6/8/18 15:30	[signature]	6/9/18 00:45

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS.

Form No: 01-25 (rev. 30-Sept-2013)

ATTACHMENT 3

FLOW METER CALIBRATION DATA

Northeast Metrology Corp.

4490 Broadway
Depew, NY 14043
P: 716-827-3770 F: 716-827-3775
e-mail: nem@nemcal.com

Calibration Certificate

www.nemcal.com

Company:	RIVERBEND	**Certificate #:**	1208314
Address:	192 BARAGA STREET BUFFALO, NY 14210	**Calibration Date:**	1/3/2018
		PO/Acct:	
Contact:	BROCK GREENE	**Page:**	1 of 2
Department:		**Visual Condition:**	Good
		Date Received:	

Gage Desc:	Flow Transmitter / Sensor	**Control #:**	SFRB#80210142061
Manufacturer:	George Fischer Signet	**Model:**	8550 / 515
Location:		**Serial #:**	80210142061

Parameters:

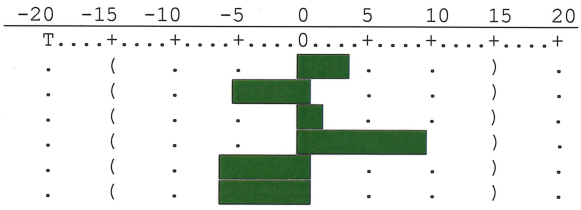
Units - GPM
Gas Type - N/A
Liguid Type -

Repairs:

+ / - Tolerances: 2.000% / 2.000%
Graph Scale: +0.100000

GPM

Nominal	Actual	Deviation	
+75.100000	+75.440000	+0.340000	
+75.100000	+74.560000	-0.540000	
+75.100000	+75.170000	+0.070000	
+75.100000	+75.980000	+0.880000	
+75.100000	+74.480000	-0.620000	Avg. of 10
+75.100000	+74.500000	-0.600000	Timed



Comments:

CALIBRATION PERFORMED ONSITE AT AMBIENT CONDITIONS: 59°F & 33% R.H.

SCHEDULE 80 PVC 3" O.D. I.D.=2.9"

TOTAL GALLONS (2018): 10226872
PERM GALLONS: 41912177
TOTAL GALLONS RESET AT END OF TESTING

mA OUTPUT: 0 = 3.99mA MAX = 16.09

Procedure:

110176:E-Flowme.gdf (Manual 1000)

We certify the equipment used for this calibration is traceable to NIST through one or more of the following numbers:
NEM-6009 Ultrasonic Flowmeter
1331545884, 1329407628 Cal Date / Due Date: 12/16/2016 -- 12/16/2018

Gage Status: PASS **Due Date: 1/3/2019**

We certify the equipment used for this calibration is traceable to the International System of Units (SI) via standards traceable to NIST or other National Metrology Institutes (NMI).
Dimensional calibration performed in NEM laboratory @ 68°F (±2.0°F) : (20°C (±1°C)) & relative humidity less than 45%.

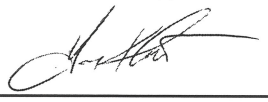
Northeast Metrology Corp.

4490 Broadway
Depew, NY 14043
P: 716-827-3770 F: 716-827-3775
e-mail: nem@nemcal.com

Calibration Certificate

Page #:	2 of 2	**Certificate #:**	1208314
Gage Desc:	Flow Transmitter / Sensor	**Control #:**	SFRB#80210142061
Manufacturer:	George Fischer Signet	**Model:**	8550 / 515
Location:		**Serial #:**	80210142061

Electronic & Mechanical calibration performed at ambient conditions.
All pertinent data and readings calibrated are as found & as left unless otherwise denoted in comments.
Calibration performed in accordance with ANSI/NCSL Z540-1-1994 unless otherwise denoted in comments.
Gage Blocks meet or exceed Federal Specifications for the grade and accuracy applicable to these items in accordance with GGG-G-15C.
Calibration meets or exceeds 4 : 1 ratio, with the exception of gage blocks stated above.
Measurement Uncertainties are based on approximately a 95% confidence level, using a coverage factor of k=2.
Measurement Uncertainty is taken into account in determining gage status (pass/fail).
Calibration is performed on premises at Northeast Metrology Corp. unless otherwise denoted in comments.
The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under federal statutes.
This certificate shall not be reproduced except in full, with the written approval of the originating metrology laboratory.

Certified By: GK m Signature: 

This certificate is not valid unless all 2 page(s) are present.
Results of this certificate relate only to the item mentioned in document header.
END OF DOCUMENT

December 12, 2018

Mr. Michael Szilagyi
Buffalo Sewer Authority
Industrial Waste Section
90 West Ferry Street
Buffalo, NY 14213-1799

Re: RiverBend Site
Ground Water Pre-Treatment Discharge Monitoring Results
December 2018 Semi-Annual Compliance Monitoring Report
BPDES Permit No. 16-01-BU278

Dear Mr. Szilagyi:

On behalf of our client, Fort Schuyler Management Corporation, TurnKey Environmental Restoration, LLC has prepared this correspondence to present the second semi-annual 2018 discharge monitoring results for the groundwater pre-treatment system at the above-referenced facility. Discharge monitoring was performed from November 27-28, 2018.

SAMPLE COLLECTION

Samples were collected from the pretreated process effluent (Outfall 001) in general accordance with Buffalo Pollution Discharge Elimination System (BPDES) Permit No. 16-01-BU278 in laboratory-provided, pre-cleaned, and pre-preserved sample bottles (see Figure 1). Four grab samples for volatile organic compound (VOC) and semi-volatile organic compound (SVOC) analysis were containerized in individual sample bottles for laboratory composite preparation during sample extraction and USEPA Method 624 and Method 625 analysis, respectively. Composite samples were also collected for laboratory pH and total cyanide analysis. In accordance with the Permit, composite samples were prepared for all required parameters by combining grab samples collected at four equally spaced intervals over the 24-hour monitoring period. Field documentation is provided in Attachment 1.

ANALYTICAL RESULTS

The current period analytical results are presented as Attachment 2. Compounds detected above the laboratory reporting limit for the November 2018 sampling event are summarized in Table 1 along with permitted BSA discharge limits. As presented, all parameters are within allowable limits.

FLOW MONITORING

Flow measurement data is presented in Table 1. Average daily flow was based on the total flow recorded during the monitoring period divided by the number of days in that monitoring period. A copy of the annual flow meter calibration data is presented in Attachment 3. The next flow meter calibration is tentatively scheduled for January 2019.

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Please contact us if you have any questions.

Sincerely,
TurnKey Environmental Restoration, LLC

Brock Greene
Project Environmental Scientist

ec: Tom O'Brien (Fort Schuyler)
Paul Werthman (TurnKey)

File: 0322-018-503

TABLES

TABLE 1

2018 SEMI-ANNUAL GROUNDWATER PRETREATMENT SYSTEM DATA SUMMARY

BPDES Permit #16-01-BU278
Fort Schuyler RiverBend Site
312 Abby Street, Buffalo, NY

Parameter	November 27-28, 2018		Daily Discharge Limits [2]
	Concentration (units as indicated)	*Mass [1] (pounds)*	
Laboratory pH (S.U.)	7.50	na	5.0 - 12.0
Field pH (S.U.) [3]	6.59	na	5.0 - 12.0
Volatile Organic Compounds - Method 624 (mg/L)			
Total VOCs	ND	na	Monitor
Semi-Volatile Organic Compounds - Method 625 (mg/L)			
Total SVOCs	ND	na	Monitor
Inorganics (mg/L)			
Total Cyanide	1.35	0.190	4.3 lbs
Average Daily Flow (gallons per day) [4]	16,894		*see Note 5*

Notes:
1. The monitoring result is calculated based on the concentration of detected parameters and the average daily flow rate identified below.
2. Mass limits are based on the Average Daily Flow through the December event; actual limits may vary slightly based on actual discharge.
3. Field pH is an average of 4 grab samples collected over a 24-hour period.
4. Average daily flow based on net flow recorded as presented below.
5. Permitted maximum allowable daily flow is 110,000 gpd. An action level of 54,000 gpd is identified in the Permit. The BSA is to be notified if flow consistently exceeds this action level so that the permit can be modifed.
6. " ND " = Indicates compound was analyzed for, but not detected above the reporting limit.

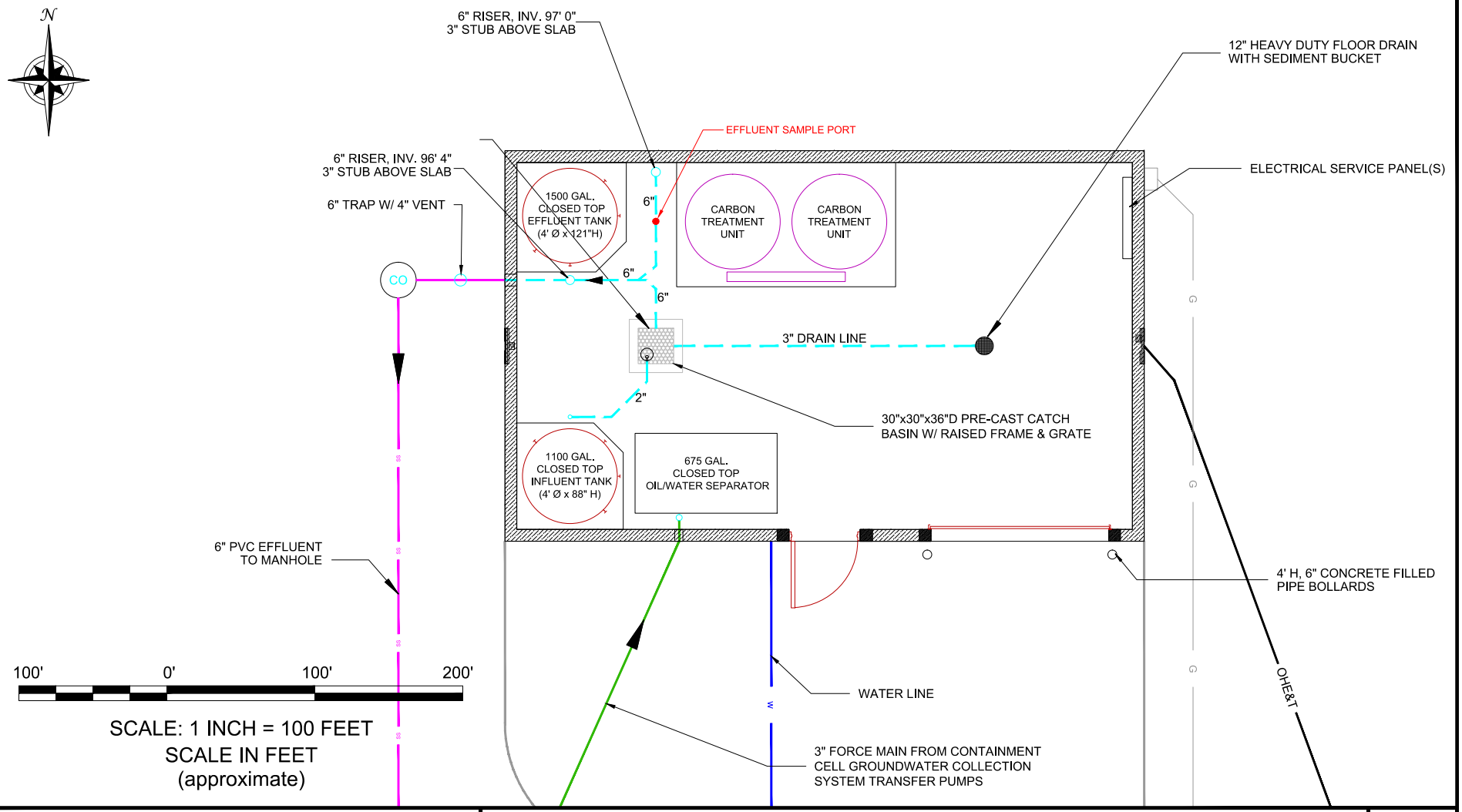
Flow Calculations:

Event	Date	Flow Measurement * (gallons)	Average Daily Flow * (gallons per day)
November 2018	6/8/2018	5,642,343	16,894
	12/7/2018	8,717,035	

Notes:
* = flow meter calibrated and reset to zero on 01/03/18. Average daily flow above accounts for the recalibration and zeroing.

FIGURES

F:\CAD\TurnKey\Riverbend (formerly Steelfields)\BSA Effluent Monitoring\2014 - First Semi-Annual Event (June)\Figure 1; GWPTS Building Detail.DWG



TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

PROJECT NO.: 0171-013-500

DATE: AUGUST 2014

DRAFTED BY: BCH

GWPTS BUILDING LAYOUT

BSA PERMIT NO. 14-04-BU267

RIVERBEND SITE
BUFFALO, NEW YORK

PREPARED FOR
RIVERBEND, LLC

FIGURE 1

ATTACHMENT 1

FIELD DOCUMENTATION

WATER SAMPLE COLLECTION LOG

PROJECT INFORMATION

Project Name: RiverBend Site
Project No.: 0322-016-500
Client: FSMC
Location: 312 Abby Street, Buffalo, NY

SAMPLE DESCRIPTION

I.D.: **Process Effluent**

Matrix: ☐ SURFACE WATER ☐ STORM ☐ SEEP ☐ OTHER ☐ INFLUENT ☑ EFFLUENT

SAMPLE INFORMATION

Date Collected: 11/27/18 – 11/28/18
Time Collected:
Date Shipped to Lab: 11/28/18
Collected By: CEH

Sample Type: ☐ POINT ☐ GRAB ☑ COMPOSITE

Sample Collection Method: ☐ DIRECT DIP ☐ SS / POLY. DIPPER ☐ PERISTALTIC PUMP ☐ POLY. DISP. BAILER ☐ ISCO SAMPLER ☑ OTHER - sample port grab

SAMPLING INFORMATION

Weather: Cloudy
Air Temperature: 30°F

Parameter	Units	Grab #1	Grab #2	Grab #3	Grab #4
pH	units	6.55	6.57	6.68	6.54
Temp.	°C	11.7	11.3	11.4	11.4
Cond.	mS	1191	1167	1257	1186
Turbidity	NTU	20.1	15.3	16.7	14.7
Eh / ORP	mV	20	4	-3	15
D.O.	ppm	4.07	3.96	3.80	4.15
Odor	olfactory	none	none	none	none
Appearance	visual	Clear	clear	clear	Clear
Sample Date		11-27-18	11-27-18	11-27-18	11-28-18
Sample Time		0830	1230	1700	0900

EXACT LOCATION (if applicable)

Northing (ft)	Easting (ft)	Elevation (fmsl)

SAMPLE DESCRIPTION (appearance, olfactory):

Clear, no odor

SAMPLE ANALYSIS (depth, laboratory analysis required):

* Collect four individual grab samples for method 624 (VOCs) and 625 (SVOCs) analysis, these samples will be composited at the lab.
* Collect composite samples for cyanide and laboratory pH by filling equal aliquots of sample to fill sample containers

ADDITIONAL REMARKS:

PREPARED BY: CEH **DATE:** 11-28-18

TurnKey Environmental Restoration, LLC

EQUIPMENT CALIBRATION LOG

PROJECT INFORMATION:

Project Name: [redacted] Process Effluent

Project No.: T0322-018-500

Client:

Date: 11-27-18

Instrument Source: [X] BM [ ] Rental

METER TYPE	UNITS	TIME	MAKE/MODEL	SERIAL NUMBER	CAL. BY	STANDARD	POST CAL. READING	SETTINGS
[X] pH meter	units	0815	Myron L Company Ultra Meter 6P	6213516 [ ] 6243084 [X] 6212375 [ ] 6223973 [ ]	CEH	4.00 7.00 10.01	4.00 7.06 10.04	
[X] Turbidity meter	NTU	0820	Hach 2100P or 2100Q Turbidimeter	06120C020523 (P) [ ] 13120C030432 (Q) [X]	CEH	< 0.4 or 10 for 2100 Q 20 100 800	10.4 20.0 102 793	
[ ] Turbidity meter	NTU		LaMotte 2020	6523-1816 (La) [ ]		0.0 NTU 1.0 NTU 10.0 NTU		
[X] Sp. Cond. meter	uS mS	0830	Myron L Company Ultra Meter 6P	6213516 [ ] 6243084 [X] 6212375 [ ] 6223973 [ ]	CEH	7000 mS @ 25 °C	7000	
[ ] PID	ppm		MinRAE 2000			open air zero _____ ppm Iso. Gas		MIBK response factor = 1.0
[X] Dissolved Oxygen	ppm	0825	HACH Model HQ30d	080700023281 [ ] 100500041867 [ ] 1402000100319 [X]	CEH	100% Satuartion	100 %	
[ ] Particulate meter	mg/m^3					zero air		
[ ] Oxygen	%					open air		
[ ] Hydrogen sulfide	ppm					open air		
[ ] Carbon monoxide	ppm					open air		
[ ] LEL	%					open air		
[ ] Radiation Meter	uR/H					background area		

ADDITIONAL REMARKS:

PREPARED BY: CEH **DATE:** 11-27-18

ATTACHMENT 2

ANALYTICAL DATA

ANALYTICAL REPORT

Lab Number:	L1848408
Client:	Benchmark & Turnkey Companies 2558 Hamburg Turnpike Suite 300 Buffalo, NY 14218
ATTN:	Brock Greene
Phone:	(716) 856-0599
Project Name:	RIVERBEND S/A BSA
Project Number:	T0322-018-500
Report Date:	12/05/18

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-500

Lab Number: L1848408
Report Date: 12/05/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1848408-01	PROCESS EFFLUENT GRAB 1-4	WATER	BUFFALO, NY	11/28/18 09:00	11/28/18
L1848408-02	COMPOSITE OF PROCESS EFFLUENT GRAB 1-4	WATER	BUFFALO, NY	11/28/18 09:00	11/28/18
L1848408-03	PROCESS EFFLUENT	WATER	BUFFALO, NY	11/28/18 09:00	11/28/18
L1848408-04	TRIP BLANK	WATER	BUFFALO, NY	11/28/18 00:00	11/28/18

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-500

Lab Number: L1848408
Report Date: 12/05/18

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name:	RIVERBEND S/A BSA	**Lab Number:**	L1848408
Project Number:	T0322-018-500	**Report Date:**	12/05/18

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Cyanide, Total

WG1183836: A Matrix Spike and Laboratory Duplicate were prepared with the sample batch, however, the native sample was not available for reporting; therefore, the Matrix Spike and Laboratory Duplicate results could not be reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Cristin Walker

Title: Technical Director/Representative Date: 12/05/18

ORGANICS

VOLATILES

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-500
Lab Number: L1848408
Report Date: 12/05/18

SAMPLE RESULTS

Lab ID: L1848408-01
Client ID: PROCESS EFFLUENT GRAB 1-4
Sample Location: BUFFALO, NY

Date Collected: 11/28/18 09:00
Date Received: 11/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 11/30/18 15:02
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	1.0	0.56	1
1,1-Dichloroethane	ND		ug/l	1.5	0.40	1
Chloroform	ND		ug/l	1.0	0.38	1
Carbon tetrachloride	ND		ug/l	1.0	0.24	1
1,2-Dichloropropane	ND		ug/l	3.5	0.46	1
Dibromochloromethane	ND		ug/l	1.0	0.27	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.34	1
2-Chloroethylvinyl ether	ND		ug/l	10	0.35	1
Tetrachloroethene	ND		ug/l	1.0	0.26	1
Chlorobenzene	ND		ug/l	3.5	0.30	1
Trichlorofluoromethane	ND		ug/l	5.0	0.28	1
1,2-Dichloroethane	ND		ug/l	1.5	0.47	1
1,1,1-Trichloroethane	ND		ug/l	2.0	0.29	1
Bromodichloromethane	ND		ug/l	1.0	0.28	1
trans-1,3-Dichloropropene	ND		ug/l	1.5	0.31	1
cis-1,3-Dichloropropene	ND		ug/l	1.5	0.34	1
Bromoform	ND		ug/l	1.0	0.22	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.20	1
Benzene	ND		ug/l	1.0	0.38	1
Toluene	ND		ug/l	1.0	0.31	1
Ethylbenzene	ND		ug/l	1.0	0.28	1
Chloromethane	ND		ug/l	5.0	1.0	1
Bromomethane	ND		ug/l	5.0	1.2	1
Vinyl chloride	ND		ug/l	1.0	0.38	1
Chloroethane	ND		ug/l	2.0	0.37	1
1,1-Dichloroethene	ND		ug/l	1.0	0.31	1
trans-1,2-Dichloroethene	ND		ug/l	1.5	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.17	1

Project Name: RIVERBEND S/A BSA **Lab Number:** L1848408

Project Number: T0322-018-500 **Report Date:** 12/05/18

SAMPLE RESULTS

Lab ID: L1848408-01 Date Collected: 11/28/18 09:00

Client ID: PROCESS EFFLUENT GRAB 1-4 Date Received: 11/28/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	0.33	1
1,2-Dichlorobenzene	ND		ug/l	5.0	0.28	1
1,3-Dichlorobenzene	ND		ug/l	5.0	0.27	1
1,4-Dichlorobenzene	ND		ug/l	5.0	0.29	1
p/m-Xylene	ND		ug/l	2.0	0.30	1
o-xylene	ND		ug/l	1.0	0.34	1
Xylenes, Total	ND		ug/l	1.0	0.30	1
Styrene	ND		ug/l	1.0	0.37	1
Acetone	ND		ug/l	10	2.4	1
Carbon disulfide	ND		ug/l	5.0	0.28	1
2-Butanone	ND		ug/l	10	1.0	1
Vinyl acetate	ND		ug/l	10	0.41	1
4-Methyl-2-pentanone	ND		ug/l	10	0.19	1
2-Hexanone	ND		ug/l	10	0.55	1
Acrolein	ND		ug/l	8.0	1.8	1
Acrylonitrile	ND		ug/l	10	0.33	1
Dibromomethane	ND		ug/l	1.0	0.23	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	100		60-140
Fluorobenzene	105		60-140
4-Bromofluorobenzene	101		60-140

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-500
Lab Number: L1848408
Report Date: 12/05/18

SAMPLE RESULTS

Lab ID: L1848408-04
Client ID: TRIP BLANK
Sample Location: BUFFALO, NY

Date Collected: 11/28/18 00:00
Date Received: 11/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 11/30/18 13:14
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	1.0	0.56	1
1,1-Dichloroethane	ND		ug/l	1.5	0.40	1
Chloroform	ND		ug/l	1.0	0.38	1
Carbon tetrachloride	ND		ug/l	1.0	0.24	1
1,2-Dichloropropane	ND		ug/l	3.5	0.46	1
Dibromochloromethane	ND		ug/l	1.0	0.27	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.34	1
2-Chloroethylvinyl ether	ND		ug/l	10	0.35	1
Tetrachloroethene	ND		ug/l	1.0	0.26	1
Chlorobenzene	ND		ug/l	3.5	0.30	1
Trichlorofluoromethane	ND		ug/l	5.0	0.28	1
1,2-Dichloroethane	ND		ug/l	1.5	0.47	1
1,1,1-Trichloroethane	ND		ug/l	2.0	0.29	1
Bromodichloromethane	ND		ug/l	1.0	0.28	1
trans-1,3-Dichloropropene	ND		ug/l	1.5	0.31	1
cis-1,3-Dichloropropene	ND		ug/l	1.5	0.34	1
Bromoform	ND		ug/l	1.0	0.22	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.20	1
Benzene	ND		ug/l	1.0	0.38	1
Toluene	ND		ug/l	1.0	0.31	1
Ethylbenzene	ND		ug/l	1.0	0.28	1
Chloromethane	ND		ug/l	5.0	1.0	1
Bromomethane	ND		ug/l	5.0	1.2	1
Vinyl chloride	ND		ug/l	1.0	0.38	1
Chloroethane	ND		ug/l	2.0	0.37	1
1,1-Dichloroethene	ND		ug/l	1.0	0.31	1
trans-1,2-Dichloroethene	ND		ug/l	1.5	0.33	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.17	1

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-500
Lab Number: L1848408
Report Date: 12/05/18

SAMPLE RESULTS

Lab ID: L1848408-04
Client ID: TRIP BLANK
Sample Location: BUFFALO, NY
Date Collected: 11/28/18 00:00
Date Received: 11/28/18
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	0.33	1
1,2-Dichlorobenzene	ND		ug/l	5.0	0.28	1
1,3-Dichlorobenzene	ND		ug/l	5.0	0.27	1
1,4-Dichlorobenzene	ND		ug/l	5.0	0.29	1
p/m-Xylene	ND		ug/l	2.0	0.30	1
o-xylene	ND		ug/l	1.0	0.34	1
Xylenes, Total	ND		ug/l	1.0	0.30	1
Styrene	ND		ug/l	1.0	0.37	1
Acetone	ND		ug/l	10	2.4	1
Carbon disulfide	0.50	J	ug/l	5.0	0.28	1
2-Butanone	ND		ug/l	10	1.0	1
Vinyl acetate	ND		ug/l	10	0.41	1
4-Methyl-2-pentanone	ND		ug/l	10	0.19	1
2-Hexanone	ND		ug/l	10	0.55	1
Acrolein	ND		ug/l	8.0	1.8	1
Acrylonitrile	ND		ug/l	10	0.33	1
Dibromomethane	ND		ug/l	1.0	0.23	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	99		60-140
Fluorobenzene	99		60-140
4-Bromofluorobenzene	102		60-140

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-500
Lab Number: L1848408
Report Date: 12/05/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 11/30/18 09:00
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,04 Batch: WG1184283-8					
Methylene chloride	ND		ug/l	1.0	0.56
1,1-Dichloroethane	ND		ug/l	1.5	0.40
Chloroform	ND		ug/l	1.0	0.38
Carbon tetrachloride	ND		ug/l	1.0	0.24
1,2-Dichloropropane	ND		ug/l	3.5	0.46
Dibromochloromethane	ND		ug/l	1.0	0.27
1,1,2-Trichloroethane	ND		ug/l	1.5	0.34
2-Chloroethylvinyl ether	ND		ug/l	10	0.35
Tetrachloroethene	ND		ug/l	1.0	0.26
Chlorobenzene	ND		ug/l	3.5	0.30
Trichlorofluoromethane	ND		ug/l	5.0	0.28
1,2-Dichloroethane	ND		ug/l	1.5	0.47
1,1,1-Trichloroethane	ND		ug/l	2.0	0.29
Bromodichloromethane	ND		ug/l	1.0	0.28
trans-1,3-Dichloropropene	ND		ug/l	1.5	0.31
cis-1,3-Dichloropropene	ND		ug/l	1.5	0.34
Bromoform	ND		ug/l	1.0	0.22
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	0.20
Benzene	ND		ug/l	1.0	0.38
Toluene	ND		ug/l	1.0	0.31
Ethylbenzene	ND		ug/l	1.0	0.28
Chloromethane	ND		ug/l	5.0	1.0
Bromomethane	ND		ug/l	5.0	1.2
Vinyl chloride	ND		ug/l	1.0	0.38
Chloroethane	ND		ug/l	2.0	0.37
1,1-Dichloroethene	ND		ug/l	1.0	0.31
trans-1,2-Dichloroethene	ND		ug/l	1.5	0.33
cis-1,2-Dichloroethene	ND		ug/l	1.0	0.17
Trichloroethene	ND		ug/l	1.0	0.33

