Aztech Environmental
TECHNOLOGIES
A LaBella Company

Periodic Review Report
for the
Three Star Anodizing Site – Operable Unit 1

Wappingers Falls, Dutchess County, New York

Covering the Time Period from
March 16, 2012 through September 27, 2020

NYSDEC Site No. 3-14-058

October 27, 2020

Prepared for:
NYSDEC – Central Office
625 Broadway
Albany, New York 12233-7020

REMEDIATION SOLUTIONS

ENVIRONMENTAL CONSULTING

DRILLING APPLICATIONS

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Enclosure 1
Engineering Controls - Standby Consultant/Contractor Certification Form

Site Details "MGP AREA" **Box 1**

Site No. 314058

Site Name Three Star Anodizing

Site Address: Market Street Zip Code: 12590
City/Town: Wappingers Falls
County: Dutchess
Site Acreage: ~~8.5~~ 3.195 OF 10.245 Acres (RHA)

Reporting Period: March 16, 2012 to September 27, 2020

	YES	NO
1. Is the information above correct?	☒	☐
If NO, include handwritten above or on a separate sheet.		
2. To your knowledge has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. To your knowledge has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. To your knowledge 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. To your knowledge is the site currently undergoing development?	☐	☒

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed ~~below~~? Commercial / INDUSTRIAL (RHA) BOX 2	☒	☐
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 contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

Signature of Standby Consultant/Contractor

10-27-2020
Date

BOX 3

"MGP AREA"

SITE NO. 314058

Description of Institutional Controls

Parcel	Owner	Institutional Control
S:6158 B:17 L:115227	Wappinger Falls Estuary	Ground Water Use Restriction Landuse Restriction
		Ground Water Use Restriction Landuse Restriction
		Ground Water Use Restriction Landuse Restriction
		Ground Water Use Restriction Landuse Restriction
		Soil Management Plan Monitoring Plan Site Management Plan
		Soil Management Plan Monitoring Plan Site Management Plan
		Soil Management Plan Monitoring Plan Site Management Plan
		✓ Ground Water Use Restriction ✓ Soil Management Plan ✓ Landuse Restriction ✓ Monitoring Plan ✓ Site Management Plan

A series of ICs are required to implement, maintain and monitor the ECs. The Environmental Notice (EN) requires compliance with the ICs.The EN for this site was recorded on 07/18/16 in Dutchess County under Miscellaneous Records as instrument #2016-122.

The EN ensures that:

- All ECs must be operated and maintained as specified in the Aug. 2018 SMP
- All ECs on the Site must be inspected and certified at a frequency and in a manner defined in the SMP
- Environmental monitoring must be performed as defined in the SMP
- Data and information pertinent to SM for the Controlled Property must be reported at the frequency and in a manner defined in the SMP
- On-site environmental monitoring devices, including but not limited to groundwater

monitoring wells, must be protected and replaced as necessary to ensure continued functioning in the manner specified in the SMP.

"MGP AREA"

In addition, the EN places the following restrictions on the property:

• Required compliance with the approved SMP. Restrict the use of groundwater as a source of potable water, without necessary water quality treatment as determined by the New York State Department of Health (NYSDOH) and/or the NYSDEC
• The owner of the Property shall provide information to the NYSDEC to assist it in carrying out its obligation to provide a periodic certification, prepared and submitted by a professional engineer or environmental professional acceptable to the NYSDEC or Relevant Agency, which will certify that the IC/ECs put in place are unchanged from the previous certification, comply with the SMP, and have not been impaired
• The owner of the Property shall continue in full force and effect any IC/ECs required for the Remedy and shall not, through any act or omission, interfere with the NYSDEC's maintenance and monitoring of such controls, unless the owner first obtains permission to discontinue such controls from the NYSDEC or Relevant Agency, in compliance with the approved SMP subject to modifications as approved by the NYSDEC or Relevant Agency
* There shall be no disturbance or excavation of the Property which threatens the integrity of the engineering controls or which results or may result in a significantly increased threat of harm or damage at any site as a result of exposure to soils. • Limit the use and development of the property to commercial or industrial uses.