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-500
Lab Number: L1848408
Report Date: 12/05/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 11/30/18 09:00
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,04 Batch: WG1184283-8					
1,2-Dichlorobenzene	ND		ug/l	5.0	0.28
1,3-Dichlorobenzene	ND		ug/l	5.0	0.27
1,4-Dichlorobenzene	ND		ug/l	5.0	0.29
p/m-Xylene	ND		ug/l	2.0	0.30
o-xylene	ND		ug/l	1.0	0.34
Xylenes, Total	ND		ug/l	1.0	0.30
Styrene	ND		ug/l	1.0	0.37
Acetone	ND		ug/l	10	2.4
Carbon disulfide	ND		ug/l	5.0	0.28
2-Butanone	ND		ug/l	10	1.0
Vinyl acetate	ND		ug/l	10	0.41
4-Methyl-2-pentanone	ND		ug/l	10	0.19
2-Hexanone	ND		ug/l	10	0.55
Acrolein	ND		ug/l	8.0	1.8
Acrylonitrile	ND		ug/l	10	0.33
n-Hexane[1]	ND		ug/l	20	0.17
Methyl tert butyl ether	ND		ug/l	10	0.19
Dibromomethane	ND		ug/l	1.0	0.23
1,4-Dioxane[1]	110	J	ug/l	2000	30.
Tert-Butyl Alcohol	ND		ug/l	100	3.9
Tertiary-Amyl Methyl Ether	ND		ug/l	20	0.28
Dichlorodifluoromethane[1]	ND		ug/l	1.0	0.32

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	99		60-140
Fluorobenzene	99		60-140
4-Bromofluorobenzene	96		60-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: RIVERBEND S/A BSA

Project Number: T0322-018-500

Lab Number: L1848408

Report Date: 12/05/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,04 Batch: WG1184283-7								
Methylene chloride	100		-		60-140	-		28
1,1-Dichloroethane	95		-		50-150	-		49
Chloroform	100		-		70-135	-		54
Carbon tetrachloride	80		-		70-130	-		41
1,2-Dichloropropane	95		-		35-165	-		55
Dibromochloromethane	100		-		70-135	-		50
1,1,2-Trichloroethane	100		-		70-130	-		45
2-Chloroethylvinyl ether	100		-		1-225	-		71
Tetrachloroethene	95		-		70-130	-		39
Chlorobenzene	90		-		65-135	-		53
Trichlorofluoromethane	100		-		50-150	-		84
1,2-Dichloroethane	95		-		70-130	-		49
1,1,1-Trichloroethane	85		-		70-130	-		36
Bromodichloromethane	105		-		65-135	-		56
trans-1,3-Dichloropropene	90		-		50-150	-		86
cis-1,3-Dichloropropene	95		-		25-175	-		58
Bromoform	90		-		70-130	-		42
1,1,2,2-Tetrachloroethane	100		-		60-140	-		61
Benzene	95		-		65-135	-		61
Toluene	100		-		70-130	-		41
Ethylbenzene	90		-		60-140	-		63
Chloromethane	90		-		1-205	-		60
Bromomethane	110		-		15-185	-		61

Lab Control Sample Analysis

Batch Quality Control

Project Name: RIVERBEND S/A BSA

Project Number: T0322-018-500

Lab Number: L1848408

Report Date: 12/05/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,04 Batch: WG1184283-7								
Vinyl chloride	120		-		5-195	-		66
Chloroethane	90		-		40-160	-		78
1,1-Dichloroethene	95		-		50-150	-		32
trans-1,2-Dichloroethene	100		-		70-130	-		45
cis-1,2-Dichloroethene	85		-		60-140	-		30
Trichloroethene	95		-		65-135	-		48
1,2-Dichlorobenzene	95		-		65-135	-		57
1,3-Dichlorobenzene	90		-		70-130	-		43
1,4-Dichlorobenzene	95		-		65-135	-		57
p/m-Xylene	85		-		60-140	-		30
o-xylene	85		-		60-140	-		30
Styrene	80		-		60-140	-		30
Acetone	112		-		40-160	-		30
Carbon disulfide	80		-		60-140	-		30
2-Butanone	110		-		60-140	-		30
Vinyl acetate	112		-		60-140	-		30
4-Methyl-2-pentanone	104		-		60-140	-		30
2-Hexanone	106		-		60-140	-		30
Acrolein	112		-		60-140	-		30
Acrylonitrile	100		-		60-140	-		60
Methyl tert butyl ether	90		-		60-140	-		30
Dibromomethane	90		-		70-130	-		30
1,4-Dioxane[1]	95		-		60-140	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-500

Lab Number: L1848408
Report Date: 12/05/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,04 Batch: WG1184283-7								
Tert-Butyl Alcohol	110		-		60-140	-		30
Tertiary-Amyl Methyl Ether	85		-		60-140	-		30
Dichlorodifluoromethane[1]	85		-		70-130	-		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	100				60-140
Fluorobenzene	97				60-140
4-Bromofluorobenzene	98				60-140

SEMIVOLATILES

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-500
Lab Number: L1848408
Report Date: 12/05/18

SAMPLE RESULTS

Lab ID: L1848408-01
Client ID: PROCESS EFFLUENT GRAB 1-4
Sample Location: BUFFALO, NY

Date Collected: 11/28/18 09:00
Date Received: 11/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 11/30/18 21:21
Analyst: ALS

Extraction Method: EPA 625.1
Extraction Date: 11/29/18 07:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/l	2.0	0.41	1
Benzidine[1]	ND		ug/l	20	12.	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	1.5	1
Hexachlorobenzene	ND		ug/l	2.0	0.95	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.60	1
2-Chloronaphthalene	ND		ug/l	2.0	0.32	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	0.46	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.64	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.63	1
Azobenzene[1]	ND		ug/l	2.0	0.89	1
Fluoranthene	ND		ug/l	2.0	0.74	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.37	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.45	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.82	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.58	1
Hexachlorobutadiene	ND		ug/l	2.0	0.92	1
Hexachlorocyclopentadiene[1]	ND		ug/l	10	1.4	1
Hexachloroethane	ND		ug/l	2.0	0.97	1
Isophorone	ND		ug/l	5.0	0.55	1
Naphthalene	ND		ug/l	2.0	0.90	1
Nitrobenzene	ND		ug/l	2.0	0.79	1
NDPA/DPA[1]	ND		ug/l	2.0	0.78	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.63	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.2	1.7	1
Butyl benzyl phthalate	ND		ug/l	5.0	0.67	1
Di-n-butylphthalate	ND		ug/l	5.0	0.63	1
Di-n-octylphthalate	ND		ug/l	5.0	0.63	1
Diethyl phthalate	ND		ug/l	5.0	0.72	1

Project Name: RIVERBEND S/A BSA **Lab Number:** L1848408

Project Number: T0322-018-500 **Report Date:** 12/05/18

SAMPLE RESULTS

Lab ID: L1848408-01 Date Collected: 11/28/18 09:00

Client ID: PROCESS EFFLUENT GRAB 1-4 Date Received: 11/28/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Dimethyl phthalate	ND		ug/l	5.0	1.4	1
Benzo(a)anthracene	ND		ug/l	2.0	0.66	1
Benzo(a)pyrene	ND		ug/l	2.0	0.61	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.74	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.74	1
Chrysene	ND		ug/l	2.0	0.67	1
Acenaphthylene	ND		ug/l	2.0	0.93	1
Anthracene	ND		ug/l	2.0	0.79	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.67	1
Fluorene	ND		ug/l	2.0	0.93	1
Phenanthrene	ND		ug/l	2.0	0.82	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.69	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.63	1
Pyrene	ND		ug/l	2.0	0.73	1
4-Chloroaniline[1]	ND		ug/l	5.0	0.79	1
Dibenzofuran[1]	ND		ug/l	2.0	0.37	1
2-Methylnaphthalene[1]	ND		ug/l	2.0	0.35	1
n-Nitrosodimethylamine[1]	ND		ug/l	2.0	0.41	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1
p-Chloro-m-cresol[1]	ND		ug/l	2.0	0.53	1
2-Chlorophenol	ND		ug/l	2.0	0.51	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.55	1
2,4-Dimethylphenol	ND		ug/l	5.0	0.85	1
2-Nitrophenol	ND		ug/l	5.0	0.60	1
4-Nitrophenol	ND		ug/l	10	0.83	1
2,4-Dinitrophenol	ND		ug/l	20	1.2	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.2	1
Pentachlorophenol	ND		ug/l	5.0	0.62	1
Phenol	ND		ug/l	5.0	0.26	1
2-Methylphenol[1]	ND		ug/l	5.0	0.77	1
3-Methylphenol/4-Methylphenol[1]	ND		ug/l	5.0	0.51	1
2,4,5-Trichlorophenol[1]	ND		ug/l	5.0	0.64	1
Benzoic Acid[1]	ND		ug/l	50	1.2	1
Benzyl Alcohol[1]	ND		ug/l	2.0	0.49	1

Project Name: RIVERBEND S/A BSA **Lab Number:** L1848408

Project Number: T0322-018-500 **Report Date:** 12/05/18

SAMPLE RESULTS

Lab ID: L1848408-01 Date Collected: 11/28/18 09:00

Client ID: PROCESS EFFLUENT GRAB 1-4 Date Received: 11/28/18

Sample Location: BUFFALO, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	44		25-87
Phenol-d6	31		16-65
Nitrobenzene-d5	73		42-122
2-Fluorobiphenyl	67		46-121
2,4,6-Tribromophenol	69		45-128
4-Terphenyl-d14	64		47-138

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-500
Lab Number: L1848408
Report Date: 12/05/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 11/30/18 17:10
Analyst: ALS

Extraction Method: EPA 625.1
Extraction Date: 11/29/18 07:34

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1183726-1					
Acenaphthene	ND		ug/l	2.0	0.41
Benzidine[1]	ND		ug/l	20	12.
1,2,4-Trichlorobenzene	ND		ug/l	5.0	1.5
Hexachlorobenzene	ND		ug/l	2.0	0.95
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.60
2-Chloronaphthalene	ND		ug/l	2.0	0.32
3,3'-Dichlorobenzidine	ND		ug/l	5.0	0.46
2,4-Dinitrotoluene	ND		ug/l	5.0	0.64
2,6-Dinitrotoluene	ND		ug/l	5.0	0.63
Azobenzene[1]	ND		ug/l	2.0	0.89
Fluoranthene	ND		ug/l	2.0	0.74
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.37
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.45
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.82
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.58
Hexachlorobutadiene	ND		ug/l	2.0	0.92
Hexachlorocyclopentadiene[1]	ND		ug/l	10	1.4
Hexachloroethane	ND		ug/l	2.0	0.97
Isophorone	ND		ug/l	5.0	0.55
Naphthalene	ND		ug/l	2.0	0.90
Nitrobenzene	ND		ug/l	2.0	0.79
NDPA/DPA[1]	ND		ug/l	2.0	0.78
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.63
Bis(2-ethylhexyl)phthalate	1.8	J	ug/l	2.2	1.7
Butyl benzyl phthalate	ND		ug/l	5.0	0.67
Di-n-butylphthalate	ND		ug/l	5.0	0.63
Di-n-octylphthalate	ND		ug/l	5.0	0.63
Diethyl phthalate	ND		ug/l	5.0	0.72
Dimethyl phthalate	ND		ug/l	5.0	1.4

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-500

Lab Number: L1848408
Report Date: 12/05/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 11/30/18 17:10
Analyst: ALS

Extraction Method: EPA 625.1
Extraction Date: 11/29/18 07:34

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1183726-1					
Benzo(a)anthracene	ND		ug/l	2.0	0.66
Benzo(a)pyrene	ND		ug/l	2.0	0.61
Benzo(b)fluoranthene	ND		ug/l	2.0	0.74
Benzo(k)fluoranthene	ND		ug/l	2.0	0.74
Chrysene	ND		ug/l	2.0	0.67
Acenaphthylene	ND		ug/l	2.0	0.93
Anthracene	ND		ug/l	2.0	0.79
Benzo(ghi)perylene	ND		ug/l	2.0	0.67
Fluorene	ND		ug/l	2.0	0.93
Phenanthrene	ND		ug/l	2.0	0.82
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.69
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.63
Pyrene	ND		ug/l	2.0	0.73
4-Chloroaniline[1]	ND		ug/l	5.0	0.79
Dibenzofuran[1]	ND		ug/l	2.0	0.37
2-Methylnaphthalene[1]	ND		ug/l	2.0	0.35
n-Nitrosodimethylamine[1]	ND		ug/l	2.0	0.41
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61
p-Chloro-m-cresol[1]	ND		ug/l	2.0	0.53
2-Chlorophenol	ND		ug/l	2.0	0.51
2,4-Dichlorophenol	ND		ug/l	5.0	0.55
2,4-Dimethylphenol	ND		ug/l	5.0	0.85
2-Nitrophenol	ND		ug/l	5.0	0.60
4-Nitrophenol	ND		ug/l	10	0.83
2,4-Dinitrophenol	ND		ug/l	20	1.2
4,6-Dinitro-o-cresol	ND		ug/l	10	1.2
Pentachlorophenol	ND		ug/l	5.0	0.62
Phenol	ND		ug/l	5.0	0.26
2-Methylphenol[1]	ND		ug/l	5.0	0.77

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-500
Lab Number: L1848408
Report Date: 12/05/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 11/30/18 17:10
Analyst: ALS

Extraction Method: EPA 625.1
Extraction Date: 11/29/18 07:34

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1183726-1					
3-Methylphenol/4-Methylphenol[1]	ND		ug/l	5.0	0.51
2,4,5-Trichlorophenol[1]	ND		ug/l	5.0	0.64
Benzoic Acid[1]	ND		ug/l	50	1.2
Benzyl Alcohol[1]	ND		ug/l	2.0	0.49

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	43		25-87
Phenol-d6	31		16-65
Nitrobenzene-d5	74		42-122
2-Fluorobiphenyl	68		46-121
2,4,6-Tribromophenol	60		45-128
4-Terphenyl-d14	67		47-138

Lab Control Sample Analysis

Batch Quality Control

Project Name: RIVERBEND S/A BSA

Project Number: T0322-018-500

Lab Number: L1848408

Report Date: 12/05/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1183726-2								
Acenaphthene	77		-		60-132	-		30
Benzidine[1]	3		-		0-70	-		30
1,2,4-Trichlorobenzene	67		-		57-130	-		30
Hexachlorobenzene	77		-		8-142	-		30
Bis(2-chloroethyl)ether	73		-		43-126	-		30
2-Chloronaphthalene	73		-		65-120	-		30
3,3'-Dichlorobenzidine	38		-		8-213	-		30
2,4-Dinitrotoluene	94		-		48-127	-		30
2,6-Dinitrotoluene	90		-		68-137	-		30
Azobenzene[1]	97		-		44-115	-		30
Fluoranthene	86		-		43-121	-		30
4-Chlorophenyl phenyl ether	78		-		38-145	-		30
4-Bromophenyl phenyl ether	80		-		65-120	-		30
Bis(2-chloroisopropyl)ether	85		-		63-139	-		30
Bis(2-chloroethoxy)methane	82		-		49-165	-		30
Hexachlorobutadiene	62		-		38-120	-		30
Hexachlorocyclopentadiene[1]	62		-		7-118	-		30
Hexachloroethane	66		-		55-120	-		30
Isophorone	89		-		47-180	-		30
Naphthalene	69		-		36-120	-		30
Nitrobenzene	80		-		54-158	-		30
NDPA/DPA[1]	83		-		45-112	-		30
n-Nitrosodi-n-propylamine	89		-		14-198	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: RIVERBEND S/A BSA

Project Number: T0322-018-500

Lab Number: L1848408

Report Date: 12/05/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1183726-2								
Bis(2-ethylhexyl)phthalate	87		-		29-137	-		30
Butyl benzyl phthalate	96		-		1-140	-		30
Di-n-butylphthalate	98		-		8-120	-		30
Di-n-octylphthalate	87		-		19-132	-		30
Diethyl phthalate	89		-		1-120	-		30
Dimethyl phthalate	86		-		1-120	-		30
Benzo(a)anthracene	85		-		42-133	-		30
Benzo(a)pyrene	94		-		32-148	-		30
Benzo(b)fluoranthene	88		-		42-140	-		30
Benzo(k)fluoranthene	89		-		25-146	-		30
Chrysene	82		-		44-140	-		30
Acenaphthylene	79		-		54-126	-		30
Anthracene	84		-		43-120	-		30
Benzo(ghi)perylene	87		-		1-195	-		30
Fluorene	81		-		70-120	-		30
Phenanthrene	79		-		65-120	-		30
Dibenzo(a,h)anthracene	90		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	92		-		1-151	-		30
Pyrene	84		-		70-120	-		30
4-Chloroaniline[1]	64		-		10-100	-		30
Dibenzofuran[1]	78		-		23-126	-		30
2-Methylnaphthalene[1]	73		-		40-109	-		30
n-Nitrosodimethylamine[1]	45		-		15-68	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-500

Lab Number: L1848408
Report Date: 12/05/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1183726-2								
2,4,6-Trichlorophenol	79		-		52-129	-		30
p-Chloro-m-cresol[1]	88		-		68-130	-		30
2-Chlorophenol	69		-		36-120	-		30
2,4-Dichlorophenol	80		-		53-122	-		30
2,4-Dimethylphenol	58		-		42-120	-		30
2-Nitrophenol	77		-		45-167	-		30
4-Nitrophenol	59		-		13-129	-		30
2,4-Dinitrophenol	51		-		1-173	-		30
4,6-Dinitro-o-cresol	78		-		56-130	-		30
Pentachlorophenol	63		-		38-152	-		30
Phenol	38		-		17-120	-		30
2-Methylphenol[1]	67		-		38-102	-		30
3-Methylphenol/4-Methylphenol[1]	67		-		35-103	-		30
2,4,5-Trichlorophenol[1]	82		-		47-126	-		30
Benzoic Acid[1]	17		-		2-55	-		30
Benzyl Alcohol[1]	72		-		31-103	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: RIVERBEND S/A BSA

Project Number: T0322-018-500

Lab Number: L1848408

Report Date: 12/05/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1183726-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	48				25-87
Phenol-d6	36				16-65
Nitrobenzene-d5	78				42-122
2-Fluorobiphenyl	73				46-121
2,4,6-Tribromophenol	81				45-128
4-Terphenyl-d14	74				47-138

INORGANICS
&
MISCELLANEOUS

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-500

Lab Number: L1848408
Report Date: 12/05/18

SAMPLE RESULTS

Lab ID: L1848408-03
Client ID: PROCESS EFFLUENT
Sample Location: BUFFALO, NY

Date Collected: 11/28/18 09:00
Date Received: 11/28/18
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	1.35		mg/l	0.025	0.009	5	11/29/18 11:10	11/29/18 13:40	121,4500CN-CE	LH
pH (H)	7.5		SU	-	NA	1	-	11/29/18 04:34	121,4500H+-B	JW

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-500
Lab Number: L1848408
Report Date: 12/05/18

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 03 Batch: WG1183836-1										
Cyanide, Total	ND		mg/l	0.005	0.001	1	11/29/18 11:10	11/29/18 13:12	121,4500CN-CE	LH

Lab Control Sample Analysis

Batch Quality Control

Project Name: RIVERBEND S/A BSA

Project Number: T0322-018-500

Lab Number: L1848408

Report Date: 12/05/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 03 Batch: WG1183692-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 03 Batch: WG1183836-2								
Cyanide, Total	107		-		90-110	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: RIVERBEND S/A BSA

Project Number: T0322-018-500

Lab Number: L1848408

Report Date: 12/05/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 03 QC Batch ID: WG1183692-2 QC Sample: L1848408-03 Client ID: PROCESS EFFLUENT						
pH (H)	7.5	7.5	SU	0		5

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-500

Lab Number: L1848408
Report Date: 12/05/18

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1848408-01A	Vial Na2S2O3 preserved split	A	NA		2.4	Y	Absent		624.1(3)
L1848408-01B	Vial Na2S2O3 preserved split	A	NA		2.4	Y	Absent		624.1(3)
L1848408-01C	Vial Na2S2O3 preserved split	A	NA		2.4	Y	Absent		624.1(3)
L1848408-01D	Split Amber 1000ml Na2S2O3	A	N/A	N/A	2.4	Y	Absent		625.1(7)
L1848408-01E	Split Amber 1000ml Na2S2O3	A	N/A	N/A	2.4	Y	Absent		625.1(7)
L1848408-02A	Vial Na2S2O3 preserved	A	NA		2.4	Y	Absent		COMP-VOA()
L1848408-02B	Vial Na2S2O3 preserved	A	NA		2.4	Y	Absent		COMP-VOA()
L1848408-02C	Vial Na2S2O3 preserved	A	NA		2.4	Y	Absent		COMP-VOA()
L1848408-02D	Vial Na2S2O3 preserved	A	NA		2.4	Y	Absent		COMP-VOA()
L1848408-02E	Vial Na2S2O3 preserved	A	NA		2.4	Y	Absent		COMP-VOA()
L1848408-02F	Vial Na2S2O3 preserved	A	NA		2.4	Y	Absent		COMP-VOA()
L1848408-02G	Vial Na2S2O3 preserved	A	NA		2.4	Y	Absent		COMP-VOA()
L1848408-02H	Vial Na2S2O3 preserved	A	NA		2.4	Y	Absent		COMP-VOA()
L1848408-02I	Vial Na2S2O3 preserved	A	NA		2.4	Y	Absent		COMP-VOA()
L1848408-02J	Vial Na2S2O3 preserved	A	NA		2.4	Y	Absent		COMP-VOA()
L1848408-02K	Vial Na2S2O3 preserved	A	NA		2.4	Y	Absent		COMP-VOA()
L1848408-02L	Vial Na2S2O3 preserved	A	NA		2.4	Y	Absent		COMP-VOA()
L1848408-02M	Amber 1000ml Na2S2O3	A	7	7	2.4	Y	Absent		COMP-W()
L1848408-02N	Amber 1000ml Na2S2O3	A	7	7	2.4	Y	Absent		COMP-W()
L1848408-02O	Amber 1000ml Na2S2O3	A	7	7	2.4	Y	Absent		COMP-W()
L1848408-02P	Amber 1000ml Na2S2O3	A	7	7	2.4	Y	Absent		COMP-W()
L1848408-02Q	Amber 1000ml Na2S2O3	A	7	7	2.4	Y	Absent		COMP-W()
L1848408-02R	Amber 1000ml Na2S2O3	A	7	7	2.4	Y	Absent		COMP-W()

*Values in parentheses indicate holding time in days

Project Name: RIVERBEND S/A BSA
Project Number: T0322-018-500

Lab Number: L1848408
Report Date: 12/05/18

Container Information

Container ID	*Container Type*	*Cooler*	*Initial pH*	*Final pH*	*Temp deg C*	*Pres*	*Seal*	*Frozen Date/Time*	*Analysis(*)*
L1848408-02S	Amber 1000ml Na2S2O3	A	7	7	2.4	Y	Absent		COMP-W()
L1848408-02T	Amber 1000ml Na2S2O3	A	7	7	2.4	Y	Absent		COMP-W()
L1848408-03A	Plastic 60ml unpreserved	A	7	7	2.4	Y	Absent		PH-4500(.01)
L1848408-03B	Plastic 250ml NaOH preserved	A	>12	>12	2.4	Y	Absent		TCN-4500(14)
L1848408-04A	Vial Na2S2O3 preserved	A	NA		2.4	Y	Absent		624.1(3)
L1848408-04B	Vial Na2S2O3 preserved	A	NA		2.4	Y	Absent		624.1(3)

*Values in parentheses indicate holding time in days

Project Name:	RIVERBEND S/A BSA	**Lab Number:**	L1848408
Project Number:	T0322-018-500	**Report Date:**	12/05/18

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample¿s toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Report Format: DU Report with 'J' Qualifiers

Project Name:	RIVERBEND S/A BSA	**Lab Number:**	L1848408
Project Number:	T0322-018-500	**Report Date:**	12/05/18

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	RIVERBEND S/A BSA	**Lab Number:**	L1848408
Project Number:	T0322-018-500	**Report Date:**	12/05/18

REFERENCES

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

128 Method 624.1: Purgeables by GC/MS, EPA 821-R-16-008, December 2016.

129 Method 625.1: Base/Neutrals and Acids by GC/MS, EPA 821-R-16-007, December 2016.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581, 8 Walkup Dr., TEL: 508-898-9220, FAX: 508-898-9193
Mansfield, MA 02048, 320 Forbes Blvd, TEL: 508-822-9300, FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 11/28/18

ALPHA Job #: L1848408

Project Information

Project Name: Riverbend S/A BSA
Project Location: Buffalo, NY
Project #: T0322-018-500
(Use Project name as Project #) ☐
Project Manager: ~~Candace Fox~~ Brock Greene
ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Client Information

Client: Benchmark Environmental
Address: 2558 Hamburg Turnpike, Ste300
Buffalo, NY 14218
Phone: 716-856-0599
Fax: BGreene@Turnkeyllc.com
Email: ~~bhann@turnkeyllc.com~~

Deliverables

☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information

☑ Same as Client Info
PO #

Regulatory Requirement

☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other: NA

These samples have been previously analyzed by Alpha ☒

Other project specific requirements/comments:

Please specify Metals or TAL.

Sample Filtration: ☐ Done ☐ Lab to do
Preservation: ☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	624	625	TCN	pH					Sample Specific Comments	Total Bottles
48408 -01/02	Process Effluent - Grab 1	11-27-18	0830	Water	CEH	x	x							Lab to composite 1-4	5
↓	Process Effluent - Grab 2	11-27-18	1230	Water	CEH	x	x							Lab to composite 1-4	5
↓	Process Effluent - Grab 3	11-27-18	1700	Water	CEH	x	x							Lab to composite 1-4	5
↓	Process Effluent - Grab 4	11-28-18	0700	Water	CEH	x	x							Lab to composite 1-4	5
03	Process Effluent	11-28-18	0900	Water	CEH			x	x						2
04	Trip Blank	11-28-18		Water		x									2
					Container Type	V	A	P	P						
					Preservative	H	H	E	A						

Preservative Code: A = None, B = HCl, C = HNO_3, D = H_2SO_4, E = NaOH, F = MeOH, G = $NaHSO_4$, H = $Na_2S_2O_3$, K/E = Zn Ac/NaOH, O = Other

Container Code: P = Plastic, A = Amber Glass, V = Vial, G = Glass, B = Bacteria Cup, C = Cube, O = Other, E = Encore, D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	11-28-18 / 0945	[signature] AAL	11/28/18 1148
[signature] AAL	11/28/18 [illegible]	[signature] AL	11/28/18 2123

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS.

Form No: 01-25 (rev. 30-Sept-2013)

ATTACHMENT 3

FLOW METER CALIBRATION DATA

Northeast Metrology Corp.

4490 Broadway
Depew, NY 14043
P: 716-827-3770 F: 716-827-3775
e-mail: nem@nemcal.com

Calibration Certificate

www.nemcal.com

Company:	RIVERBEND	**Certificate #:**	1208314
Address:	192 BARAGA STREET BUFFALO, NY 14210	**Calibration Date:**	1/3/2018
		PO/Acct:	
Contact:	BROCK GREENE	**Page:**	1 of 2
Department:		**Visual Condition:**	Good
		Date Received:	

Gage Desc:	Flow Transmitter / Sensor	**Control #:**	SFRB#80210142061
Manufacturer:	George Fischer Signet	**Model:**	8550 / 515
Location:		**Serial #:**	80210142061

Parameters:

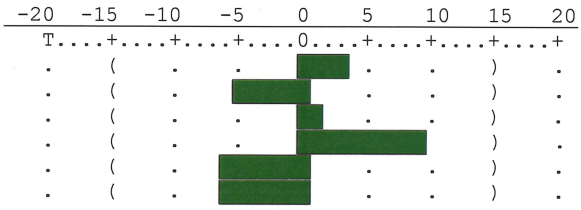
Units - GPM
Gas Type - N/A
Liguid Type -

Repairs:

+ / - Tolerances: 2.000% / 2.000%
Graph Scale: +0.100000

GPM

Nominal	Actual	Deviation	
+75.100000	+75.440000	+0.340000	
+75.100000	+74.560000	-0.540000	
+75.100000	+75.170000	+0.070000	
+75.100000	+75.980000	+0.880000	
+75.100000	+74.480000	-0.620000	Avg. of 10
+75.100000	+74.500000	-0.600000	Timed



Comments:

CALIBRATION PERFORMED ONSITE AT AMBIENT CONDITIONS: 59°F & 33% R.H.

SCHEDULE 80 PVC 3" O.D. I.D.=2.9"

TOTAL GALLONS (2018): 10226872
PERM GALLONS: 41912177
TOTAL GALLONS RESET AT END OF TESTING

mA OUTPUT: 0 = 3.99mA MAX = 16.09

Procedure:

110176:E-Flowme.gdf (Manual 1000)

We certify the equipment used for this calibration is traceable to NIST through one or more of the following numbers:
NEM-6009 Ultrasonic Flowmeter
1331545884, 1329407628 Cal Date / Due Date: 12/16/2016 -- 12/16/2018

Gage Status: PASS **Due Date: 1/3/2019**

We certify the equipment used for this calibration is traceable to the International System of Units (SI) via standards traceable to NIST or other National Metrology Institutes (NMI).
Dimensional calibration performed in NEM laboratory @ 68°F (±2.0°F) : (20°C (±1°C)) & relative humidity less than 45%.

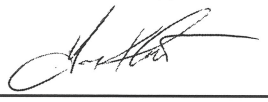
Northeast Metrology Corp.

4490 Broadway
Depew, NY 14043
P: 716-827-3770 F: 716-827-3775
e-mail: nem@nemcal.com

Calibration Certificate

Page #:	2 of 2	**Certificate #:**	1208314
Gage Desc:	Flow Transmitter / Sensor	**Control #:**	SFRB#80210142061
Manufacturer:	George Fischer Signet	**Model:**	8550 / 515
Location:		**Serial #:**	80210142061

Electronic & Mechanical calibration performed at ambient conditions.
All pertinent data and readings calibrated are as found & as left unless otherwise denoted in comments.
Calibration performed in accordance with ANSI/NCSL Z540-1-1994 unless otherwise denoted in comments.
Gage Blocks meet or exceed Federal Specifications for the grade and accuracy applicable to these items in accordance with GGG-G-15C.
Calibration meets or exceeds 4 : 1 ratio, with the exception of gage blocks stated above.
Measurement Uncertainties are based on approximately a 95% confidence level, using a coverage factor of k=2.
Measurement Uncertainty is taken into account in determining gage status (pass/fail).
Calibration is performed on premises at Northeast Metrology Corp. unless otherwise denoted in comments.
The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under federal statutes.
This certificate shall not be reproduced except in full, with the written approval of the originating metrology laboratory.

Certified By: GK m Signature: 

This certificate is not valid unless all 2 page(s) are present.
Results of this certificate relate only to the item mentioned in document header.
END OF DOCUMENT

APPENDIX C

COMPREHENSIVE ANNUAL GROUNDWATER MONITORING REPORT

January 15, 2019

Mr. Maurice Moore
New York State Dept. of Environmental Conservation
Division of Environmental Remediation
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: Riverbend Site (formerly Steelfields) (V00619)
2018 Comprehensive Annual Groundwater Monitoring Report

Dear Mr. Moore:

On behalf of our client Fort Schuyler Management Corporation (FSMC), TurnKey Environmental Restoration, LLC, has prepared this comprehensive letter report to transmit the results of the September 2018 groundwater monitoring event conducted at Area I (Former Steel Plant Parcel), Area II (Former Coke Plant Parcel), and Area III (Former Warehouse Parcel) of FSMC's RiverBend Site, Buffalo, NY (see Figure 1). This letter report also includes the results of the June and November 2018 Oxygen Release Compound (ORC) monitoring events for Area III. The current groundwater monitoring event was performed September 21 & 22, 2018, the Area III first semi-annual ORC monitoring event was performed June 4-7, 2018, and the Area III second semi-annual ORC event November 26-29, 2018.

The LTGWM network wells are summarized in Table 1 and shown on Figure 2. A summary of field activities and findings for all three areas of the Site are presented below.

PURPOSE

The activities performed during the current site-wide groundwater monitoring event were performed in general accordance with the following documents:

- Work Plan for Long-Term Groundwater Monitoring (LTGWM) of Area I (revised September 2002);
- *Work Plan for LTGWM of Areas II and III* (October 2007) submitted as Attachment A4 of Appendix HH of the Final Engineering Report for Areas II and III (May 2008);
- May 5, 2008 Response to NYSDEC comment letter regarding Area III Site Management Plan (comment/responses 8, 9, and 10);
- May 5, 2008 Response to NYSDEC comment letter regarding Areas II and III Final Engineering Report (comment/responses 19 and 22);
- *ORC Maintenance and Monitoring Manual* (March 2008) submitted as Attachment A5 of Appendix HH of the Final Engineering Report for Areas II and III (May 2008); and
- May 5, 2011 NYSDEC Response to Modification Request Letter.

This annual report includes a tabular and/or graphical assessment and detailed discussion of groundwater quality trends on an Area by Area basis. Groundwater flow patterns, however, are

discussed on a site-wide basis. Groundwater samples were analyzed for the modified parameter list identified by Area in Table 2.

GROUNDWATER ELEVATIONS & FLOW

Depth to water measurements and calculated groundwater elevations measured from 10 wells and two Buffalo River staff gauges in Area I, 17 wells in Area II, and 5 monitoring wells in Area III on August 29, 2018 are summarized in Table 3. The Lake Erie elevation, presented in the table for reference, was obtained from the National Oceanic and Atmospheric Administration/National Ocean Service's (NOAA/NOS) Center for Operational Oceanographic Products and Services (CO-OPS) web page; Great Lakes Water Level Data Inventory for station number 9063020 Buffalo, Lake Erie, New York.

An isopotential map, presented as Figure 3, was prepared using data from the August 29, 2018 groundwater elevations, the collection system as-built invert elevations, and the soil flushing system discharge invert elevations. The baseline isopotential map prepared by Geomatrix from the June 1998 groundwater elevations representing groundwater flow conditions at the Site prior to the Area II Containment Cell construction is presented as Figure 4 for contrast. Comparison of the August 2018 and June 1998 maps indicate that the groundwater mound located between Areas I and II observed in June 1998 has been significantly reduced and pushed north; replaced instead by a groundwater "sink" created by the groundwater collection system. The groundwater depression observed in June 1998 around the terminal basin is also no longer present due to the discontinuation (in January 2009) of storm water management activities at the Site in that area (i.e., pumping from the basin to the sanitary sewer). Further examination of Figure 3 indicates significant lowering of the water table, between 2 to 4 feet, in the vicinity of the groundwater collection trench as generally predicted in the selected remedial approach groundwater flow model (Geomatrix, December 1998) (see Attachment 1).

Additional evaluation of the containment cell area shows five artificial groundwater mounds resulting from the soil flushing system; a remedial measure designed to remediate subsurface soils beneath five areas of concern identified during the Voluntary Cleanup. In general, the flushing system partially diverts groundwater, on a continuous basis, from pump stations PS-1, PS-2, and PS-3 to perforated distribution pipes in the system (shown on Figure 3). These mounds create a unique, yet effective, method to remediate residual impacts in those areas.

The groundwater flow, as depicted on Figure 3, also shows that potentially impacted groundwater from outside the containment cell to the north on the Former August Feine and Norfolk Southern parcels is being drawn back toward the collection system, as predicted by pre-design MODFLOW® modeling. Aside from the significant hydraulic capture of the groundwater collection system in Area II, Site groundwater generally flows north toward the Buffalo River, with minor westerly and southerly components.

GROUNDWATER COLLECTION SYSTEM EVALUATION

An evaluation of the slurry wall effectiveness included comparing groundwater elevations from a single well pair identified as A2-MW-19 and A2-MW-7. Monitoring well A2-MW-19 is located outside the Containment Cell and well A2-MW-7 is located within the Cell as shown on Figure

3. A groundwater elevation comparison of this well pair indicates that groundwater outside the Cell is greater than three quarters of a foot higher (0.76-feet) than inside the Cell and an inward hydraulic gradient toward the Cell has been established, as predicted by the pre-design MODFLOW® model.

Based upon the results of this evaluation and the isopotential map discussed earlier, the groundwater collection/containment system appears to be effectively collecting impacted groundwater and controlling groundwater migration within the Area II Containment Cell as well as to the east and north of the Containment Cell. Routine system monitoring and maintenance in conjunction with long-term groundwater monitoring of Areas I and II, as scheduled, is expected to be sufficient to continue to assess the long-term effectiveness of the containment cell.

AREA I FIELD ACTIVITIES & FINDINGS

Table 2 presents the Area I field-measured and laboratory analyzed parameters, the results of which are summarized in Table 4. Compounds detected above method detection limits are shown on the table with their associated concentration and NYSDEC Groundwater Quality Standard (NYSDEC TOGS 1.1.1, Ambient Water Quality Standards and Guidance Values, June 1998) for comparison. Concentrations exceeding NYSDEC Groundwater Quality Standards (GWQSs) are shaded. With the exception of total arsenic at well A1-MW-6, each analyzed compound was either reported as non-detect or at concentrations well below their respective GWQSs. A discussion of the moving average trend analysis for Area I groundwater is presented later in this report.

During the current monitoring event, field personnel also performed visual immiscible layer surveillance and observed no non-aqueous phase liquid (NAPL) in any of the Area I wells listed in Table 1, except well A1-MW-6. Excluding the initial well development and sampling events, A1-MW-6 has been monitored since the February 2005 installation of the PetroTrap™ free product passive skimmer. From 2005 through 2017, nearly 13 gallons of product has been removed (see Table 5). Based on the VOC analytical results of well A1-MW-6, it is apparent that the NAPL is highly weathered and is having little effect on the groundwater quality at that location. In accordance with the LTGWM Plan, all recovered product is temporarily stored in a 55-gallon drum within secondary containment and staged within the on-site Groundwater Pre-Treatment System (GWPTS) building until a licensed used oil service contractor picks up the recovered product for proper recycling or disposal.

As indicated in Table 5, seasonal increases in product thickness and recovery are apparent during the typical late Fall and early Spring rainy periods. Based upon the progress to date and the marginal effects on groundwater quality at this location, LNAPL monitoring of A1-MW-6 should continue in accordance with the Area I LTGWM Plan on a monthly basis. However, due to a significant decline in the volume of recoverable product, we have replaced the PetroTrap™ free product passive skimmer with an absorbent sock that will be changed out during the monthly checks.

AREA II FIELD ACTIVITIES & FINDINGS

Table 2 presents the Area II field-measured and laboratory analyzed parameters, the results of which are summarized in Table 6. Compounds detected above method detection limits are shown on the table with their associated concentration and GWQS for comparison. With the exception of benzene and total lead at well A2-MW-16, each analyzed compound was either reported as non-detect or at concentration well below their respective GWQSs. A discussion of the moving average trend analysis for Area II groundwater is presented later in this report.

AREA III FIELD ACTIVITIES & FINDINGS

Table 2 presents the Area III field-measured and laboratory analyzed parameters, the results of which are summarized in Table 7. Compounds detected above method detection limits are shown on the table with their associated concentration and GWQS for comparison. With the exception of pH at wells A3-MW-7 and A3-MW-10, benzene at wells A3-MW-7 and A3-MW-10, and total cyanide at wells A3-MW-3, each analyzed compound was either reported as non-detect or at concentrations well below their respective GWQSs. A discussion of the moving average trend analysis for Area III groundwater is presented later in this report.

In accordance with NYSDEC-approved procedures, ORC wells A3-ORC-1 through A3-ORC-11 are to be purged until 10 well volumes are removed or to dryness for four consecutive days, whichever occurs first, in order to obtain representative groundwater samples within the ORC area of Area III. A summary of the June and November 2018 Area III ORC semi-annual event field-measured parameters and analytical results are presented in Tables 8 and 9, respectively. Compounds detected above method detection limits are shown on these tables with their associated concentration and GWQS for comparison; concentrations exceeding the GWQSs are shaded. Upon examination of Tables 8 and 9, benzene exceeded the GWQS for nine of the eleven wells monitored during the June event and nine of the eleven wells during the November event. Field measurement pH was determined to be outside the GWQS range at all eleven wells during the June and November events.

The ORC "socks," suspended in each of the ORC wells are to be replaced when depleted. During the current monitoring event, ORC socks were removed and checked; none of which required replacement.

MOVING AVERAGE TREND ANALYSIS (MATA)

In general accordance with the LTGWM Plan for each Area of the Site, any parameter exceeding the GWQS for two consecutive events is to be statistically evaluated for all monitoring wells listed in Table 1. Statistical evaluation for each parameter of interest involves the averaging of four sequential monitoring event concentrations and plotting the moving average. The Area by Area 4-event moving average trend analysis (MATA) as well as the concentration versus time plots for those monitored locations and parameters requiring tracking (as defined above) are presented in Attachment 2 and summarized in Table 10. Evaluation of the MATA plots (Attachment 2) and table (Table 10) indicate the following:

- The concentration versus time and MATA plots for the field measured pH at wells A2-MW-16, A3-MW-7, and A3-MW-10 indicate a long-term neutral trend (neither increasing

nor decreasing) since monitoring began at each location. The concentration versus time and MATA plot for the field measured pH at well A1-MW-5 and A3-MW-9 indicates a recent decreasing trend.

- The MATA plot for benzene at wells A3-MW-7, A3-MW-9, and A3-MW-10 indicates a continued decreasing trend approaching the GWQS at each location. The MATA plot for benzene at A2-MW-16 indicates a neutral trend (neither increasing nor decreasing) however the concentration versus time plot recently indicates a rebound above the GWQS.
- The MATA plot for n-propylbenzene at well A1-MW-6 initially indicated an increasing 4-event moving average trend (August 2007 to May 2010); however, the trend was being influenced by unusually high concentration reported in August 2007 of more than 30 times historic values (i.e., outlier). The concentration versus time plot shown on the same charts, however, indicates not only a return to historic range (i.e., decreasing trend), but a decreasing trend with concentrations approaching (and occasionally falling below) the GWQS from April 2008 through the current period.
- Although the concentration versus time plot for total arsenic at well A1-MW-6 reveals a wide concentration range from a high 0.29 mg/L in December 2006 to 0.0455 mg/L in June 2015, the MATA plot indicates a decreasing trend form August 2007 through July 2017 with a slight rebound for the current sampling event.
- The MATA plot for cyanide at well A3-MW-3 initially indicated an increasing 4-event moving average trend from May 2010 to June 2012; however, the trend was being influenced by an unusually high cyanide concentration reported in June 2012 of more than four times historic values (i.e., outlier). The concentration versus time plot shown on the same chart, indicates a moderating return to historic ranges (i.e., decreasing trend). As such, the MATA plot for cyanide indicates a decreasing trend from June 2012 through June 2016 followed by a recent rebounding trend. Overall the MATA plot indicates a neutral trend for cyanide at A3-MW-3.
- Although the concentration versus time plot for cyanide at well A3-MW-7 reveals a wide concentration range from a high 0.267 mg/L in June 2014 to 0.01 in June 2013, the MATA plot indicates a neutral trend (neither increasing nor decreasing) below the GWQS since May 2010. Historically, cyanide concentrations at this location have been reported below the GWQS (between May 2009 and June 2013), followed by two events slightly above the GWQS (June 2014 and July 2015), followed by a concentration below the GWQS for one event (June 2016), followed by one event slightly above GWQS (July 2017) returning to below the GWQS during the current reporting period.

NYSDEC EQuIS Deliverables

On November 13 and December 17, 2018, TurnKey submitted the analytical data in Electronic Data Deliverable (EDD) format for the current groundwater and ORC monitoring events to the NYSDEC on behalf of FSMC to satisfy the NYSDEC EQuIS submittal requirement. TurnKey received confirmation on November 15 and December 26, 2018 the submittals were successfully uploaded, and the data is available for use within the NYSDEC system.

PLANNED ACTIVITIES

A schedule summarizing the past, present, and future monitoring events is presented in Table 1. The NYSDEC-approved bi-annual analytical program is presented in Table 2. The next planned comprehensive monitoring event for Areas I, II, and III will be performed Summer 2019. Area III ORC well monitoring is tentatively scheduled for June and November 2019 (every six months).

Please contact us if you have any questions.

Sincerely,
TurnKey Environmental Restoration, LLC

Brock Greene
Project Environmental Scientist

Enclosures

ec: Kenneth Gelting (FSMC)
Paul Werthman (TurnKey)

File: 0322-018-502

TABLES

TABLE 1

GROUNDWATER MONITORING NETWORK AND SAMPLE FREQUENCY [1,2,3]

Comprehensive Groundwater Monitoring Report
Riverbend Site (V00619-9)
Buffalo, New York

Well Designation	Monitoring Event																						
	Year 1		Year 2		Year 3		Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23
	1 SA	2SA	1 SA	2SA	Annual		Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual
AREA I																										
A1-MW-1	Sep-04	Sep-05	Dec-06		Aug-07		Apr-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A1-MW-2	Sep-04	Sep-05	Dec-06		Aug-07		Apr-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A1-MW-3	Sep-04	Sep-05	Dec-06		Aug-07		Apr-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A1-MW-4 [4]	Sep-04	Sep-05	May-06	Dec-06	Aug-07		Apr-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16											
A1-MW-4R [4]																Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A1-MW-5	Sep-04	Sep-05	May-06	Dec-06	Aug-07		Apr-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A1-MW-6	Sep-04	Sep-05	May-06	Dec-06	Aug-07		Apr-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A1-MW-7 [5]	*water level only*									May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A1-MW-8	Sep-04	Sep-05	May-06	Dec-06	Aug-07		Apr-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14													
A1-MW-8R [6]															Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A1-MW-9	Sep-04	Sep-05	May-06	Dec-06	Aug-07		Apr-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A1-MW-10 [6]															Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A1-MW-M2 [4]	Sep-04	Sep-05	Dec-06		Aug-07		Apr-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16											
A1-MW-11 [4]																Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A1-P-4	Sep-04	Sep-05	Dec-06		Aug-07		Apr-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14													
AREA II																										
A2-MW-3					Jul-07	Dec-07	Apr-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A2-MW-4R					Jul-07	Dec-07	Apr-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A2-MW-5					Jul-07	Dec-07	Apr-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A2-MW-6	*water level only*																									
A2-MW-7	*water level only*																									
A2-MW-10						Dec-07	Apr-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A2-MW-12	*water level only*																									
A2-MW-13					Jul-07	Dec-07	Apr-08		May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A2-MW-16					Jul-07	Dec-07	Apr-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A2-MW-17					Jul-07	Dec-07	Apr-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A2-MW-18	*water level only*																									
A2-MW-19	*water level only*																									
A2-MW-20	*water level only*																									
AREA III																										
A3-MW-3							Oct-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A3-MW-6							Oct-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A3-MW-7					Jul-07	Dec-07	Apr-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A3-MW-9							Oct-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●
A3-MW-10							Oct-08	May-09	May-10	May-11	Jun-12	Jun-13	Jun-14	Jul-15	Jun-16	Jul-17	**Sep-18**	●	●	●	●	●	●	●	●	●

TABLE 1

GROUNDWATER MONITORING NETWORK AND SAMPLE FREQUENCY [1,2,3]

Comprehensive Groundwater Monitoring Report
Riverbend Site (V00619-9)
Buffalo, New York

Well Designation	Year 3		Year 4		Year 5		Year 6		Year 7		Year 8		Year 9		Year 10		Year 11		Year 12		Year 13		Year 14		Year 15	
	1 SA	2SA	1 SA	2SA	1 SA	2SA	1 SA	2SA	1 SA	2SA	1 SA	2SA	1 SA	2SA	1 SA	2SA	1 SA	2SA	1 SA	2SA	1 SA	2SA	1 SA	2SA	1 SA	2SA
AREA III - ORC wells (every 6 months)																										
A3-ORC-1	Jul-07	Dec-07	Apr-08	Nov-08	May-09	Nov-09	May-10	Nov-10	May-11	Nov-11	Jun-12	Nov-12	Jun-13	Dec-13	Jun-14	Dec-14	Jul-15	Nov-15	Jun-16	Dec-16	Jul-17	Dec-17	**Jun-18**	**Nov-18**	●	●
A3-ORC-2	Jul-07	Dec-07	Apr-08	Nov-08	May-09	Nov-09	May-10	Nov-10	May-11	Nov-11	Jun-12	Nov-12	Jun-13	Dec-13	Jun-14	Dec-14	Jul-15	Nov-15	Jun-16	Dec-16	Jul-17	Dec-17	**Jun-18**	**Nov-18**	●	●
A3-ORC-3	Jul-07	Dec-07	Apr-08	Nov-08	May-09	Nov-09	May-10	Nov-10	May-11	Nov-11	Jun-12	Nov-12	Jun-13	Dec-13	Jun-14	Dec-14	Jul-15	Nov-15	Jun-16	Dec-16	Jul-17	Dec-17	**Jun-18**	**Nov-18**	●	●
A3-ORC-4	Jul-07	Dec-07	Apr-08	Nov-08	May-09	Nov-09	May-10	Nov-10	May-11	Nov-11	Jun-12	Nov-12	Jun-13	Dec-13	Jun-14	Dec-14	Jul-15	Nov-15	Jun-16	Dec-16	Jul-17	Dec-17	**Jun-18**	**Nov-18**	●	●
A3-ORC-5	Jul-07	Dec-07	Apr-08	Nov-08	May-09	Nov-09	May-10	Nov-10	May-11	Nov-11	Jun-12	Nov-12	Jun-13	Dec-13	Jun-14	Dec-14	Jul-15	Nov-15	Jun-16	Dec-16	Jul-17	Dec-17	**Jun-18**	**Nov-18**	●	●
A3-ORC-6	Jul-07	Dec-07	Apr-08	Nov-08	May-09	Nov-09	May-10	Nov-10	May-11	Nov-11	Jun-12	Nov-12	Jun-13	Dec-13	Jun-14	Dec-14	Jul-15	Nov-15	Jun-16	Dec-16	Jul-17	Dec-17	**Jun-18**	**Nov-18**	●	●
A3-ORC-7	Jul-07	Dec-07	Apr-08	Nov-08	May-09	Nov-09	May-10	Nov-10	May-11	Nov-11	Jun-12	Nov-12	Jun-13	Dec-13	Jun-14	Dec-14	Jul-15	Nov-15	Jun-16	Dec-16	Jul-17	Dec-17	**Jun-18**	**Nov-18**	●	●
A3-ORC-8	Jul-07	Dec-07	Apr-08	Nov-08	May-09	Nov-09	May-10	Nov-10	May-11	Nov-11	Jun-12	Nov-12	Jun-13	Dec-13	Jun-14	Dec-14	Jul-15	Nov-15	Jun-16	Dec-16	Jul-17	Dec-17	**Jun-18**	**Nov-18**	●	●
A3-ORC-9	Jul-07	Dec-07	Apr-08	Nov-08	May-09	Nov-09	May-10	Nov-10	May-11	Nov-11	Jun-12	Nov-12	Jun-13	Dec-13	Jun-14	Dec-14	Jul-15	Nov-15	Jun-16	Dec-16	Jul-17	Dec-17	**Jun-18**	**Nov-18**	●	●
A3-ORC-10	Jul-07	Dec-07	Apr-08	Nov-08	May-09	Nov-09	May-10	Nov-10	May-11	Nov-11	Jun-12	Nov-12	Jun-13	Dec-13	Jun-14	Dec-14	Jul-15	Nov-15	Jun-16	Dec-16	Jul-17	Dec-17	**Jun-18**	**Nov-18**	●	●
A3-ORC-11	Jul-07	Dec-07	Apr-08	Nov-08	May-09	Nov-09	May-10	Nov-10	May-11	Nov-11	Jun-12	Nov-12	Jun-13	Dec-13	Jun-14	Dec-14	Jul-15	Nov-15	Jun-16	Dec-16	Jul-17	Dec-17	**Jun-18**	**Nov-18**	●	●

Notes:

1. Per the LTGWM Plan, newly installed monitoring wells require four consecutive semi-annual groundwater monitoring events, then annually thereafter.
2. Per the LTGWM Plan, existing monitoring wells require two consecutive semi-annual groundwater monitoring events, then annually thereafter.
3. The groundwater sampling plan was modified to a bi-annual frequency (see Table 2) as per NYSDEC approval letter dated May 5, 2011.
4. Due to redevelopment activities in Area I, wells A1-MW-4 and A1-MW-M2 were replaced on July 11-12, 2017 with wells A1-MW-4R and A1-MW-11, respectively.
5. Per a NYSDEC request, A1-MW-7 was sampled for VOCs, arsenic, chromiuim, and lead in 2011 only; water level and field parameters annually thereafter.
6. Well A1-MW-8 and piezometer A1-P-4 were replaced June 6-7, 2016 with wells A1-MW-8R and A1-MW-10, respectively.

Legend:

Sep-18 = current monitoring event

= monitoring well was decomissioned to make way for redevelopment.

● = future monitoring event

TABLE 2

ANALYTICAL PROGRAM SUMMARY [1]

Comprehensive Groundwater Monitoring Report
Riverbend Site (V00619-9)
Buffalo, New York

Well Designation	Monitoring Year															
	2011, 2013, 2015, 2017, 2019								2012, 2014, 2016, 2018, 2020							
	Field	CP-51 VOCs	8260 Benzene Only	As	Cr	Pb	CN	Alk.	Field	CP-51 VOCs	8260 Benzene Only	As	Cr	Pb	CN	Alk.
AREA I																
A1-MW-1	x	x		x					x			x				
A1-MW-2	x	x							x							
A1-MW-3	x	x							x							
A1-MW-4R [2]	x	x							x							
A1-MW-5	x	x							x	x						
A1-MW-6	x	x		x					x	x		x				
A1-MW-7 [3]	x								x							
AI-MW-8R [4]	x	x		x					x			x				
A1-MW-9	x	x							x							
A1-MW-10 [4]	x	x			x				x				x			
A1-MW-11 [2]	x	x							x							
AREA II																
A2-MW-3	x	x							x							
A2-MW-4R	x	x							x							
A2-MW-5	x	x							x							
A2-MW-6	*water level only*								*water level only*							
A2-MW-7	*water level only*								*water level only*							
A2-MW-10R	x	x							x							
A2-MW-12	*water level only*								*water level only*							
A2-MW-13	x	x							x							
A2-MW-16	x	x		x	x	x			x	x		x	x	x		
A2-MW-17	x	x							x	x						
A2-MW-18	*water level only*								*water level only*							
A2-MW-19	*water level only*								*water level only*							
A2-MW-20	*water level only*								*water level only*							
AREA III																
A3-MW-3	x	x		x			x		x	x		x			x	
A3-MW-6	x	x		x			x		x	x		x			x	
A3-MW-7	x	x					x		x	x					x	
A3-MW-9	x	x				x			x	x				x		
A3-MW-10	x	x					x		x	x					x	
AREA III - ORC wells (every 6 months)																
A3-ORC-1	x		x					x	x		x					x
A3-ORC-2	x		x					x	x		x					x
A3-ORC-3	x		x					x	x		x					x
A3-ORC-4	x		x					x	x		x					x
A3-ORC-5	x		x					x	x		x					x
A3-ORC-6	x		x					x	x		x					x
A3-ORC-7	x		x					x	x		x					x
A3-ORC-8	x		x					x	x		x					x
A3-ORC-9	x		x					x	x		x					x
A3-ORC-10	x		x					x	x		x					x
A3-ORC-11	x		x					x	x		x					x
Totals:	**34**	**22**	**11**	**6**	**2**	**2**	**4**	**11**	**34**	**9**	**11**	**6**	**2**	**2**	**4**	**11**

Notes:

1. Modified analytical plan as per NYSDEC approval letter dated May 5, 2011.
2. Due to redevelopment activities in Area I, wells A1-MW-4 and A1-MW-M2 were replaced on July 11-12, 2017 with wells A1-MW-4R and A1-MW-11, respectively.
3. Per a NYSDEC request, A1-MW-7 was sampled for VOCs, arsenic, chromiuim, and lead in 2011; water level and field parameters annually thereafter.
4. Well A1-MW-8 and piezometer A1-P-4 were replaced June 6-7, 2016 with wells A1-MW-8R and A1-MW-10, respectively.

TABLE 3

GROUNDWATER ELEVATION MEASUREMENTS
August 29, 2018

2018 Comprehensive Groundwater Monitoring Report
Riverbend Site (V00619-9)
Buffalo, New York

Monitoring Location	TOR Elevation (fmsl)	DTP (fbTOR)	DTW (fbTOR)	Product Thickness (feet)	Groundwater Elevation (fmsl)	Corrected Groundwater Elevation [1] (fmsl)
Area I Monitoring Wells [2]						***11 Wells***
A1-MW-1	586.38	NP	12.55	NP	573.83	573.83
A1-MW-2	586.39	NP	13.12	NP	573.27	573.27
A1-MW-3	591.98	NP	12.14	NP	579.84	579.84
A1-MW-4R	588.76	NP	14.14	NP	574.62	574.62
A1-MW-5	590.48	NP	8.04	NP	582.44	582.44
A1-MW-6	591.60	17.09	17.14	0.05	574.46	574.50
A1-MW-7	586.97	NP	11.97	NP	575.00	575.00
A1-MW-8R	589.83	NP	14.84	NP	574.99	574.99
A1-MW-9	588.05	NP	12.73	NP	575.32	575.32
A1-MW-10	589.73	NP	15.02	NP	574.71	574.71
A1-MW-11	591.73	NP	11.94	NP	579.79	579.79
Area II Monitoring Wells [2]						***17 Wells***
A2-MW-3	588.95	NP	14.32	NP	574.63	574.63
A2-MW-4R	588.59	NP	13.93	NP	574.66	574.66
A2-MW-5	587.25	NP	12.14	NP	575.11	575.11
A2-MW-6	592.69	NP	10.52	NP	582.17	582.17
A2-MW-7	602.05	NP	DRY	NP	< 580.8	< 580.8
A2-MW-10R	593.59	NP	11.02	NP	582.57	582.57
A2-MW-11	590.11	NP	10.64	NP	579.47	579.47
A2-MW-12	604.12	NP	17.62	NP	586.50	586.50
A2-MW-13	597.90	NP	14.12	NP	583.78	583.78
A2-MW-16	597.62	NP	14.91	NP	582.71	582.71
A2-MW-17	596.94	NP	14.50	NP	582.44	582.44
A2-MW-18	587.64	NA	NA	NA	NA	NA
A2-MW-19	592.02	NP	10.46	NP	581.56	581.56
A2-MW-20	591.54	NP	7.16	NP	584.38	584.38
A2-PW-1	601.76	NP	18.10	NP	583.66	583.66
A2-PW-2	603.91	NP	20.25	NP	583.66	583.66
A2-PW-3	603.88	NP	19.74	NP	584.14	584.14
Area III Monitoring Wells [2]						***5 Wells***
A3-MW-3	585.40	NP	4.90	NP	580.50	580.50
A3-MW-6	585.70	NP	8.97	NP	576.73	576.73
A3-MW-7	586.39	NP	8.56	NP	577.83	577.83
A3-MW-9	597.61	NP	15.87	NP	581.74	581.74
A3-MW-10	585.41	NP	7.84	NP	577.57	577.57

TABLE 3

GROUNDWATER ELEVATION MEASUREMENTS
August 29, 2018

2018 Comprehensive Groundwater Monitoring Report
Riverbend Site (V00619-9)
Buffalo, New York

Monitoring Location	TOR Elevation (fmsl)	DTP (fbTOR)	DTW (fbTOR)	Product Thickness (feet)	Groundwater Elevation (fmsl)	Corrected Groundwater Elevation [1] (fmsl)
Area III ORC Monitoring Wells [2]						***11 Wells***
A3-ORC-1	587.17	NP	NM	NP	NM	NM
A3-ORC-2	587.35	NP	NM	NP	NM	NM
A3-ORC-3	587.55	NP	NM	NP	NM	NM
A3-ORC-4	587.14	NP	NM	NP	NM	NM
A3-ORC-5	587.77	NP	NM	NP	NM	NM
A3-ORC-6	587.53	NP	NM	NP	NM	NM
A3-ORC-7	587.16	NP	NM	NP	NM	NM
A3-ORC-8	587.51	NP	NM	NP	NM	NM
A3-ORC-9	585.15	NP	NM	NP	NM	NM
A3-ORC-10	587.60	NP	NM	NP	NM	NM
A3-ORC-11	587.70	NP	NM	NP	NM	NM
Surface Water [4,5]						***3 Locations***
SG-01 (downstream)	585.07	NP	10.36	NP	574.71	574.71
SG-02 (upstream)	590.72	NP	16.09	NP	574.63	574.63
Lake Erie	NA	NA	NA	NA	NA	573.0

Notes:
1. Groundwater elevations are corrected if free product (i.e., LNAPL) is present.
2. Monitoring well reference point elevations (i.e., top of riser for wells and sheet pile for staff gauges) have been surveyed at various times by TurnKey or Steelfields.
4. Staff Gauge (SG) locations are located at the upstream and downstream locations indicated on Figure 1. Each staff gauge was surveyed on January 3, 2008 by Niagara Boundary personnel.
5. Source: NOAA Tides & Currents Web Page- Buffalo, NY Station ID 9063020; average daily elevation of Buffalo, New York Station #9063020.

Definitions:
DTP = depth to product, if present
DTW = detph to water
fmsl = feet above mean sea level
fbTOR = feet below top of riser
NP = no measureable product was present
NM = not measured for this event
R = replacement well
TOR = top of riser

TURNKEY ENVIRONMENTAL RESTORATION, LLC

TABLE 4

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS [1,2]
Area I: Former Steel Plant Parcel

Comprehensive Groundwater Monitoring Report
Riverbend Site (V00619-9)
Buffalo, New York

Parameter	Monitoring Location and Date of Sample Collection											GWQS/GV [1]
	A1-MW-1	A1-MW-2	A1-MW-3	A1-MW-4R	A1-MW-5	A1-MW-6 [3]	A1-MW-7	A1-MW-8R	A1-MW-9	A1-MW-10	A1-MW-11	
	09/22/18	09/22/18	09/22/18	09/22/18	09/22/18	09/22/18	09/22/18	09/22/18	09/22/18	09/22/18	09/22/18	
Field Measurements (units as indicated) [2]												
pH (units)	7.69	NS	NS	NS	8.12	6.74	NS	6.27	NS	6.15	NS	**6.5 - 8.5**
Temperature (degrees C)	16.2	NS	NS	NS	16.4	15.2	NS	12.7	NS	13.0	NS	**NA**
Specific Conductance (uS)	1270	NS	NS	NS	1246	1327	NS	1301.0	NS	1327.0	NS	**NA**
Turbidity (NTU)	8.0	NS	NS	NS	6.00	20.0	NS	40.0	NS	41.0	NS	**NA**
Dissolved Oxygen (mg/L)	8.39	NS	NS	NS	8.57	7.27	NS	8.70	NS	8.69	NS	**NA**
Eh (mV)	-20	NS	NS	NS	-73	-107	NS	-22	NS	-25	NS	**NA**
Visual Observation	Clear	NS	NS	NS	Clear/sheen	Clear/Sheen	NS	Clear	NS	Clear	NS	**NA**
Olfactory Observation	No odor	NS	NS	NS	No odor	Sl Petroleum	NS	Sl Petroleum	NS	Sl Petroleum	NS	**NA**
Volatile Organic Compounds (ug/L)												
Benzene	NS	NS	NS	NS	ND	ND	NS	NS	NS	NS	NS	**1**
n-Butylbenzene	NS	NS	NS	NS	ND	3.9	NS	NS	NS	NS	NS	**5**
sec-Butylbenzene	NS	NS	NS	NS	ND	2.8	NS	NS	NS	NS	NS	**5**
tert-Butylbenzene	NS	NS	NS	NS	ND	ND	NS	NS	NS	NS	NS	**5**
p-Cymene (4-Isopropyltoluene)	NS	NS	NS	NS	ND	ND	NS	NS	NS	NS	NS	**5**
Ethylbenzene	NS	NS	NS	NS	ND	ND	NS	NS	NS	NS	NS	**5**
Isopropylbenzene	NS	NS	NS	NS	ND	1.7 J	NS	NS	NS	NS	NS	**5**
Methyl tert butyl ether	NS	NS	NS	NS	ND	ND	NS	NS	NS	NS	NS	**10**
n-Propylbenzene	NS	NS	NS	NS	ND	2.9	NS	NS	NS	NS	NS	**5**
Toluene	NS	NS	NS	NS	ND	ND	NS	NS	NS	NS	NS	**5**
1,2,4-Trimethylbenzene	NS	NS	NS	NS	ND	ND	NS	NS	NS	NS	NS	**5**
1,3,5-Trimethylbenzene	NS	NS	NS	NS	ND	ND	NS	NS	NS	NS	NS	**5**
Xylenes, Total	NS	NS	NS	NS	ND	0.94 J	NS	NS	NS	NS	NS	**5**
Total VOCs	***0.0***	***0.0***	***0.0***	***0.0***	***0.0***	***12.24***	***0.0***	***0.0***	***0.0***	***0.0***	***0.0***	**10**
Total Inorganics (mg/L)												
Total Arsenic	0.001	NS	NS	NS	NS	**0.138**	NS	0.0164	NS	NS	NS	**0.025**
Total Chromium	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.00055 J	NS	**0.05**

Notes:

1. NYSDEC Class "GA" Groundwater Quality Standard/Guidance Value 6NYCRR Part 703 (effective June 1998)
2. Field measurements were collected immediately before and after groundwater sample collection.
3. Light non-aqueous phase liquid (LNAPL) detected.
4. " NA " = Not Applicable, a GWQS/GV has not been established for this parameter.
5. " ND " = the sample location was analyzed for this parameter, but reported at a concentration less than the method detection limit.
6. " -- " = compound is not analyzed at this location

Color Code:

= Shaded values represent exceedances of the NYSDEC Class "GA" Groundwater Quality Standard/Guidance Value.

TABLE 5

SUMMARY OF LNAPL THICKNESS / REMOVAL IN A1-MW-6
Area I: Former Republic (LTV) Steel Plant Parcel

Comprehensive Groundwater Monitoring Report
Riverbend Site (V00619-9)
Buffalo, New York

Date	Days Since Last Visit	LNAPL Measurement			Quantity Removed [1] (oz.)	Height of Petro-Trap (fbTOR)	Comments
		Top (fbTOR)	Bottom (fbTOR)	Thickness (feet)			
09/21/04	0	18.10	18.40	0.30	NA	--	well development
09/23/04	2	18.10	18.40	0.30	NA	--	Fall 2004 groundwater monitoring event
02/01/05	**131**	**17.50**	**20.85**	**3.35**	**NA**	**16.0**	**installed PetroTrap passive skimmer**
02/08/05	7	17.94	19.89	1.95	16	16.0	first LNAPL removal from Petro Trap
02/11/05	3	17.89	19.75	1.86	20	16.0	ok
02/15/05	4	18.10	18.52	0.42	20	16.0	ok
02/18/05	3	17.59	17.91	0.32	12	16.0	ok
02/25/05	7	18.02	18.51	0.49	2	16.0	Petro Trap tubing was tangled
03/04/05	7	18.13	18.63	0.50	6	16.0	Petro Trap tubing was tangled
03/18/05	14	18.00	18.74	0.74	3.5	16.0	checked Petro Trap for leaks, none located
04/08/05	21	17.37	18.20	0.83	24	15.0	ok; raised Petro Trap approximately 1-foot
04/14/05	6	17.65	17.81	0.16	22	15.0	ok
04/28/05	14	16.23	16.25	0.02	25.6	15.0	ok
05/17/05	19	17.62	17.80	0.18	14	14.0	~14 oz. of water in Petro Trap; raised approx. 1-foot
06/21/05	35	17.68	17.71	0.03	14	14.0	ok
07/18/05	27	18.03	18.11	0.08	12	15.0	ok, lowered approx. 1-foot
09/09/05	53	18.34	18.42	0.08	8	15.0	ok
09/20/05	11	18.33	18.38	0.05	22	15.0	ok; Area I LTGWM Event
10/31/05	41	18.50	18.52	0.02	24	15.0	ok
11/23/05	23	18.95	18.96	0.01	22	15.0	ok
12/28/05	35	19.35	19.36	0.01	22	15.0	ok
01/30/06	33	18.43	18.44	0.01	24	15.0	ok
02/27/06	28	18.38	19.06	0.68	24	15.0	ok
03/28/06	29	18.44	19.31	0.87	24	15.0	ok
04/27/06	30	18.39	19.17	0.78	24	15.0	ok
05/18/06	21	18.41	19.05	0.64	8	15.0	ok; Area I LTGWM Event
06/30/06	43	17.82	18.35	0.53	8	15.0	ok
07/31/06	31	17.95	18.64	0.69	16	15.0	ok
12/01/06	123	19.41	21.65	2.24	16	15.0	ok; Area I LTGWM Event, removed oily water.
06/30/07	211	17.98	20.51	2.53	8	15.0	ok
07/31/07	31	18.31	21.40	3.09	22	14.0	~12oz. Water in Trap; raised PetroTrap approx. 1'
08/22/07	22	18.50	20.11	1.61	4	14.0	ok
09/29/07	38	18.86	21.72	2.86	4	14.0	ok
10/30/07	31	19.10	21.04	1.94	3	14.0	ok
11/28/07	29	19.47	20.52	1.05	2	14.0	checked Petro Trap for leaks, none located
12/28/07	30	18.93	20.42	1.49	14	15.0	~12oz. Water in Trap; lowered PetroTrap approx. 1'
08/12/08	228	17.98	19.60	1.62	30	15.0	ok, bailed down product removed ~1.0 gal. TK took over monito
09/10/08	29	18.61	20.10	1.49	4	15.0	Needs to be ajusted and claened
10/08/08	28	18.90	20.46	1.56	8	17.5	Lowered trap to 17.41 fbgs, cleaned off filter.
11/11/08	34	18.79	21.00	2.21	11	17.5	ok
12/16/08	35	18.64	20.86	2.22	1	17.5	ok
01/07/09	22	18.28	21.20	2.92	1	17.0	raised trap to 17.0 fbgs
02/11/09	35	18.52	21.22	2.70	64	17.0	17 oz in trap, bailed 47 oz
03/10/09	27	17.50	19.63	2.13	2	17.0	ok
04/01/09	22	18.12	19.08	0.96	48	17.0	Bailed ~40oz, ~8 was removed from trap
05/06/09	35	17.61	19.81	2.20	3	17.0	ok
05/12/09	6	17.65	17.96	0.31	18	17.0	ok
06/02/09	21	17.64	18.17	0.53	2	17.0	ok
07/08/09	36	17.96	18.17	0.21	20	17.0	ok
08/06/09	29	18.05	19.75	1.70	1.5	17.0	ok
09/01/09	26	18.11	19.20	1.09	3	17.0	ok
10/06/09	35	17.84	19.62	1.78	6	17.0	ok
11/03/09	28	17.82	19.11	1.29	10	17.0	ok
12/01/09	28	18.07	18.50	0.43	20	17.0	ok
01/13/10	43	18.22	18.75	0.53	5	17.0	ok
02/10/10	28	18.03	19.00	0.97	4	17.0	ok
03/05/10	23	19.31	20.81	1.50	3	17.0	ok
04/06/10	32	18.61	20.41	1.80	4	17.0	ok
05/05/10	29	18.41	20.20	1.79	1	17.0	ok
05/17/10	12	18.03	20.42	2.39	1	17.0	ok
06/04/10	18	17.83	19.88	2.05	3	17.0	ok
07/14/10	40	17.95	19.70	1.75	16	17.0	ok
08/06/10	23	18.00	20.17	2.17	1	17.0	ok
09/10/10	35	18.64	20.90	2.26	2	17.0	ok
10/15/10	35	18.82	20.61	1.79	2	17.0	ok

TABLE 5

SUMMARY OF LNAPL THICKNESS / REMOVAL IN A1-MW-6
Area I: Former Republic (LTV) Steel Plant Parcel

Comprehensive Groundwater Monitoring Report
Riverbend Site (V00619-9)
Buffalo, New York

Date	Days Since Last Visit	LNAPL Measurement			Quantity Removed [1] (oz.)	Height of Petro-Trap (fbTOR)	Comments
		Top (fbTOR)	Bottom (fbTOR)	Thickness (feet)			
11/02/10	18	19.25	19.60	0.35	24	17.0	Less 0.5oz was removed via petro trap, bailed 24oz
12/14/10	42	18.30	19.48	1.18	1	17.0	ok
01/20/11	37	19.03	20.34	1.31	10	17.0	ok
02/18/11	29	18.84	19.83	0.99	18	17.0	Bailed ~15 oz of product
04/27/11	68	17.15	18.00	0.85	1	17.0	TOP was over petro-trap.
05/23/11	26	17.82	19.91	2.09	16	17.0	4 oz. removed from trap, bailed 12 oz.
06/07/11	15	16.47	20.28	3.81	21	17.0	7 oz. removed from trap, bailed 14 oz.
07/13/11	36	17.64	20.12	2.48	14	17.0	5 oz. removed from trap, bailed 9 oz
08/10/11	28	18.32	20.09	1.77	5	17.0	3 oz. removed from trap, bailed 2 oz
09/29/11	50	17.28	18.40	1.12	22	17.0	2 oz. removed from trap, bailed 22 oz.
10/17/11	18	16.93	18.65	1.72	13	17.0	ok
11/29/11	43	18.66	19.84	1.18	26	17.0	ok
12/22/11	23	19.24	19.77	0.53	19	17.0	ok
01/12/12	21	18.14	19.67	1.53	21	17.0	ok
02/06/12	25	18.79	19.84	1.05	18	17.0	ok
03/08/12	31	17.38	21.18	3.80	21	17.0	ok
04/05/12	28	19.16	20.33	1.17	22	17.0	ok
05/03/12	28	18.71	20.03	1.32	24	17.0	ok
06/19/12	47	18.20	19.61	1.41	24	17.0	1 oz. removed from trap, bailed 23 oz.
07/25/12	36	18.69	20.42	1.73	28	17.0	ok
12/21/12	149	18.97	19.30	0.33	5	17.0	1 oz. removed from trap, bailed 4 oz.
01/17/13	27	19.25	20.40	1.15	30	17.0	2 oz. removed from trap, bailed 28 oz.
02/25/13	39	19.18	20.45	1.27	19	16.5	1 oz. removed from trap, bailed 18 oz.
03/28/13	31	18.95	19.30	0.35	13	17.0	2 oz. removed from trap, bailed 11 oz.
04/29/13	32	18.45	19.40	0.95	25	17.0	3 oz. removed from trap, bailed 22 oz.
05/24/13	25	19.05	19.63	0.58	18	17.0	3 oz. removed from trap, bailed 15 oz.
06/17/13	24	18.13	18.43	0.30	8	16.0	0 oz. removed from trap, bailed 8 oz.
07/18/13	31	17.67	18.05	0.38	13	16.0	2 oz. removed from trap, bailed 11 oz.
08/19/13	32	18.02	18.75	0.73	26	16.0	4 oz. removed from trap, bailed 22 oz.
09/13/13	25	18.85	19.07	0.22	11	16.5	0 oz. removed from trap, bailed 11 oz.
10/17/13	34	18.55	18.85	0.30	7.5	16.0	0.5 oz. removed from trap, bailed 7 oz.
11/06/13	20	18.62	19.15	0.53	22	16.0	3 oz. removed from trap, bailed 19 oz.
12/03/13	27	19.33	19.69	0.36	19	16.0	3 oz. removed from trap, bailed 16 oz.
01/13/14	41	18.34	19.30	0.96	21	17.0	2 oz. removed from trap, bailed 19 oz.
02/20/14	38	19.62	20.21	0.59	20	17.0	4 oz. removed from trap, bailed 16 oz.
03/27/14	35	18.91	19.67	0.76	28.5	17.0	5.5 oz. removed from trap, bailed 23 oz.
04/17/14	21	18.17	19.06	0.89	20	17.0	1 oz. removed from trap, bailed 19 oz.
05/27/14	40	17.52	17.87	0.35	9	17.0	3 oz. removed from trap, bailed 6 oz.
06/20/14	24	17.83	18.19	0.36	5	17.0	0.5 oz. removed from trap, bailed 4.5 oz.
07/10/14	20	18.24	18.28	0.04	2	17.0	0.0 oz. removed from trap, bailed 2 oz.
August through October: RiverBend Area I sold, no measurements obtained							
11/06/14	119	18.71	19.18	0.47	23	17.0	2.0 oz. removed from trap, bailed 21 oz.
12/11/14	35	17.64	18.55	0.91	32	17.0	4.0 oz. removed from trap, bailed 28 oz.
01/29/15	49	18.67	20.82	2.15	35	17.0	1.0 oz. removed from trap, bailed 34 oz.
02/27/15	29	19.22	19.25	0.03	2	17.0	0.0 oz. removed from trap, bailed 2 oz.
03/23/15	24	19.18	19.24	0.06	4	17.0	1.0 oz. removed from trap, bailed 3 oz.
04/27/15	35	18.92	19.22	0.30	12	17.0	2.0 oz. removed from trap, bailed 10 oz.
05/26/15	29	19.50	19.57	0.07	6	17.0	1.0 oz. removed from trap, bailed 5 oz.
06/10/15	15	18.32	18.35	0.03	3	17.0	1.0 oz. removed from trap, bailed 2 oz.
07/24/15	44	17.60	17.62	0.02	1.5	17.0	0.5 oz. removed from trap, bailed 1 oz.
08/31/15	38	18.10	18.12	0.02	2	17.0	0.5 oz. removed from trap, bailed 1.5 oz.
09/30/15	30	18.60	18.64	0.04	6	17.0	1.0 oz. removed from trap, bailed 5 oz.
10/30/15	30	18.28	18.36	0.08	6.5	17.0	0.5 oz. removed from trap, bailed 6 oz.
12/27/15	58	18.14	18.20	0.06	4.5	17.0	0.5 oz. removed from trap, bailed 1.5 oz.
01/28/16	32	18.12	18.14	0.02	1.5	17.0	0.0 oz. removed from trap, bailed 1.5 oz.
02/27/16	30	18.10	18.13	0.03	2	17.0	0.5 oz. removed from trap, bailed 1.5 oz.
03/27/16	29	17.51	17.54	0.03	4.5	17.0	0.0 oz. removed from trap, bailed 4.5 oz.
04/25/16	29	17.38	17.42	0.04	2.5	17.0	0.5 oz. removed from trap, bailed 2 oz.
05/31/16	36	17.29	17.31	0.02	2	17.0	0.5 oz. removed from trap, bailed 1.5 oz.
06/28/16	28	17.21	17.29	0.08	2	17.0	0.5 oz. removed from trap, bailed 1 oz.
07/29/16	31	17.16	17.18	0.02	1	17.0	0.5 oz. removed from trap, bailed 0.5 oz.
08/30/16	32	17.70	17.72	0.02	2.5	17.0	1.0 oz. removed from trap, bailed 1.5 oz.

TABLE 5

SUMMARY OF LNAPL THICKNESS / REMOVAL IN A1-MW-6
Area I: Former Republic (LTV) Steel Plant Parcel

Comprehensive Groundwater Monitoring Report
Riverbend Site (V00619-9)
Buffalo, New York

Date	Days Since Last Visit	LNAPL Measurement			Quantity Removed [1] (oz.)	Height of Petro-Trap (fbTOR)	Comments
		Top (fbTOR)	Bottom (fbTOR)	Thickness (feet)			
09/30/16	31	18.35	18.36	0.01	1	17.0	0.0 oz. removed from trap, bailed 1 oz.
12/30/16	91	18.03	18.26	0.23	30.5	17.0	0.5 oz. removed from trap, bailed 30 oz.
02/24/17	56	18.70	18.75	0.05	0.5	NA	Removed petro-trap and installed absorbant sock
03/31/17	428	18.72	18.72	0.00	0	NA	
04/27/17	27	17.01	17.01	0.00	0	NA	
05/22/17	25	15.90	15.90	0.00	0	NA	
06/30/17	39	16.25	16.25	0.00	0	NA	
07/11/17	11	16.20	16.20	0.00	0	NA	
08/10/17	41	16.50	16.80	0.30	4.2	NA	
09/29/17	80	16.15	16.15	0.00	0	NA	
10/27/17	28	18.00	18.13	0.13	1.2	NA	
11/30/17	34	15.58	15.65	0.07	0.5	NA	
12/19/17	19	16.86	16.92	0.06	4.8	NA	
01/18/18	30	17.25	17.38	0.13	38	NA	Oil and water mixture
02/08/18	21	17.91	18.11	0.20	64	NA	Oil and water mixture
03/07/18	27	16.94	17.05	0.11	32	NA	Oil and water mixture
04/24/18	48	16.09	16.53	0.44	51	NA	Oil and water mixture
05/16/18	22	16.40	16.41	0.01	13	NA	Oil and water mixture
06/20/18	35	16.49	16.52	0.03	13	NA	Oil and water mixture
07/18/18	28	16.48	16.67	0.19	6	NA	Oil and water mixture
08/28/18	41	16.80	16.81	0.01	6	NA	Oil and water mixture
09/19/18	22	17.21	17.90	0.69	102	NA	Oil and water mixture
10/25/18	36	17.82	17.87	0.05	13	NA	Oil and water mixture
11/30/18	36	18.01	18.10	0.09	26	NA	Oil and water mixture
12/18/18	18	17.14	17.17	0.03	64	NA	Oil and water mixture
Total Quantity Removed To Date:					**2081.7 oz.**	**or 16.26 gal.**	

Notes:
1. The PetroTrap canister used has a capacity of 25.6 oz. (0.2 gal).
2. Data from January 1, 2007 through July 31, 2008 was collected by EnSol, Inc.; data before and after this time has been collected by TurnKey Environmmental Restoration, LLC.

TURNKEY ENVIRONMENTAL RESTORATION, LLC

TABLE 6

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS [1,2]
Area II: Former Coke Plant Parcel

Comprehensive Groundwater Monitoring Report
Riverbend Site (V00619-9)
Buffalo, New York

Parameter	Monitoring Location and Date of Sample Collection							GWQS/GV [1]
	A2-MW-3	A2-MW-4R	A2-MW-5	A2-MW-10R	A2-MW-13	A2-MW-16	A2-MW-17	
	09/21/18	09/21/18	09/21/18	09/21/18	09/21/18	09/21/18	09/21/18	
Field Measurements (units as indicated) [2]								
pH (units)	NS	NS	NS	NS	NS	6.34	6.84	**6.5 - 8.5**
Temperature (degrees C)	NS	NS	NS	NS	NS	16.1	15.0	**NA**
Specific Conductance (uS)	NS	NS	NS	NS	NS	2674	2784	**NA**
Turbidity (NTU)	NS	NS	NS	NS	NS	6	3	**NA**
Dissolved Oxygen (mg/L)	NS	NS	NS	NS	NS	5.83	6.48	**NA**
Eh (mV)	NS	NS	NS	NS	NS	-110	-105	**NA**
Visual Observation	NS	NS	NS	NS	NS	Clear	Clear	**NA**
Olfactory Observation	NS	NS	NS	NS	NS	Sl Odor	Sl Odor	**NA**
Volatile Organic Compounds (ug/L)								
Benzene	NS	NS	NS	NS	NS	**3.8**	ND	**1**
n-Butylbenzene	NS	NS	NS	NS	NS	ND	ND	**5**
sec-Butylbenzene	NS	NS	NS	NS	NS	ND	ND	**5**
tert-Butylbenzene	NS	NS	NS	NS	NS	ND	ND	**5**
p-Cymene (4-Isopropyltoluene)	NS	NS	NS	NS	NS	ND	ND	**5**
Ethylbenzene	NS	NS	NS	NS	NS	ND	ND	**5**
Isopropylbenzene	NS	NS	NS	NS	NS	ND	ND	**5**
Methyl tert butyl ether	NS	NS	NS	NS	NS	ND	ND	**10**
n-Propylbenzene	NS	NS	NS	NS	NS	ND	ND	**5**
Toluene	NS	NS	NS	NS	NS	ND	ND	**5**
1,2,4-Trimethylbenzene	NS	NS	NS	NS	NS	ND	ND	**5**
1,3,5-Trimethylbenzene	NS	NS	NS	NS	NS	ND	ND	**5**
Xylenes, Total	NS	NS	NS	NS	NS	ND	ND	**5**
Total VOCs	**--**	**--**	**--**	**--**	**--**	***3.8***	***0***	**10**
Inorganics (mg/L)								
Total Arsenic	NS	NS	NS	NS	NS	0.00394	NS	**0.025**
Total Chromium	NS	NS	NS	NS	NS	0.01039	NS	**0.05**
Total Lead	NS	NS	NS	NS	NS	0.00862	NS	**0.025**

Notes:

1. NYSDEC Class "GA" Groundwater Quality Standard/Guidance Value 6NYCRR Part 703 (effective June 1998)
2. Field measurements were collected immediately before and after groundwater sample collection.
3. " NA " = Not Applicable, a GWQS/GV has not been established for this parameter.
4. " ND " = the sample location was analyzed for this parameter, but reported at a concentration less than the method detection limit.
5. " NS " = this monitoring location was not sampled for this parameter.
6. " -- " = This parameter was not analyzed.

Color Code:

= Shaded values represent exceedances of the NYSDEC Class "GA" Groundwater Quality Standard/Guidance Value.

TABLE 7

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS [1,2]
Area III: Former Warehouse Parcel

Comprehensive Groundwater Monitoring Report
Riverbend Site (V00619-9)
Buffalo, New York

Parameter	Monitoring Location and Date of Sample Collection					GWQS/GV [1]
	A3-MW-3	A3-MW-6	A3-MW-7	A3-MW-9	A3-MW-10	
	09/21/18	09/21/18	09/22/18	09/21/18	09/21/18	
Field Measurements (units as indicated) [2]						
pH (units)	6.93	7.12	9.55	7.62	**5.66**	**6.5 - 8.5**
Temperature (degrees C)	17.5	17.2	12.0	14.7	16.5	**NA**
Specific Conductance (uS)	2389.0	872	683.2	804	5079	**NA**
Turbidity (NTU)	24	6	3	6	9	**NA**
Dissolved Oxygen (mg/L)	5.92	5.84	7.56	6.43	6.43	**NA**
Eh (mV)	-34	-81	-200	-62	-1	**NA**
Visual Observation	Clear	Clear	Clear	Clear	Clear	**NA**
Olfactory Observation	Si Odor	No Odor	SI Odor	SI Odor	SI Odor	**NA**
Volatile Organic Compounds (ug/L)						
Benzene	ND	0.16 J	**14**	0.19 J	**1.6**	**1**
n-Butylbenzene	ND	ND	ND	ND	ND	**5**
sec-Butylbenzene	ND	ND	ND	ND	ND	**5**
tert-Butylbenzene	ND	ND	ND	ND	ND	**5**
p-Cymene (4-Isopropyltoluene)	ND	ND	ND	ND	ND	**5**
Ethylbenzene	ND	ND	ND	ND	ND	**5**
Isopropylbenzene	ND	ND	ND	ND	1.4 J	**5**
Methyl tert butyl ether	ND	ND	ND	ND	ND	**10**
n-Propylbenzene	ND	ND	ND	ND	ND	**5**
Toluene	ND	ND	ND	ND	ND	**5**
1,2,4-Trimethylbenzene	ND	ND	0.7 J	ND	ND	**5**
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	**5**
Xylenes, Total	ND	ND	ND	ND	ND	**5**
Total VOCs	***0***	***0.16***	***14.7***	***0.19***	***3***	**10**
Inorganics (mg/L)						
Total Arsenic	0.02158	0.00841	-	-	-	**0.025**
Total Lead	-	-	-	0.00257	-	**0.025**
Wet Chemistry (mg/L)						
Cyanide	**10.6**	0.028	0.108	-	0.164	**0.2**

Notes:

1. NYSDEC Class "GA" Groundwater Quality Standard/Guidance Value 6NYCRR Part 703 (effective June 1998)
2. Field measurements were collected immediately before and after groundwater sample collection.
4. "-" Analysis was not performed for this parameter.
5. " J " = Estimated Value
6. " NA " = Not Applicable, a GWQS/GV has not been established for this parameter.
7. " ND " = the sample location was analyzed for this parameter, but reported at a concentration less than the method detection limit.

Color Code:

= Shaded values represent exceedances of the NYSDEC Class "GA" Groundwater Quality Standard/Guidance Value.

TURNKEY ENVIRONMENTAL RESTORATION, LLC

TABLE 8

SUMMARY OF JUNE 2018 ORC ANALYTICAL RESULTS [1,2,3]
Area III: Former Warehouse Parcel

Comprehensive Groundwater Monitoring Report
Riverbend Site (V00619-9)
Buffalo, New York

Parameter	Monitoring Location											GWQS [2]
	A3-ORC-1	A3-ORC-2	A3-ORC-3	A3-ORC-4	A3-ORC-5	A3-ORC-6	A3-ORC-7	A3-ORC-8	A3-ORC-9	A3-ORC-10	A3-ORC-11	
Field Measurements During Purge (units as shown) [1]												
Static Depth to Water (fbTOR)	4.44	4.48	4.40	4.09	4.72	4.61	5.41	5.31	2.73	5.37	5.14	--
Total Depth (fbTOR)	14.08	14.43	14.38	14.38	14.03	14.36	14.36	14.63	14.03	14.55	14.57	--
One Casing Volume (gallons)	6.29	6.50	6.52	6.72	6.08	6.37	5.84	6.09	7.38	5.99	6.16	--
Number of Volumes Purged	5.4	6.2	5.4	4.8	6.4	5.2	4.3	3.6	10.2	5.1	6.0	--
Sample Determination [3]	4-days	4-days	4-days	4-days	4-days	4-days	4-days	4-days	volume	4-days	4-days	--
Purge: Day 1 (06/04/18) (gallons)	8.5	10.0	9.0	8.0	10.0	9.0	7.0	6.0		7.0	9.0	--
Purge: Day 2 (06/05/18) (gallons)	9.5	10.0	9.5	8.0	10.0	8.0	6.0	6.0	30.0	9.0	9.0	--
Purge: Day 3 (06/06/18) (gallons)	8.0	10.0	8.5	8.0	9.5	8.0	6.0	5.0	30.0	7.5	9.0	--
Purge: Day 4 (06/07/18) (gallons)	8.0	10.0	8.5	8.0	9.5	8.0	6.0	5.0	15.0	7.0	10.0	
Sample Collection (date indicated)	06/07/18	06/07/18	06/07/18	06/07/18	06/07/18	06/07/18	06/07/18	06/07/18	06/07/18	06/07/18	06/07/18	--
Cumulative Volume Purged (gallons)	34.0	40.0	35.5	32.0	39.0	33.0	25.0	22.0	75.0	30.5	37.0	--
Field Measurements During Sample Collection (units as shown) [3]												
pH (units)	**11.51**	**5.17**	**4.79**	**6.14**	**5.61**	**4.57**	**5.70**	**4.65**	**3.36**	**6.05**	**6.12**	6.5 - 8.5
Temperature (deg C)	16.6	16.8	16.8	17.4	15.6	16.0	15.5	15.8	16.3	16.0	16.6	--
Specific Conductance (uS)	1,861	5,888	6,604	3,666	5,794	10,680	7,006	8,369	10,230	9,337	4,450	--
Turbidity (NTU)	42	38	34	104	65	80	133	144	109	158	107	--
Dissolved Oxygen (ppm)	0.25	2.18	1.88	2.07	2.05	1.61	2.37	1.73	1.57	1.03	1.78	--
ORP (mV)	-338	43	105	-- 68	8	126	-15	111	254	-- 77	-52	--
Visual Observation	clear	clear	clear	light brown	clear	clear	light brown	brown	brown	brown	brown	--
Volatile Organic Compounds (mg/L):												
Benzene	**1.7**	**3**	**1.7**	**0.0013**	**4.1**	**4.9**	**0.0037**	**13**	**86**	**8.9**	0.0006	0.001
Wet Chemistry (mg/L):												
Alkalinity	219	15.3	2.4	283	138	ND	207	ND	ND	810	364	--

Notes:

1. Field measurements were collected immediately before groundwater sample collection.
2. NYSDEC Class "GA" Groundwater Quality Standard/Guidance Value 6NYCRR Part 703 (effective June 1998).
3. NYSDEC requirement: purge 10 well volumes or to dryness for 4 consecutive days, then sample. "Volume" indicates that 10 well volumes were purged prior to sample collection and "4-days" indicates that the well was purged to
4. "B" = Analyte is found in the associated blank, as well as the sample.
5. " D " = Analysis performed at the secondary dilution factor.
6. " ND " indicates parameter was not detected above laboratory reporting limit and is reported herein as not detected (ND).

Color Code:

= Shaded values represent exceedances of the NYSDEC Class "GA" Groundwater Quality Standard/Guidance Value.

TURNKEY ENVIRONMENTAL RESTORATION, LLC

TABLE 9

SUMMARY OF NOVEMBER 2018 ORC ANALYTICAL RESULTS [1,2,3]
Area III: Former Warehouse Parcel

Comprehensive Groundwater Monitoring Report
Riverbend Site (V00619-9)
Buffalo, New York

Parameter	Monitoring Location											GWQS [2]
	A3-ORC-1	A3-ORC-2	A3-ORC-3	A3-ORC-4	A3-ORC-5	A3-ORC-6	A3-ORC-7	A3-ORC-8	A3-ORC-9	A3-ORC-10	A3-ORC-11	
Field Measurements During Purge (units as shown) [1]												
Static Depth to Water (fbTOR)	5.02	5.37	5.39	4.85	4.70	5.55	6.16	5.66	3.58	5.63	5.43	--
Total Depth (fbTOR)	14.08	14.43	14.38	14.38	14.03	14.36	14.36	14.63	14.03	14.55	14.57	--
One Casing Volume (gallons)	5.90	5.90	5.80	6.20	6.00	5.70	5.30	5.80	6.80	5.80	5.90	--
Number of Volumes Purged	5.8	6.9	6.2	5.8	6.7	5.6	5.1	3.9	10.3	5.5	5.2	--
Sample Determination [3]	4-days	4-days	4-days	4-days	4-days	4-days	4-days	4-days	volume	4-days	4-days	--
Purge: Day 1 (11/26/18) (gallons)	8.0	10.0	9.0	9.0	10.0	8.0	6.5	6.0		8.0	7.0	--
Purge: Day 2 (11/27/18) (gallons)	9.0	11.0	9.0	9.0	10.0	8.0	7.0	5.5		8.0	8.0	--
Purge: Day 3 (11/28/18) (gallons)	8.5	10.0	9.0	9.0	10.0	8.0	6.5	5.5	35.0	8.0	7.5	--
Purge: Day 4 (11/29/18) (gallons)	9.0	10.0	9.0	9.0	10.0	8.0	7.0	5.5	35.0	8.0	8.0	--
Sample Collection (date indicated)	11/29/18	11/29/18	11/29/18	11/29/18	11/29/18	11/29/18	11/29/18	11/29/18	11/29/18	11/29/18	11/29/18	--
Cumulative Volume Purged (gallons)	34.5	41.0	36.0	36.0	40.0	32.0	27.0	22.5	70.0	32.0	30.5	--
Field Measurements During Sample Collection (units as shown) [3]												
pH (units)	**11.61**	**5.47**	**5.01**	**6.03**	**5.80**	**4.72**	**5.58**	**5.48**	**3.33**	**6.30**	**6.27**	6.5 - 8.5
Temperature (deg C)	9.5	8.1	10.0	6.9	8.5	9.6	8.1	7.7	8.5	8.1	7.4	--
Specific Conductance (uS)	1863	6324	7499	3813	4680	11260	7669	7049	9632	3838	3802	--
Turbidity (NTU)	24.4	24.4	9.92	62.6	34.5	16.2	40.2	83	206	132	40.7	--
Dissolved Oxygen (ppm)	0.11	2.99	1.74	237	4.51	1.44	2.02	2.25	1.59	2.25	3.2	--
ORP (mV)	-286	-15	70	2	22	81	-19	1	244	-70	-78	--
Visual Observation	clear	clear	clear	light brown	clear	clear	clear	light brown	light brown	brown	clear	--
Volatile Organic Compounds (mg/L):												
Benzene	**1.3**	**3.2**	**2.7**	0.00049	**3.5**	**6.1**	**0.0044**	**10**	**95**	**0.31**	0.00046	0.001
Wet Chemistry (mg $CaCO_3$/L):												
Alkalinity	176	27.2	26.3	299	134	ND	135	130	ND	438	201	--

Notes:

1. Field measurements were collected immediately before groundwater sample collection.
2. NYSDEC Class "GA" Groundwater Quality Standard/Guidance Value 6NYCRR Part 703 (effective June 1998).
3. NYSDEC requirement: purge 10 well volumes or to dryness for 4 consecutive days, then sample. "volume" indicates that 10 well volumes were purged prior to sample collection and "4-days" indicates that the well was purged to dryness 4 consecutive days prior to sample collection.
4. " ND " indicates parameter was not detected above laboratory reporting limit and is reported herein as not detected (ND).

Color Code:

= Shaded values represent exceedances of the NYSDEC Class "GA" Groundwater Quality Standard/Guidance Value.

TABLE 10

AREA-BY-AREA MOVING AVERAGE TREND ANALYSIS (MATA) SUMMARY

Comprehensive Groundwater Monitoring Report
Riverbend Site (V00619-9)
Buffalo, New York

Location	No. of Data Pts.	MATA Pts.	Moving Average Trend [1] [increasing (I), decreasing (D), neutral (N)]						
			pH	Benzene	n-Butylbenzene	Isopropylbenzene	n-Propylbenzene	Total Arsenic	Cyanide
Area I Monitoring Wells									
A1-MW-1	**15**	**NA**	NA	NA	NA	NA	NA	NA	--
A1-MW-2	**14**	**NA**	NA	NA	NA	NA	NA	NA	--
A1-MW-3	**14**	**NA**	NA	NA	NA	NA	NA	NA	--
A1-MW-5	**16**	**13**	**D**	NA	NA	NA	NA	NA	--
A1-MW-6	**16**	**13**	NA	NA	NA	NA	**D**	**I**	--
A1-MW-7	**7**	**NA**	NA	NA	NA	NA	NA	NA	--
A1-MW-8R	**3**	**0**	NA	NA	NA	NA	NA	NA	--
A1-MW-9	**15**	**NA**	NA	NA	NA	NA	NA	NA	--
A1-MW-10	**3**	**0**	NA	NA	NA	NA	NA	NA	--
Area II Monitoring Wells									
A2-MW-3	**12**	**NA**	NA	NA	NA	NA	NA	NA	--
A2-MW-4R	**12**	**NA**	NA	NA	NA	NA	NA	NA	--
A2-MW-5	**12**	**NA**	NA	NA	NA	NA	NA	NA	--
A2-MW-10R	**11**	**NA**	NA	NA	NA	NA	NA	NA	--
A2-MW-13	**12**	**NA**	NA	NA	NA	NA	NA	NA	--
A2-MW-16	**13**	**10**	**N**	**I**	NA	NA	NA	NA	--
A2-MW-17	**13**	**NA**	NA	NA	NA	NA	NA	NA	--
Area III Monitoring Wells									
A3-MW-3	**10**	**7**	NA	NA	NA	NA	NA	NA	**N**
A3-MW-6	**11**	**NA**	NA	NA	NA	NA	NA	NA	NA
A3-MW-7	**13**	**10**	**N**	**D**	NA	NA	NA	NA	**N**
A3-MW-9	**12**	**9**	**D**	**D**	NA	NA	NA	NA	NA
A3-MW-10	**12**	**9**	**N**	**D**	NA	NA	NA	NA	NA

Notes:
1. In general accordance with the LTGWM Plan for each Area and based upon the groundwater results to date any parameter exceeding the groundwater quality standard for two (2) consecutive
2. " -- " = not analyzed for this parameter.
3. NA = indicates there have not been two consecutive exceedances of the GWQS/GV at this location and trending is "not applicable".

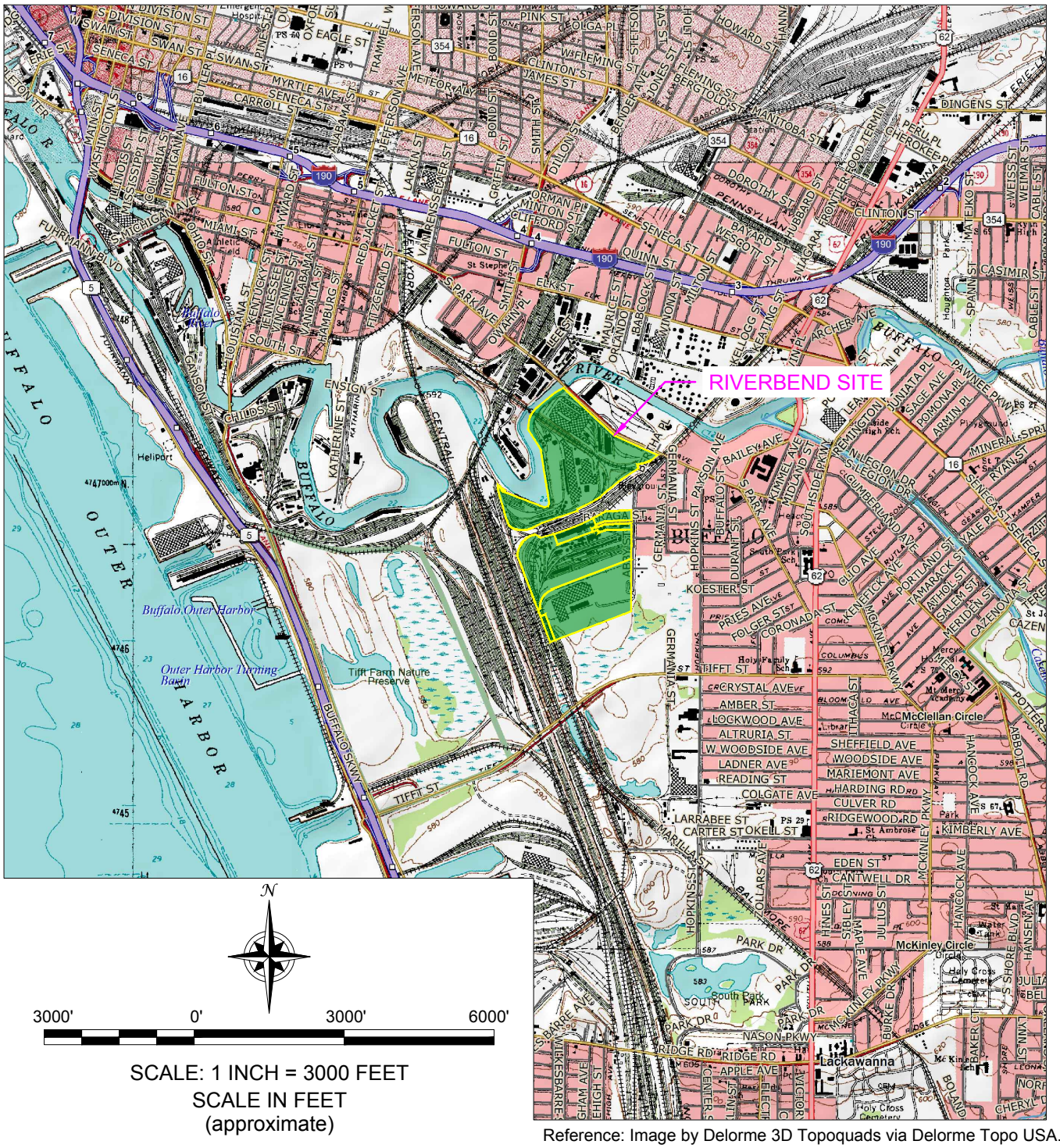
Color Code:

= Concentration versus time and 4-event moving average plots are provided in Attachment 2.

FIGURES

F:\CAD\TurnKey\Riverbend (formerly Steelfields)\LTGWM Program\2017 Comprehensive GWM Report\Figure 1; Site Vicinity and Location Map (2017).dwg

FIGURE 1



SCALE: 1 INCH = 3000 FEET
SCALE IN FEET
(approximate)

Reference: Image by Delorme 3D Topoquads via Delorme Topo USA.

TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

PROJECT NO.: 0322-016-500

DATE: MARCH 2018

DRAFTED BY: BCH-CMC

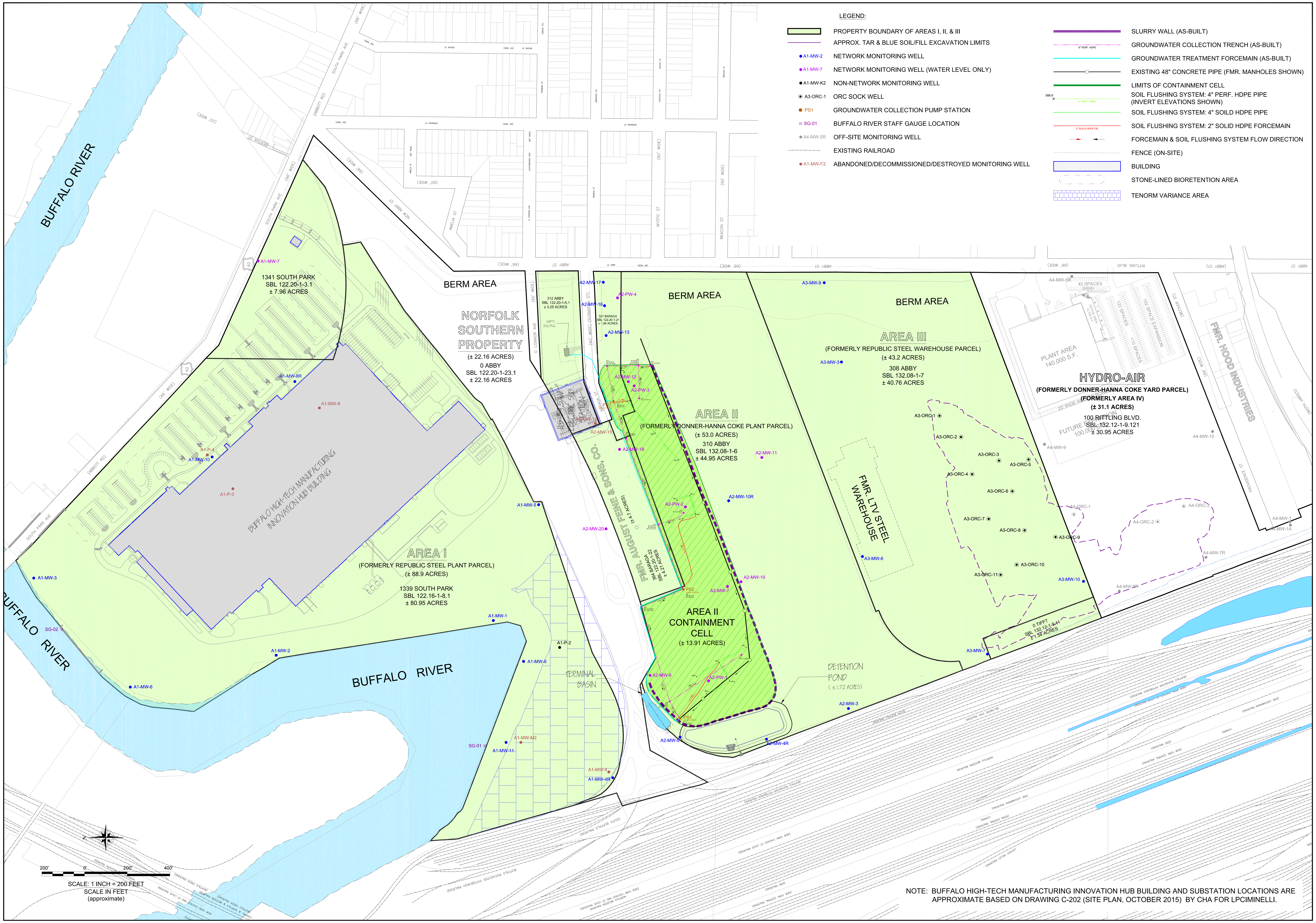
SITE VICINITY & LOCATION MAP

ANNUAL GROUNDWATER MONITORING REPORT

RIVERBEND SITE
BUFFALO, NEW YORK

PREPARED FOR

FORT SCHUYLER MANAGEMENT CORPORATION


LEGEND:
PROPERTY BOUNDARY OF AREAS I, II, & III
APPROX. TAR & BLUE SOIL/FILL EXCAVATION LIMITS
NETWORK MONITORING WELL
NETWORK MONITORING WELL (WATER LEVEL ONLY)
NON-NETWORK MONITORING WELL
ORC SOCK WELL
GROUNDWATER COLLECTION PUMP STATION
BUFFALO RIVER STAFF GAUGE LOCATION
OFF-SITE MONITORING WELL
EXISTING RAILROAD
ABANDONED/DECOMMISSIONED/DESTROYED MONITORING WELL
SLURRY WALL (AS-BUILT)
GROUNDWATER COLLECTION TRENCH (AS-BUILT)
GROUNDWATER TREATMENT FORCEMAIN (AS-BUILT)
EXISTING 48" CONCRETE PIPE (FMR. MANHOLES SHOWN)
LIMITS OF CONTAINMENT CELL
SOIL FLUSHING SYSTEM: 4" PERF. HDPE PIPE (INVERT ELEVATIONS SHOWN)
SOIL FLUSHING SYSTEM: 4" SOILD HDPE PIPE
SOIL FLUSHING SYSTEM: 2" SOLID HDPE FORCEMAIN
FORCEMAIN & SOIL FLUSHING SYSTEM FLOW DIRECTION
FENCE (ON-SITE)
BUILDING
STONE-LINED BIORETENTION AREA
TENORM VARIANCE AREA
BUFFALO RIVER
BERM AREA
1341 SOUTH PARK
SBL 122.20-1-3.1
± 7.96 ACRES
NORFOLK SOUTHERN PROPERTY
(± 22.16 ACRES)
0 ABBY
SBL 122.20-1-23.1
± 22.16 ACRES
BUFFALO HIGH-TECH MANUFACTURING INNOVATION HUB BUILDING
AREA I
(FORMERLY REPUBLIC STEEL PLANT PARCEL)
(± 88.9 ACRES)
1339 SOUTH PARK
SBL 122.16-1-8.1
± 80.95 ACRES
AREA II
(FORMERLY DONNER-HANNA COKE PLANT PARCEL)
(± 53.0 ACRES)
310 ABBY
SBL 132.08-1-6
± 44.95 ACRES
AREA II CONTAINMENT CELL
(± 13.91 ACRES)
AREA III
(FORMERLY REPUBLIC STEEL WAREHOUSE PARCEL)
(± 43.2 ACRES)
308 ABBY
SBL 132.08-1-7
± 40.76 ACRES
FMR. LTV STEEL WAREHOUSE
HYDRO-AIR
(FORMERLY DONNER-HANNA COKE YARD PARCEL)
(FORMERLY AREA IV)
(± 31.1 ACRES)
100 RITTLING BLVD.
SBL 132.12-1-9.121
± 30.95 ACRES
PLANT AREA
140,000 S.F.
FMR. HOOD INDUSTRIES
FMR. AUGUST FEINE & SONS, CO.
(± 4.7 ACRES)
TERMINAL BASIN
DETENTION POND
(± 1.72 ACRES)
312 ABBY
SBL 122.20-1-5.1
± 3.25 ACRES
0 TIFFT
SBL 132.12-1-9.1
± 1.34 ACRES
SOUTH PARK AVE
ABBY ST
RITTLING BLVD
MYSTIC ST
BEACON ST
O CONNOR AVE
A1-MW-7
A1-MW-8R
A1-MW-8
A1-P-4
A1-MW-10
A1-P-3
A1-MW-5
A1-MW-3
SG-02
A1-MW-2
A1-MW-6
A1-MW-1
A1-P-2
A1-MW-9
A1-MW-M2
SG-01
A1-MW-11
A1-MW-4
A1-MW-4R
A2-MW-17
A2-PW-4
A2-MW-16
A2-MW-13
A2-MW-12
A2-PW-3
A2-MW-15
A2-MW-18
A2-MW-11
A2-MW-10R
A2-PW-2
A2-MW-20
PS2
A2-MW-7
A2-MW-19
A2-MW-6
A2-PW-1
PS1
A2-MW-5
A2-MW-4R
A2-MW-3
A3-MW-9
A3-MW-3
A3-ORC-1
A3-ORC-2
A3-ORC-3
A3-ORC-5
A3-ORC-4
A3-ORC-6
A3-ORC-7
A3-ORC-8
A3-ORC-9
A3-ORC-10
A3-ORC-11
A3-MW-6
A3-MW-10
A3-MW-7
A4-MW-5R
A4-MW-9
A4-MW-10
A4-ORC-1
A4-ORC-2
A4-ORC-3
A4-MW-1
A4-MW-1A
A4-MW-7R
A4-MW-8R
200' 0' 200' 400'
SCALE: 1 INCH = 200 FEET
SCALE IN FEET
(approximate)

NOTE: BUFFALO HIGH-TECH MANUFACTURING INNOVATION HUB BUILDING AND SUBSTATION LOCATIONS ARE APPROXIMATE BASED ON DRAWING C-202 (SITE PLAN, OCTOBER 2015) BY CHA FOR LPCIMINELLI.

TurnKey Environmental Restoration, LLC
2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

JOB NO.: 0322-017-500

REVISIONS

NO.	BY	DATE	REMARKS

SEAL

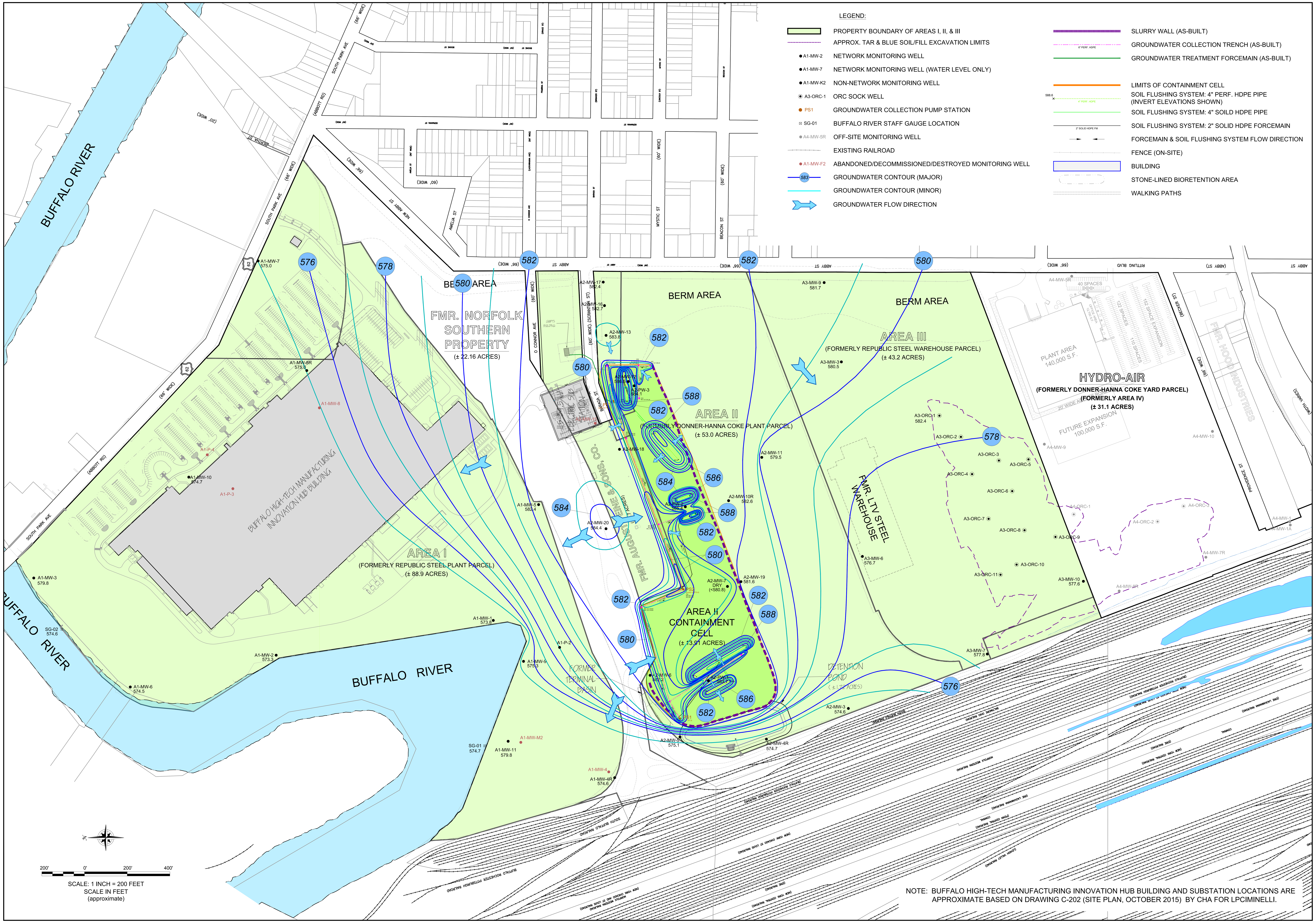
DRAWN BY: BCH
DATE: JULY 2017
CHECKED BY:
APPROVED BY:

SITE PLAN

ANNUAL GROUNDWATER MONITORING REPORT
FORMER STEEL MANUFACTURING SITE
BUFFALO, NEW YORK

PREPARED FOR
FORT SCHUYLER MANAGEMENT CORPORATION

FIGURE 2


LEGEND:
PROPERTY BOUNDARY OF AREAS I, II, & III
APPROX. TAR & BLUE SOIL/FILL EXCAVATION LIMITS
NETWORK MONITORING WELL
NETWORK MONITORING WELL (WATER LEVEL ONLY)
NON-NETWORK MONITORING WELL
ORC SOCK WELL
GROUNDWATER COLLECTION PUMP STATION
BUFFALO RIVER STAFF GAUGE LOCATION
OFF-SITE MONITORING WELL
EXISTING RAILROAD
ABANDONED/DECOMMISSIONED/DESTROYED MONITORING WELL
GROUNDWATER CONTOUR (MAJOR)
GROUNDWATER CONTOUR (MINOR)
GROUNDWATER FLOW DIRECTION
SLURRY WALL (AS-BUILT)
GROUNDWATER COLLECTION TRENCH (AS-BUILT)
GROUNDWATER TREATMENT FORCEMAIN (AS-BUILT)
LIMITS OF CONTAINMENT CELL
SOIL FLUSHING SYSTEM: 4" PERF. HDPE PIPE (INVERT ELEVATIONS SHOWN)
SOIL FLUSHING SYSTEM: 4" SOILD HDPE PIPE
SOIL FLUSHING SYSTEM: 2" SOLID HDPE FORCEMAIN
FORCEMAIN & SOIL FLUSHING SYSTEM FLOW DIRECTION
FENCE (ON-SITE)
BUILDING
STONE-LINED BIORETENTION AREA
WALKING PATHS
BUFFALO RIVER
BUFFALO RIVER
BERM AREA
BERM AREA
BERM AREA
FMR. NORFOLK SOUTHERN PROPERTY
(± 22.16 ACRES)
AREA I
(FORMERLY REPUBLIC STEEL PLANT PARCEL)
(± 88.9 ACRES)
AREA II
(FORMERLY DONNER-HANNA COKE PLANT PARCEL)
(± 53.0 ACRES)
AREA II CONTAINMENT CELL
(± 13.01 ACRES)
AREA III
(FORMERLY REPUBLIC STEEL WAREHOUSE PARCEL)
(± 43.2 ACRES)
HYDRO-AIR
(FORMERLY DONNER-HANNA COKE YARD PARCEL)
(FORMERLY AREA IV)
(± 31.1 ACRES)
BUFFALO HIGH-TECH MANUFACTURING INNOVATION HUB BUILDING
FMR. LTV STEEL WAREHOUSE
FMR. AUGUST FEINE & SONS, CO.
FMR. HOOD INDUSTRIES
PLANT AREA 140,000 S.F.
FUTURE EXPANSION 100,000 S.F.
FORMER TERMINAL BASIN
DETENTION POND
SOUTH PARK AVE
ABBY ST
O CONNOR AVE
MYSTIC ST
BEACON ST
AMELIA ST
576
578
580
582
584
586
588
A1-MW-7 575.0
A1-MW-6R 579.6
A1-MW-10 574.7
A1-MW-3 579.8
A1-MW-2 573.3
A1-MW-6 574.5
A1-MW-1 573.8
A1-MW-5 582.4
A1-MW-9 575.3
A1-MW-11 579.8
A1-MW-4R 574.6
SG-02 574.6
SG-01 574.7
A2-MW-17 582.4
A2-MW-16 582.7
A2-MW-13 583.8
A2-MW-20 584.4
A2-MW-11 579.5
A2-MW-10R 582.6
A2-MW-19 581.6
A2-MW-7 DRY (<580.8)
A2-MW-3 574.6
A2-MW-4R 574.7
A2-MW-5 575.1
A3-MW-9 581.7
A3-MW-3 580.5
A3-MW-6 576.7
A3-MW-10 577.6
A3-MW-7 577.8
A3-ORC-1 582.4
SCALE: 1 INCH = 200 FEET
SCALE IN FEET
(approximate)

NOTE: BUFFALO HIGH-TECH MANUFACTURING INNOVATION HUB BUILDING AND SUBSTATION LOCATIONS ARE APPROXIMATE BASED ON DRAWING C-202 (SITE PLAN, OCTOBER 2015) BY CHA FOR LPCIMINELLI.

TurnKey Environmental Restoration, LLC
2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

JOB NO.: 0322-017-500

REVISIONS

NO.	BY	DATE	REMARKS

SEAL

DRAWN BY: CMC
DATE: DECEMBER 2018
CHECKED BY:
APPROVED BY:

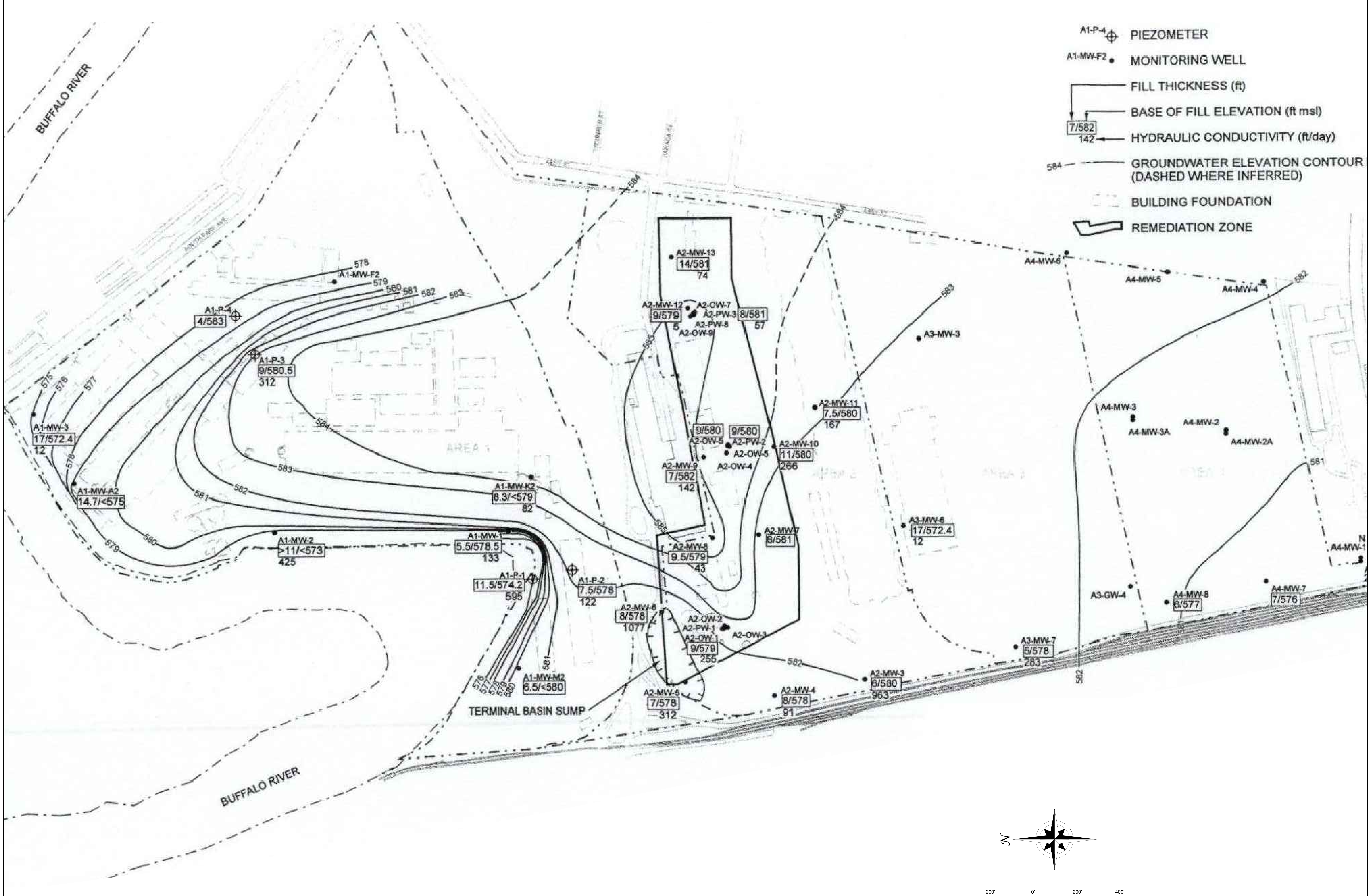
ISOPOTENTIAL MAP FOR August 29, 2018

ANNUAL GROUNDWATER MONITORING REPORT
FORMER STEEL MANUFACTURING SITE
BUFFALO, NEW YORK

PREPARED FOR
FORT SCHUYLER MANAGEMENT CORPORATION

FIGURE 3

F:\CAD\TurnKey\Riverbend (formerly Steelfields)\LTGWM Program\2018 Comprehensive GWM Report\Figure 3; Isopotential Map (Aug 2018).dwg, 5/10/2019 5:05:10 PM, DWG To PDF.pc3



Note: Original drawing prepared by Geomatrix Consultants, Inc., June 1998.

TURNKEY ENVIRONMENTAL RESTORATION, LLC
2558 HAMBURG TURNPIKE
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BUFFALO, NY 14218
(716) 856-0635

JOB NO.: 0322-016-500

REVISIONS

NO.	BY	DATE	REMARKS

SEAL

DRAWN BY: BCH
DATE: JUNE 2016
CHECKED BY:
APPROVED BY:

DISCLAIMER: PROPERTY OF BENCHMARK EES, PLLC. IMPORTANT: THIS DRAWING PRINT IS LOANED FOR MUTUAL ASSISTANCE AND AS SUCH IS SUBJECT TO RECALL AT ANY TIME. INFORMATION CONTAINED HEREON IS NOT TO BE DISCLOSED OR REPRODUCED IN ANY FORM FOR THE BENEFIT OF PARTIES OTHER THAN NECESSARY SUBCONTRACTORS & SUPPLIERS WITHOUT THE WRITTEN CONSENT OF BENCHMARK EES, PLLC.

ISOPOTENTIAL MAP - JUNE 1998

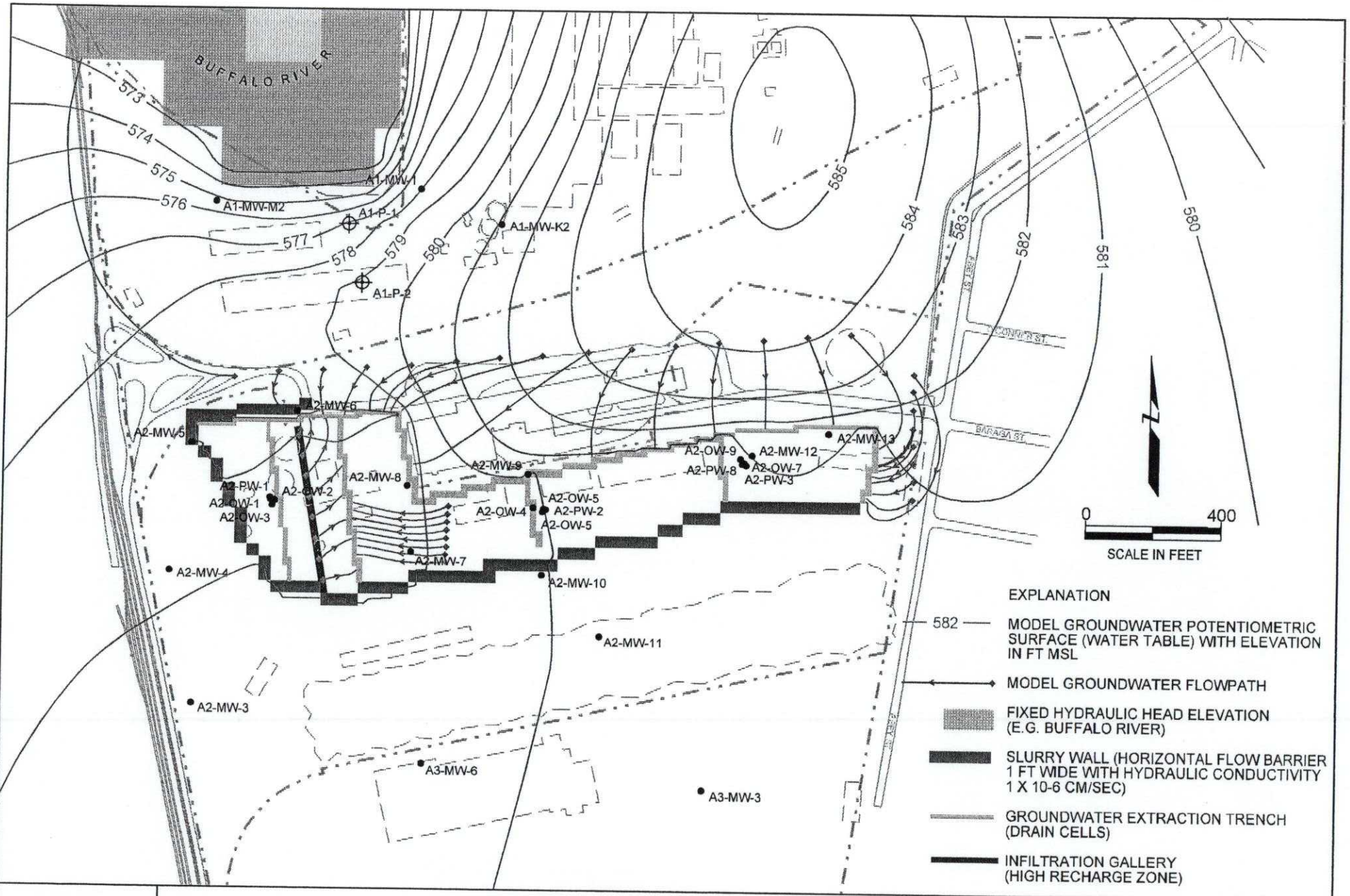
GROUNDWATER / ORC MONITORING EVENT
FORMER STEEL MANUFACTURING SITE
BUFFALO, NEW YORK

PREPARED FOR
FORT SCHUYLER MANAGEMENT CORPORATION

FIGURE 4

ATTACHMENT 1

GROUNDWATER FLOW MODEL (GEOMATRIX, DECEMBER 1998)



GEOMATRIX

SIMULATED GROUNDWATER CONTOURS AND FLOWPATHS
REMEDIAL ALTERNATIVE 2
LTV Steel
Buffalo, New York

Figure 11

Project No. B4991

MAP_WT3X.pen

CHECKED:_____ \\SFPRNT2\Splash Hold Job-Name\matrix.ctb

q:\buffalo\b4991\gfm_981f_fig_11.dgn

ATTACHMENT 2

CONCENTRATION VERSUS TIME & MOVING AVERAGE TREND ANALYSIS (MATA) PLOTS

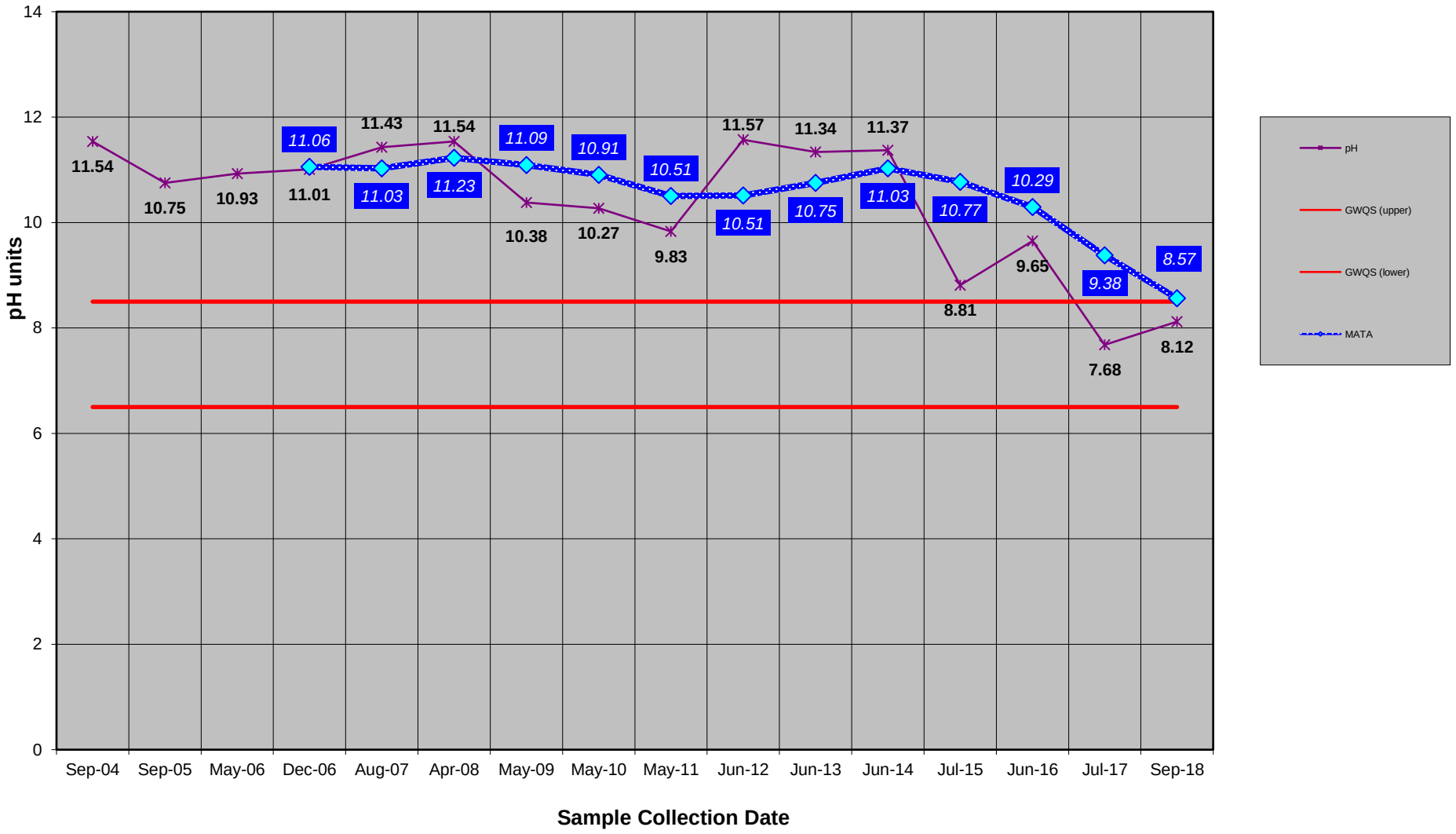
ATTACHMENT 2A

pH

ATTACHMENT 2

MOVING AVERAGE TREND ANALYSIS
A1-MW-5
pH

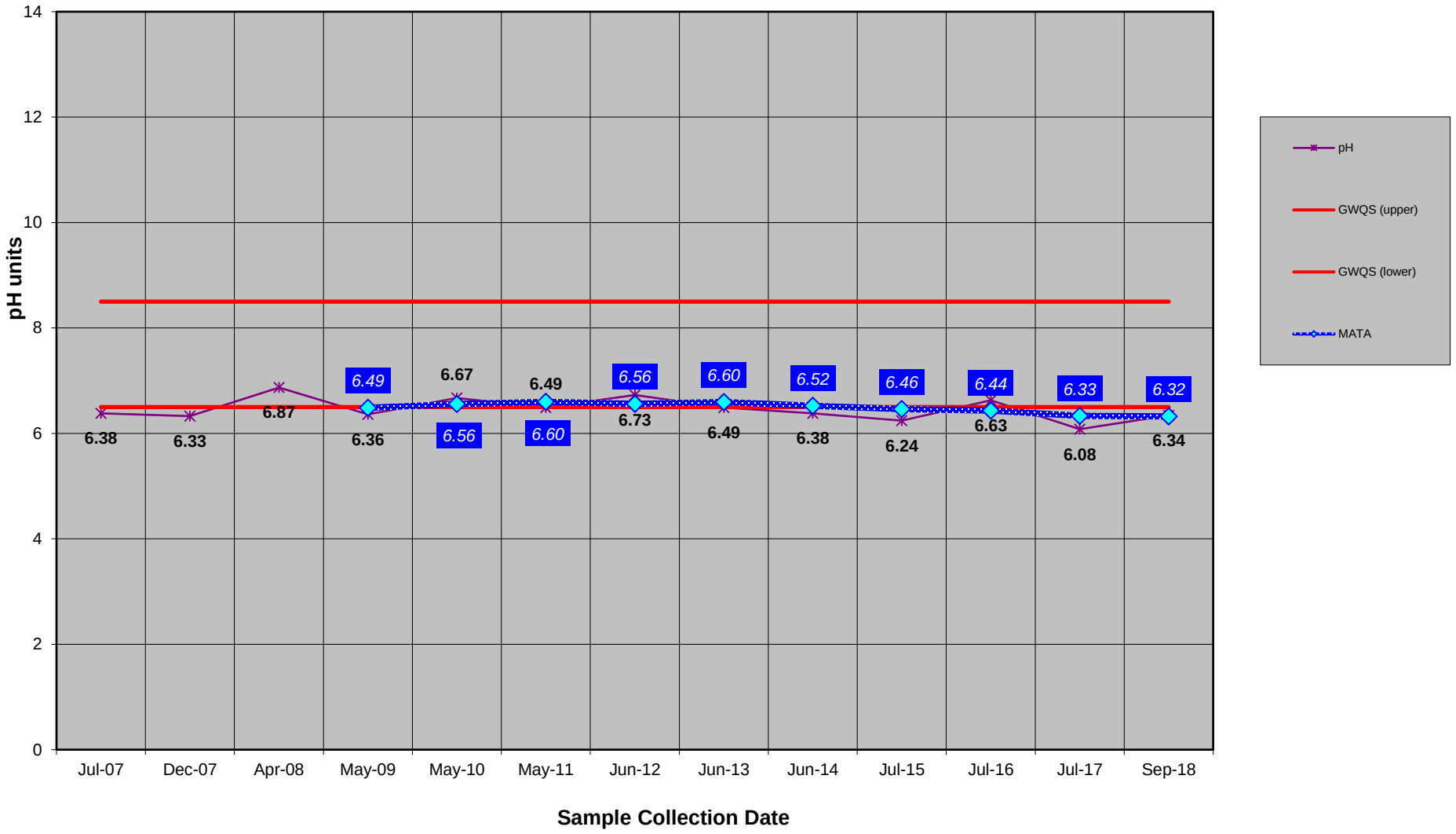
Riverbend Area I LTGWM
Buffalo, New York



ATTACHMENT 2

MOVING AVERAGE TREND ANALYSIS
A2-MW-16
pH

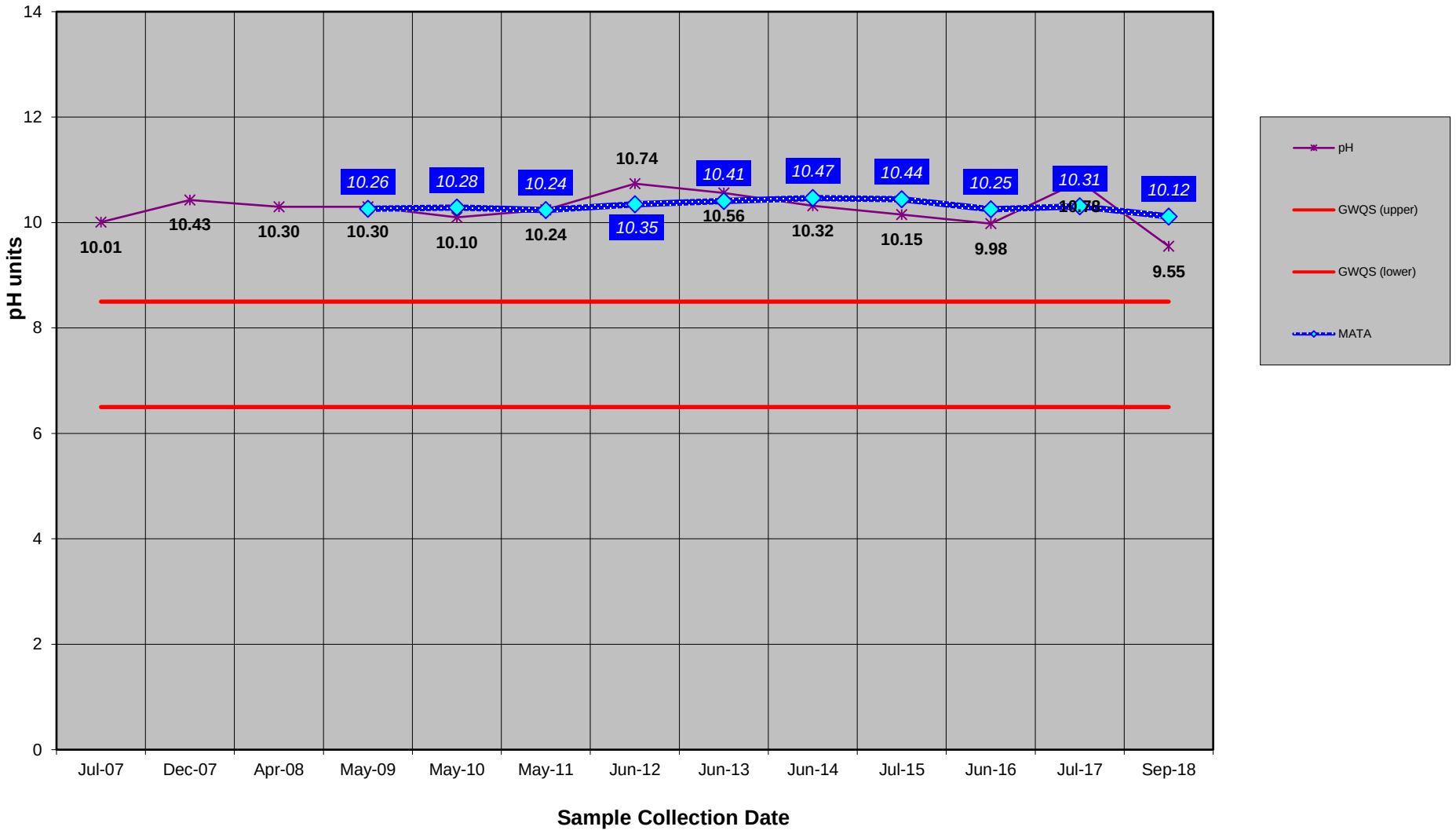
Riverbend Area I LTGWM
Buffalo, New York



ATTACHMENT 2

MOVING AVERAGE TREND ANALYSIS
A3-MW-7
pH

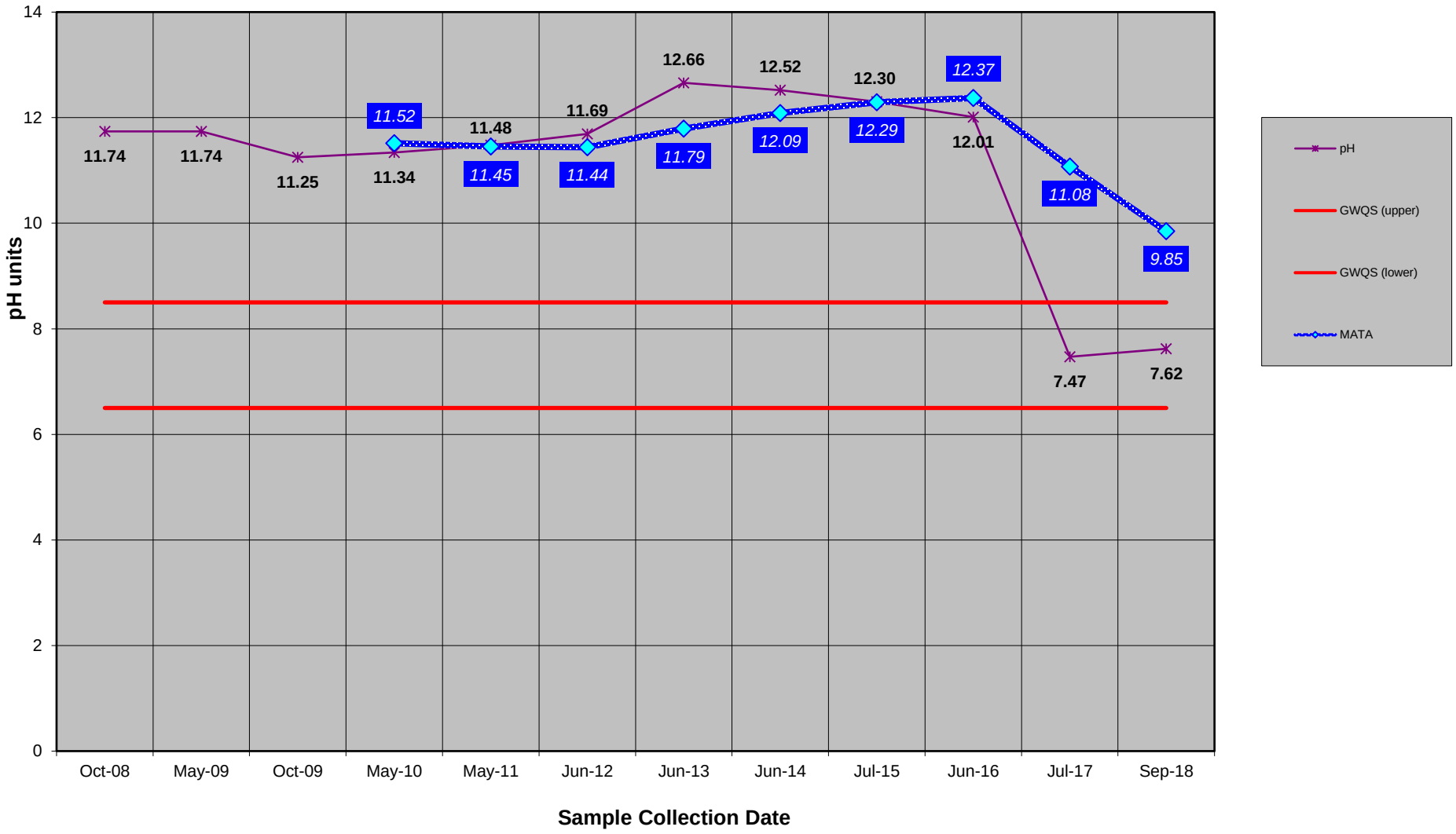
Riverbend Area I LTGWM
Buffalo, New York



ATTACHMENT 2

MOVING AVERAGE TREND ANALYSIS
A3-MW-9
pH

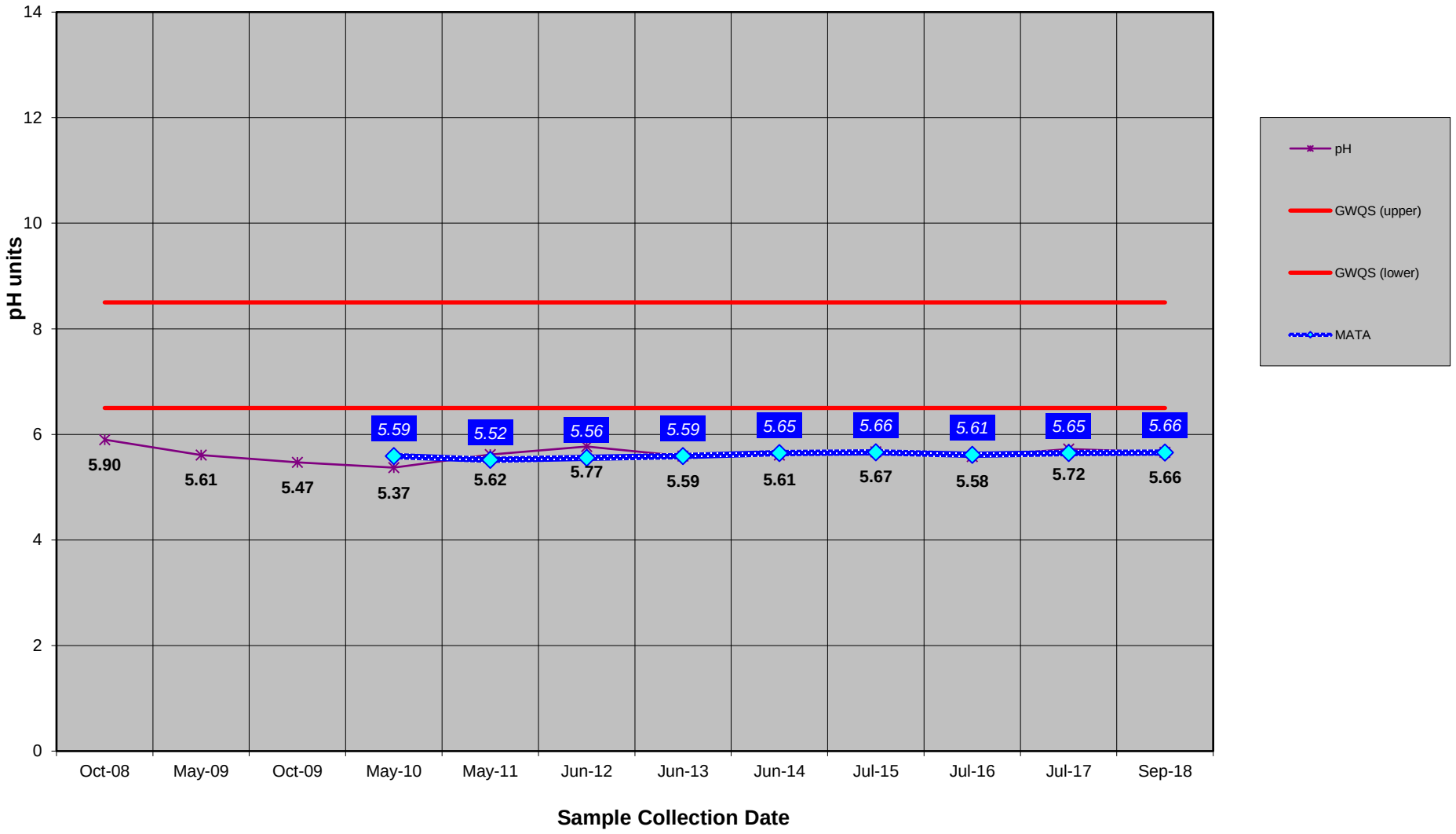
Riverbend Area I LTGWM
Buffalo, New York



ATTACHMENT 2

MOVING AVERAGE TREND ANALYSIS
A3-MW-10
pH

Riverbend Area I LTGWM
Buffalo, New York



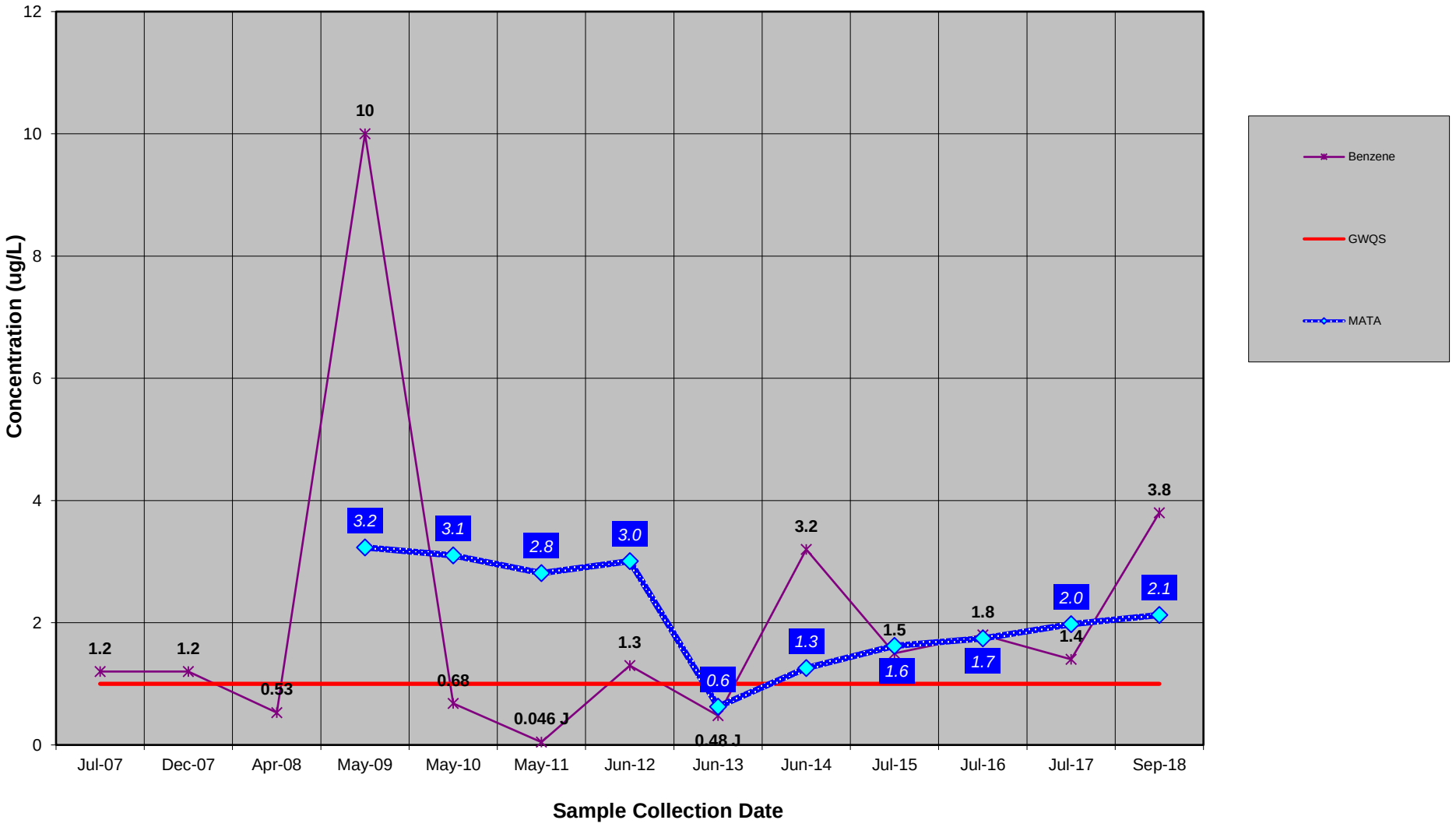
ATTACHMENT 2B

BENZENE

ATTACHMENT 2

MOVING AVERAGE TREND ANALYSIS
A2-MW-16
BENZENE

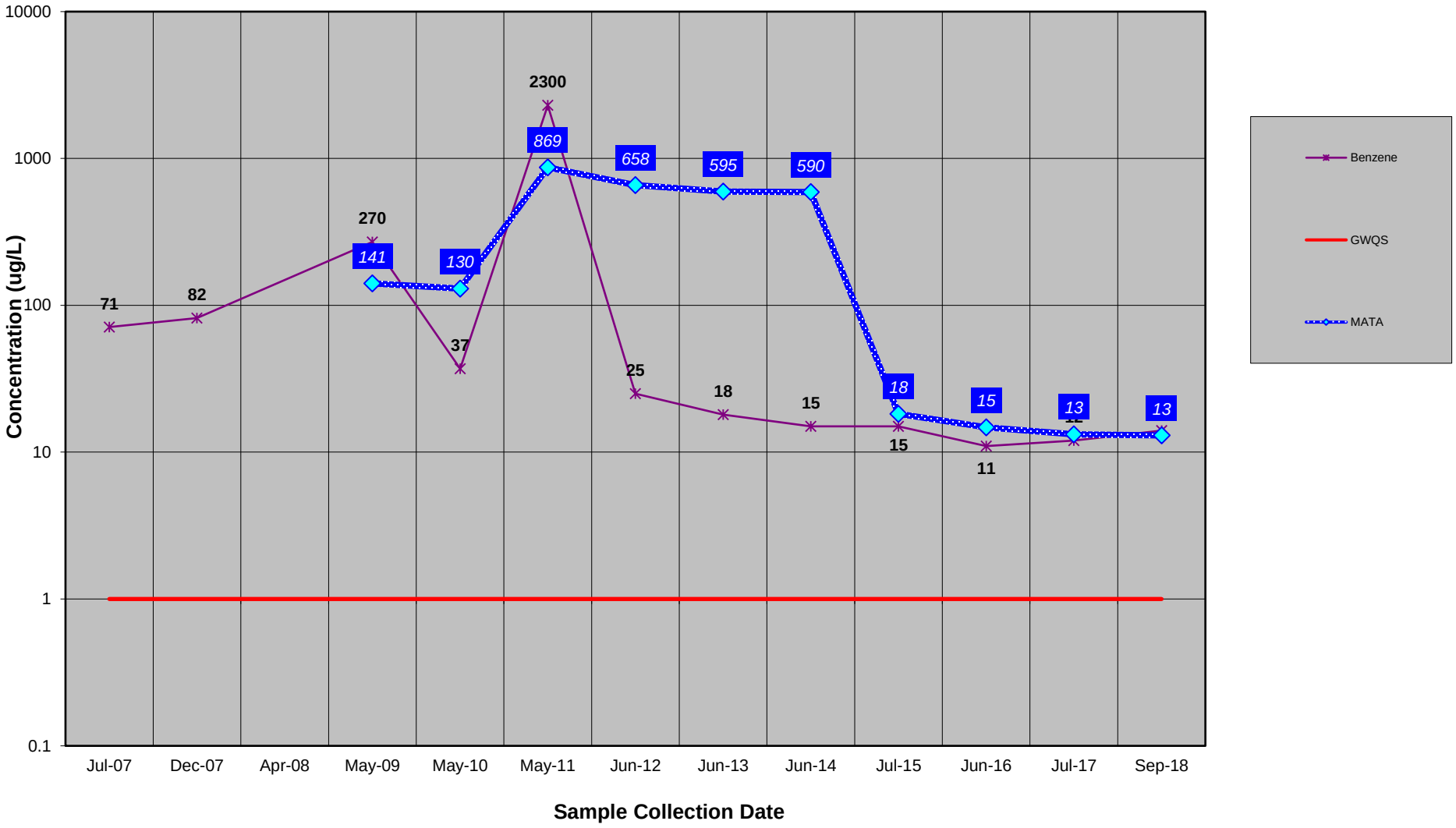
Riverbend Area I LTGWM
Buffalo, New York



ATTACHMENT 2

MOVING AVERAGE TREND ANALYSIS
A3-MW-7
BENZENE

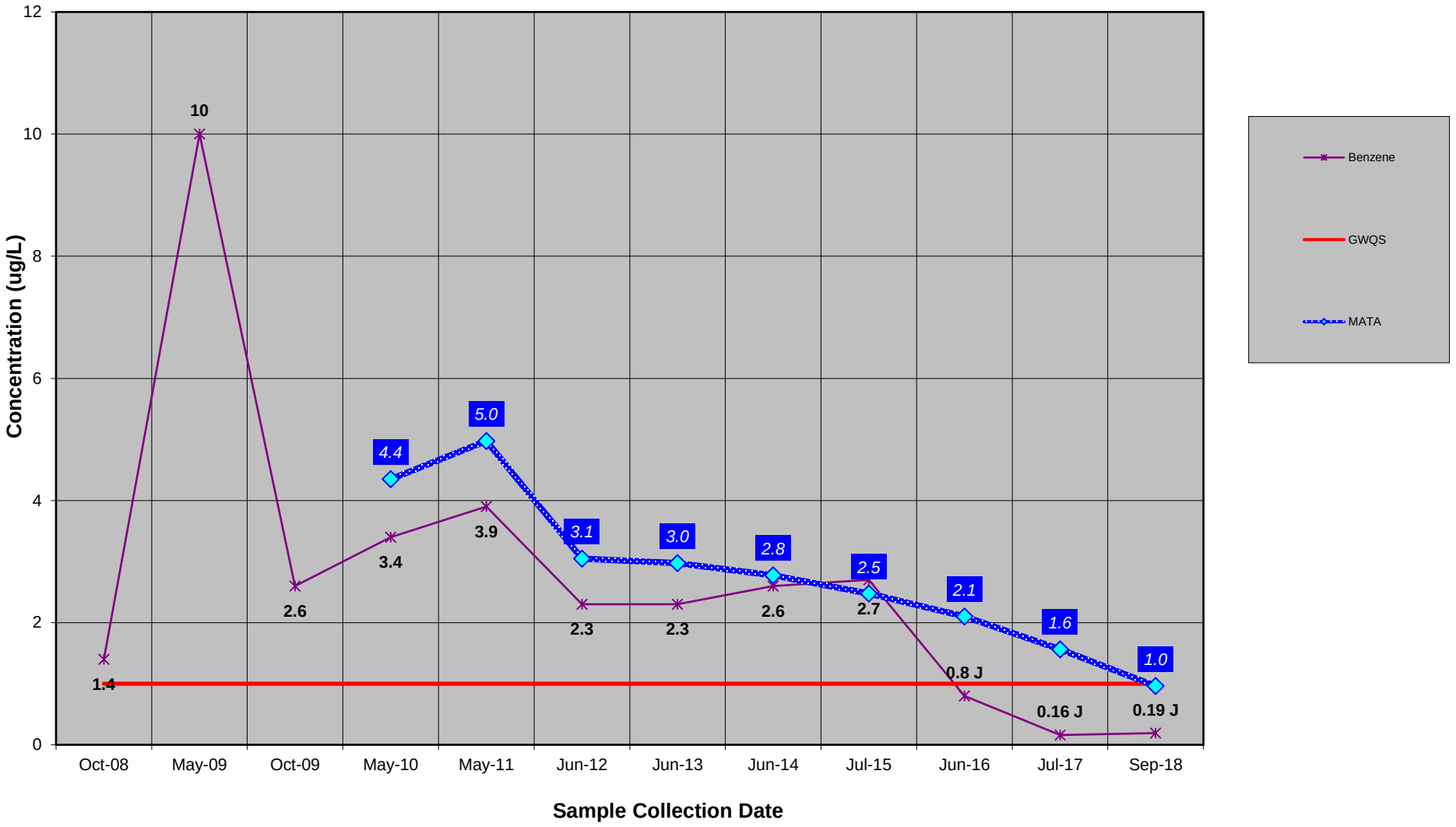
Riverbend Area I LTGWM
Buffalo, New York



ATTACHMENT 2

MOVING AVERAGE TREND ANALYSIS
A3-MW-9
BENZENE

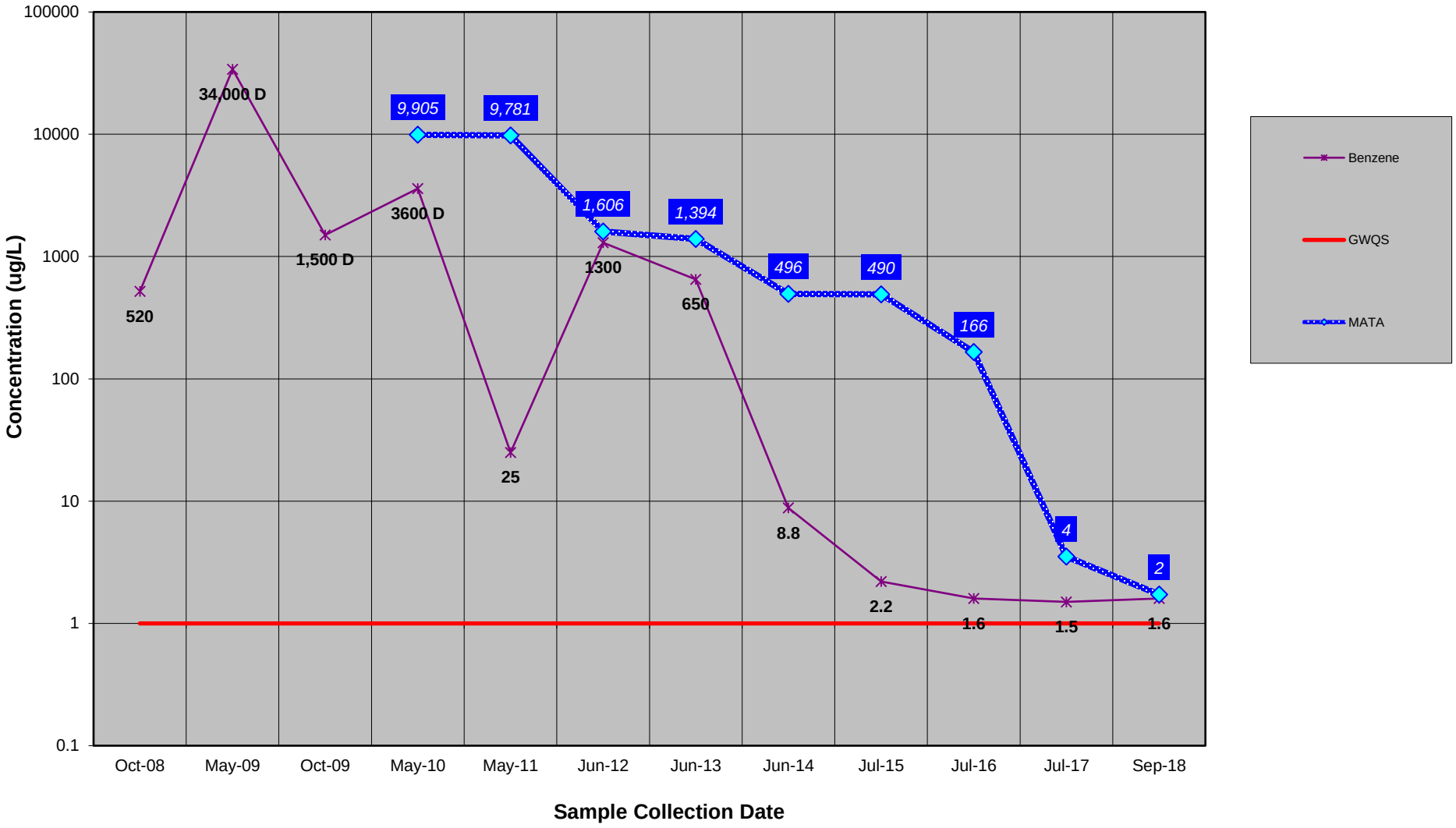
Riverbend Area I LTGWM
Buffalo, New York



ATTACHMENT 2

MOVING AVERAGE TREND ANALYSIS
A3-MW-10
BENZENE

Riverbend Area I LTGWM
Buffalo, New York



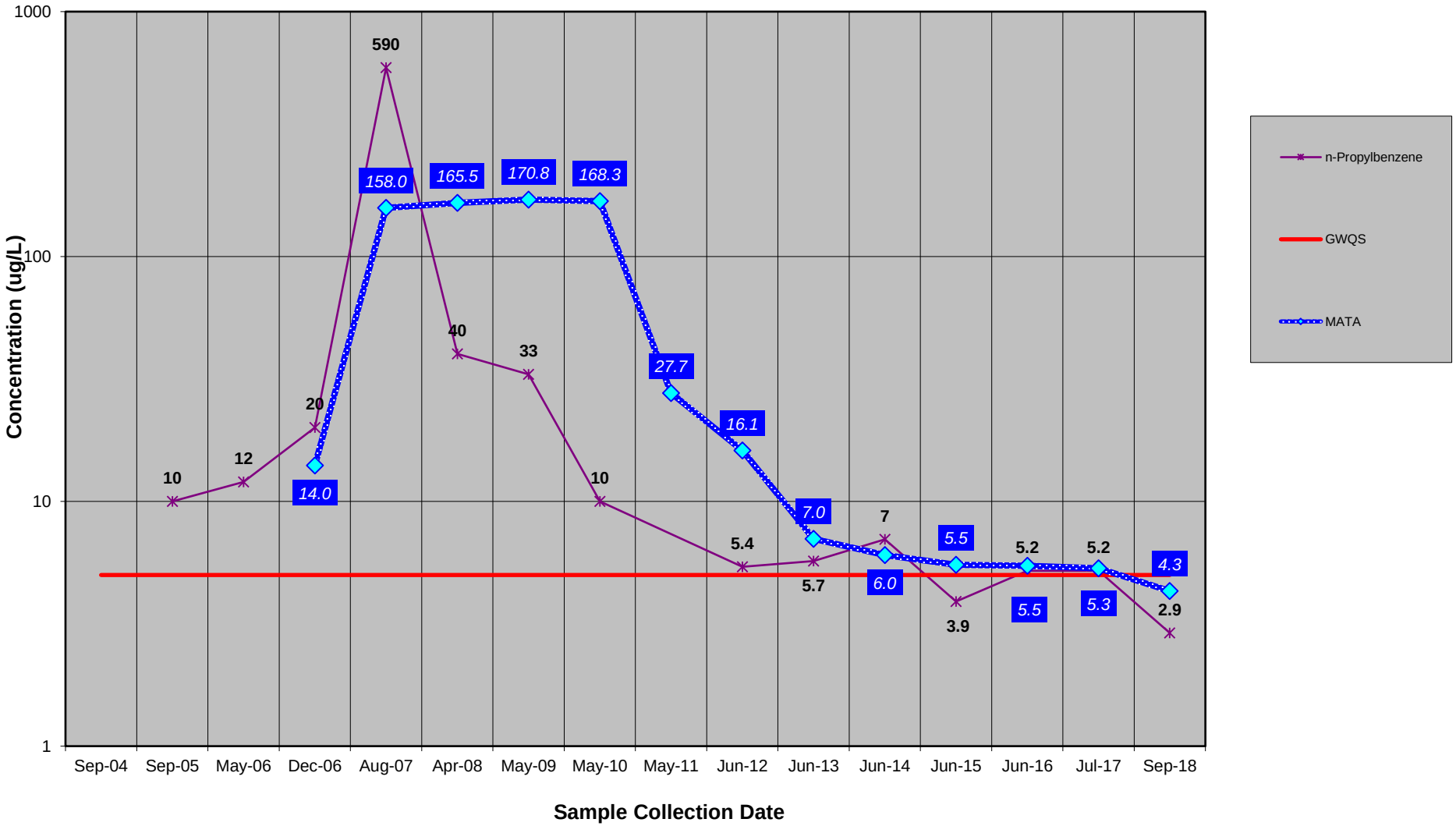
ATTACHMENT 2C

N-PROPYLBENZENE

ATTACHMENT 2

MOVING AVERAGE TREND ANALYSIS
A1-MW-6
n-PROPYLBENZENE

Riverbend Area I LTGWM
Buffalo, New York



ATTACHMENT 2D

TOTAL ARSENIC

ATTACHMENT 2

MOVING AVERAGE TREND ANALYSIS
A1-MW-6
TOTAL ARSENIC

Riverbend Area I LTGWM
Buffalo, New York

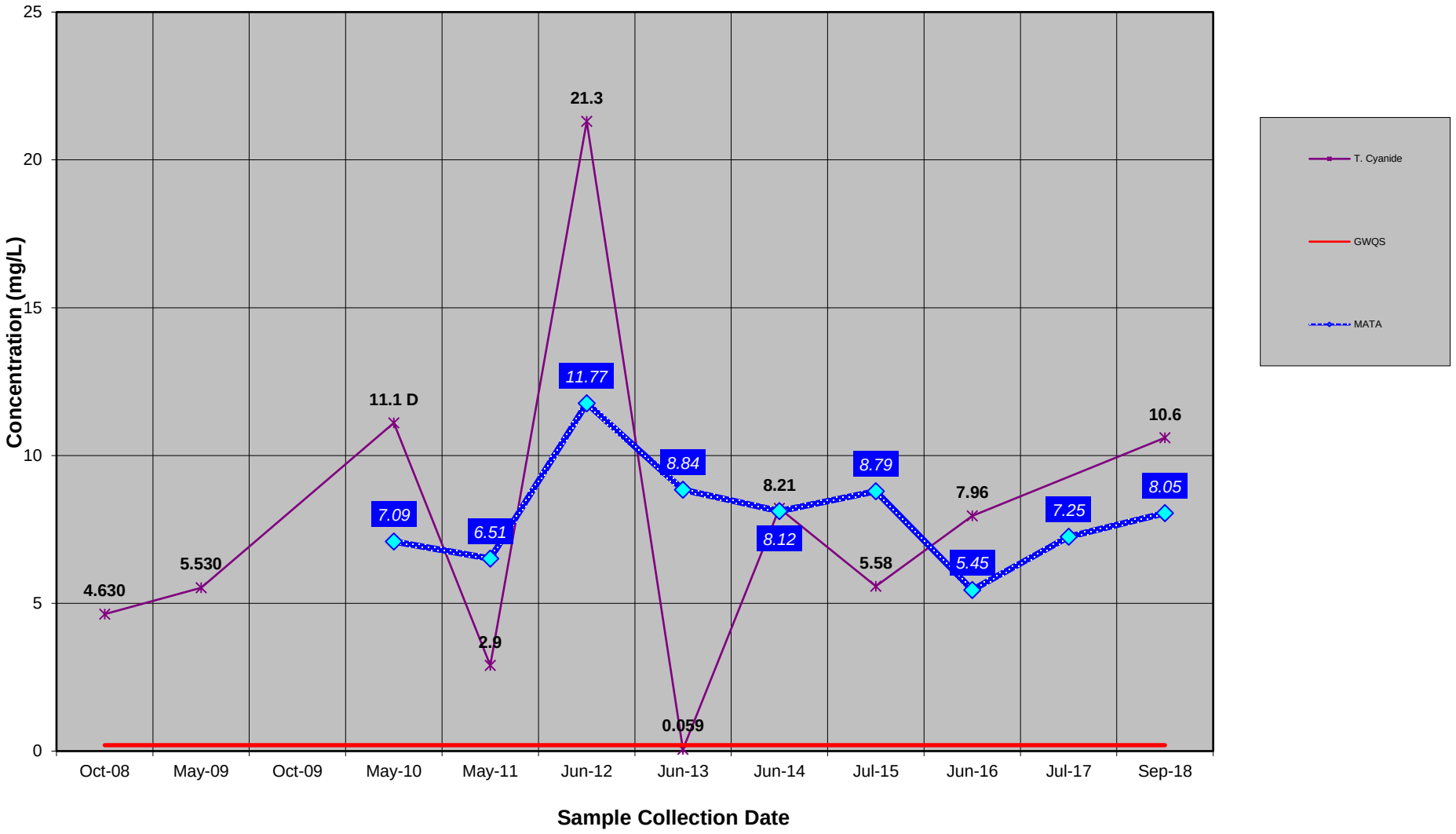
ATTACHMENT 2E

TOTAL CYANIDE

ATTACHMENT 2

MOVING AVERAGE TREND ANALYSIS
A3-MW-3
TOTAL CYANIDE

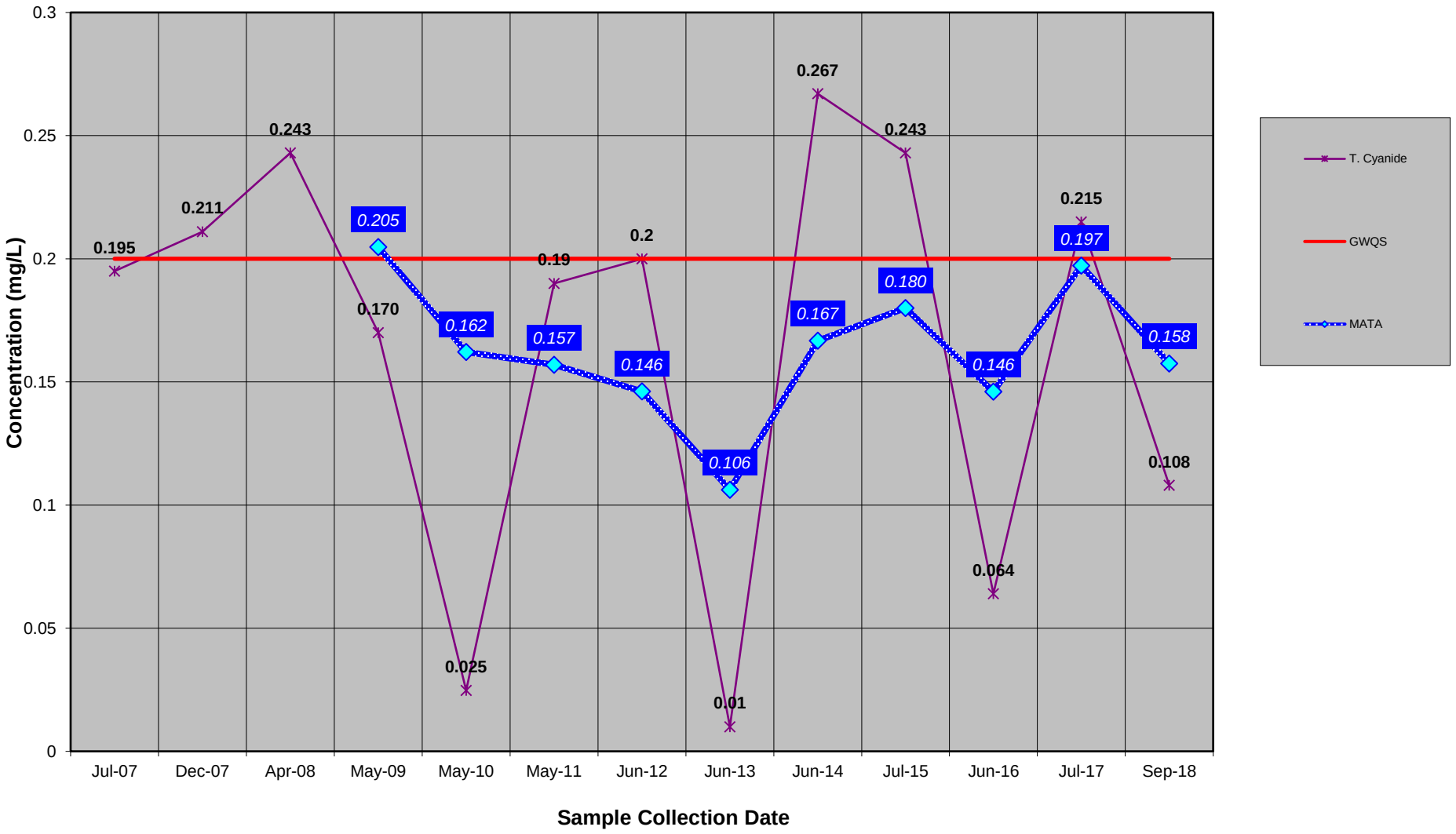
Riverbend Area I LTGWM
Buffalo, New York



ATTACHMENT 2

MOVING AVERAGE TREND ANALYSIS
A3-MW-7
TOTAL CYANIDE

Riverbend Area I LTGWM
Buffalo, New York



APPENDIX D

AREA III

ORC ANNUAL INSPECTION FORMS
JUNE & DECEMBER

ORC WELL ANNUAL INSPECTION FORM

Project Name: RiverBend Site - LTGWM
Project No.: 0322-~~017-500~~ 018-501

Project Location: Area III
Client: FSMC

Preparer's Name: Chester Hochreiter
Date/Time:

sample location:	A3-ORC-1	A3-ORC-2	A3-ORC-3	A3-ORC-4	A3-ORC-5	A3-ORC-6
purge start date:	6-4-18	6-4-18	6-4-18	6-4-18	6-4-18	6-4-18
purge end date:	6-7-18	6-7-18	6-7-18	6-7-18	6-7-18	6-7-18
volume purged (gallons):	34.00	40.00	35.50	32.00	39.00	33.00

Field groundwater quality measurements:

sample date:	6-7-18	6-7-18	6-7-18	6-7-18	6-7-18	6-7-18
sample time:	1640	1700	1600	1620	1540	1520
DTW (fbTOR)	4.66	4.75	4.81	4.22	5.14	4.95
pH (units)	11.51	5.17	4.79	6.14	5.61	4.57
Temp. (deg F)	16.6	16.8	16.8	17.4	15.6	16.0
SC (uS)	1861	5888	6604	3666	5794	10.68 mS
Turbidity (NTU)	42	38	34	104	65	80
DO (ppm)	0.25	2.18	1.88	2.07	2.05	1.61
ORP (mV)	-338	43	105	-68	8	126

Well Integrity Observations:

Cement seal	good	good	good	good	good	good
Pro-Casing condition	good	good	good	good	good	good
Lock condition	good	good	good	good	good	good
J-plug condition	good	good	good	good	good	good

Refer to Site Plan for well locations

ORC Sock's:

Have any Socks been replaced? ☐ yes ☒ no

If replaced, provide date and explanation:

Are socks fully submerged in well screens. ☒ yes ☐ no

If no, explain.

Are all ORC wells being sampled and maintained according to the site management plan ☒ yes ☐ no

If no, explain.

Initial: CEH

Date: 6-7-2018

ORC WELL ANNUAL INSPECTION FORM

Project Name: RiverBend Site - LTGWM

Project No.: 0322-~~016-500~~ -018-501

Project Location: Area III

Client: FSMC

Preparer's Name: Chester Hochreiter

Date/Time:

sample location:	A3-ORC-7	A3-ORC-8	A3-ORC-9	A3-ORC-10	A3-ORC-11	
purge start date:	6-4-18	6-4-18	6-5-18	6-4-18	6-4-18	
purge end date:	6-7-18	6-7-18	6-7-18	6-7-18	6-7-18	
volume purged (gallons):	25.00	22.00	75.00	30.50	37.00	

Field groundwater quality measurements:

sample date:	6-7-18	6-7-18	6-7-18	6-7-18	6-7-18	
sample time:	1440	1500	1720	1400	1420	
DTW (fbTOR)	5.75	5.78	3.39	5.66	5.36	
pH (units)	5.70	4.65	3.36	6.05	6.12	
Temp. (deg F)	15.5	15.8	16.3	16.0	16.6	
SC (uS)	7006	8369	10.23 ms	9337	4450	
Turbidity (NTU)	133	144	109	158	107	
DO (ppm)	2.37	1.73	1.57	1.03	1.78	
ORP (mV)	-15	111	254	-77	-52	

Well Integrity Observations:

Cement seal	good	good	good	good	good	
Pro-Casing condition	good	good	good	good	good	
Lock condition	good	good	good	good	good	
J-plug condition	good	good	good	good	good	

Refer to Site Plan for well locations

ORC Sock's:

Have any Socks been replaced? ☐ yes ☒ no

If no, explain.

Are socks fully submerged in well screens. ☒ yes ☐ no

If no explain why.

Are all ORC wells being sampled and maintained according to the site management plan ☒ yes ☐ no

If no, explain.

Initial: CEH

Date: 6-7-2018

ORC WELL ANNUAL INSPECTION FORM

Project Name: RiverBend Site - LTGWM | Project No.: 0322-017-500

Project Location: Area III | Client: FSMC

Preparer's Name: Chester Hochreiter | Date/Time: 11-29-18

sample location:	A3-ORC-1	A3-ORC-2	A3-ORC-3	A3-ORC-4	A3-ORC-5	A3-ORC-6
purge start date:	11-26-18	11-26-18	11-26-18	11-26-18	11-26-18	11-26-18
purge end date:	11-29-18	11-29-18	11-29-18	11-29-18	11-29-18	11-29-18
volume purged (gallons):	34.5	41	36	36	40	32

Field groundwater quality measurements:

sample date:	11-29-18	11-29-18	11-29-18	11-29-18	11-29-18	11-29-18
sample time:	1530	1545	1500	1515	1445	1430
DTW (fbTOR)	4.57	4.92	5.00	4.52	4.53	5.37
pH (units)	11.61	5.47	5.01	6.03	5.80	4.72
Temp. (deg F)	9.5	8.1	10.00	6.9	8.5	9.6
SC (uS)	1863	6324	7499	3813	4680	11.26 ms
Turbidity (NTU)	24.4	24.4	9.92	62.6	34.5	16.2
DO (ppm)	0.11	2.99	1.74	2.37	4.51	1.44
ORP (mV)	-286	-15	70	2	22	81

Well Integrity Observations:

Cement seal	good	good	good	good	good	good
Pro-Casing condition	good	good	good	good	Good	good
Lock condition	good	good	good	good	good	good
J-plug condition	good	good	good	good	good	good

Refer to Site Plan for well locations

ORC Sock's:

Have any Socks been replaced? ☐ yes ☒ no

If replaced, provide date and explanation:

Are socks fully submerged in well screens. ☒ yes ☐ no

If no, explain.

Are all ORC wells being sampled and maintained according to the site management plan ☒ yes ☐ no

If no, explain.

Initial: CEH Date: 11-29-18

ORC WELL ANNUAL INSPECTION FORM

Project Name: RiverBend Site - LTGWM | Project No.: 0322-016-500

Project Location: Area III | Client: FSMC

Preparer's Name: Chester Hachmeister | Date/Time: 11-29-18

sample location:	A3-ORC-7	A3-ORC-8	A3-ORC-9	A3-ORC-10	A3-ORC-11	
purge start date:	11-26-18	11-26-18	11-28-18	11-26-18	11-26-18	
purge end date:	11-29-18	11-29-18	11-29-18	11-29-18	11-29-18	
volume purged (gallons):	27	22.5	70	32		

Field groundwater quality measurements:

sample date:	11-29-18	11-29-18	11-29-18	11-29-18	11-29-18	
sample time:	1400	1415	1600	1330	1345	
DTW (fbTOR)	6.02	5.82	3.18	5.44	5.14	
pH (units)	5.58	5.48	3.33	6.30	6.27	
Temp. (deg F)	8.1	7.7	8.5	8.1	7.4	
SC (uS)	7669	7049	9632	3838	3802	
Turbidity (NTU)	40.2	83	206	132	40.7	
DO (ppm)	2.02	2.25	1.59	2.25	3.20	
ORP (mV)	-19	1	244	-70	-78	

Well Integrity Observations:

Cement seal	good	good	good	good	good	
Pro-Casing condition	good	good	good	good	good	
Lock condition	good	good	good	good	good	
J-plug condition	good	good	good	good	good	

Refer to Site Plan for well locations

ORC Sock's:

Have any Socks been replaced? ☐ yes ☒ no

If no, explain.

Are socks fully submerged in well screens. ☒ yes ☐ no

If no explain why.

Are all ORC wells being sampled and maintained according to the site management plan ☒ yes ☐ no

If no, explain.

Initial: CEH Date: 11-29-18

APPENDIX E

SITE PHOTOGRAPH LOG

SITE PHOTOGRAPHS

Photo 1:

Photo 2:

Photo 3:

Photo 4:

Photo 1: Area I – looking north, east side of Tesla building

Photo 2: Area I – looking west, vegetated river buffer

Photo 3: Area I – looking west northwest, storm sewer outfall

Photo 4: Area I – looking southwest at riprap cover along north building face

SITE PHOTOGRAPHS

Photo 5:

Photo 6:

Photo 7:

Photo 8:

Photo 5: Area I – looking south, river embankment along fence

Photo 6: Area I – looking northeast, west side of Tesla building

Photo 7: Area I – looking southeast, west side of Tesla building

Photo 8: Area I – looking east, west side of Tesla building with cover and river in forefront

SITE PHOTOGRAPHS

Photo 9:

Photo 10:

Photo 11:

Photo 12:

Photo 9: Area I –looking east, western portion of Area I at variance slag reuse area with west side of Tesla building in background

Photo 10: Area II – looking north at south side of Tesla building

Photo 11: Area I – looking north at riprap on south side of Tesla building

Photo 12: Area I – looking west at south side of Tesla building

SITE PHOTOGRAPHS

Photo 13:

Photo 14:

Photo 15:

Photo 16:

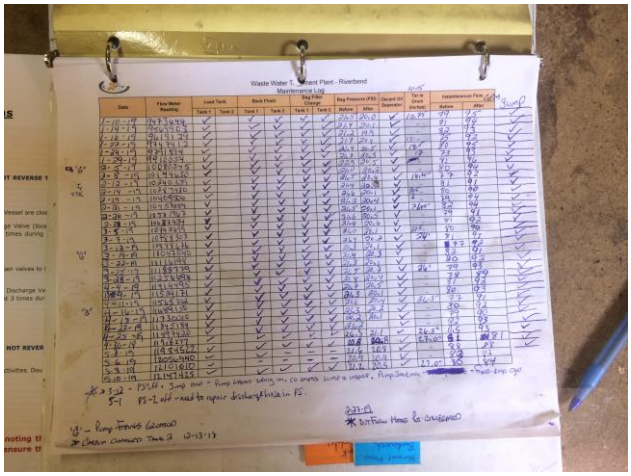


Photo 13: Area II – looking northwest, pretreatment building

Photo 14: Area II – looking east, pretreatment building control panel

Photo 15: Area II – looking southwest, pretreatment building system

Photo 16: Area II – pretreatment system maintenance log

SITE PHOTOGRAPHS

Photo 17:

Photo 18:

Photo 19:

Photo 20:

Photo 17: Area II – looking north, Abby St Berm near O'Connor

Photo 18: Area II – looking east, east half of Area II cover

Photo 19: Area II – looking northwest, west half of Area II cover

Photo 20: Area II – looking east, south slope of Area II cover

SITE PHOTOGRAPHS

Photo 21:

Photo 22:

Photo 23:

Photo 24:

Photo 21: Area II – looking northwest, pump station PS-1 with area of filled in terminal basin beyond the gate

Photo 22: Area II – looking north, west side of Area II cover and containment cell detention pond (dry)

Photo 23: Area II – looking south, west side of Area II

Photo 24: Area II – looking north west at electric substation for the Tesla building

SITE PHOTOGRAPHS

Photo 25:

Photo 26:

Photo 27:

Photo 28:

Photo 25: Area III – looking east, showing Area III and perimeter fence

Photo 26: Area III – looking northeast, showing north side of Area III

Photo 27: Area III – looking southeast, showing middle of Area III with Area IV in background

Photo 28: Area III – looking west, showing north half of Area III