Description of Engineering Controls

BOX 4

Parcel	Engineering Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Monitoring Wells
	Monitoring Wells
	Monitoring Wells
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Monitoring Wells

Because remaining contamination is present at this Site, ECs and ICs have been implemented to protect public health and the environment for the applicable future use. The Controlled Property has the following ECs:
• a cover system placed over remaining waste
* MGP Area: Six inches of topsoil, underlain by six inches of general fill, underlain by demarcation fabric
* MGP Buffer Area: Six of topsoil underlain by 18 inches of general fill, underlain by demarcation fabric.
* Lower Raceway: Six inches of topsoil underlain by 6-18 inches of general fill, underlain by demarcation fabric
* Vat Area: Six inches of NYSDOT Type 4 underlain by general fill and concrete slabs
* Axton Cross Building Parking Lot: Four inches of asphalt material underlain by a minimum of eight inches of subbase course material underlain by demarcation fabric.
• site access controls
• surface water drainage conveyance

Parcel	Engineering Control
• monitoring wells * SSDS (Axton Cross bldg. only)	

BOX 5 "MGP AREA"

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, including data and material prepared by previous contractors for the current certifying period, if any;

   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) nothing has occurred that would constitute a failure to comply with the Site Management Plan, or equivalent if no Site Management Plan exists.

*Breech in Soil composite ~~liner~~ (R##) cover CM work plan pending

YES	NO
☐	☒

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

Randy Hook

Signature of Standby Consultant/Contractor

10-27-2020

Date

Box 6

Box 6

"MAP AREA"

IC/EC CERTIFICATIONS

Qualified Environmental Professional Signature

I certify that all information in Boxes 2 through 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 RANDY HOOSE at AZTECH ENV. TECH
print name

5 McCrea Hill Rd

Ballston SPA NY 12020
(print business address)

am certifying as a Qualified Environmental Professional.

Randy Hoose 10-27-2020

Signature of Qualified Environmental Professional | Stamp (Required for PE) | Date

Enclosure 1
Engineering Controls - Standby Consultant/Contractor Certification Form

Site Details **Box 1**

Site No. 314058

Site Name Three Star Anodizing "AXTON CROSS BLDG"

Site Address: Market Street Zip Code: 12590
City/Town: Wappingers Falls
County: Dutchess
Site Acreage: ~~8.5~~ 1.340 OF 10.245 ACRES (RHH)

Reporting Period: March 16, 2012 to September 27, 2020

	YES	NO
1. Is the information above correct? AS ADJUSTED	☒	☐
If NO, include handwritten above or on a separate sheet.		
2. To your knowledge has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. To your knowledge has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. To your knowledge 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. To your knowledge is the site currently undergoing development?	☐	☒

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? COMMERCIAL / INDUSTRIAL (RHH) BOX 2	☒	☐
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 contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

Randy Horn
Signature of Standby Consultant/Contractor

10-27-2020
Date

BOX 3

"AXTON - CROSS Bldg"

SITE NO. 314058

Description of Institutional Controls

Parcel	Owner	Institutional Control
S:615 SUBSECT:817 B:1502 L:500	Wappinger Falls Estuary	Ground Water Use Restriction Landuse Restriction
		Ground Water Use Restriction Landuse Restriction
		Ground Water Use Restriction Landuse Restriction
		Ground Water Use Restriction Landuse Restriction
		Soil Management Plan Monitoring Plan Site Management Plan
		Soil Management Plan Monitoring Plan Site Management Plan
		Soil Management Plan Monitoring Plan Site Management Plan
		✓ Ground Water Use Restriction ✓ Soil Management Plan ✓ Landuse Restriction ✓ Monitoring Plan ✓ Site Management Plan

A series of ICs are required to implement, maintain and monitor the ECs. The Environmental Notice (EN) requires compliance with the ICs.The EN for this site was recorded on 07/18/16 in Dutchess County under Miscellaneous Records as instrument #2016-122.

The EN ensures that:

- All ECs must be operated and maintained as specified in the Aug. 2018 SMP
- All ECs on the Site must be inspected and certified at a frequency and in a manner defined in the SMP
- Environmental monitoring must be performed as defined in the SMP
- Data and information pertinent to SM for the Controlled Property must be reported at the frequency and in a manner defined in the SMP
- On-site environmental monitoring devices, including but not limited to groundwater

monitoring wells, must be protected and replaced as necessary to ensure continued functioning in the manner specified in the SMP.

AXTON CROSS Bldg "

In addition, the EN places the following restrictions on the property:

• Required compliance with the approved SMP. Restrict the use of groundwater as a source of potable water, without necessary water quality treatment as determined by the New York State Department of Health (NYSDOH) and/or the NYSDEC
• The owner of the Property shall provide information to the NYSDEC to assist it in carrying out its obligation to provide a periodic certification, prepared and submitted by a professional engineer or environmental professional acceptable to the NYSDEC or Relevant Agency, which will certify that the IC/ECs put in place are unchanged from the previous certification, comply with the SMP, and have not been impaired
• The owner of the Property shall continue in full force and effect any IC/ECs required for the Remedy and shall not, through any act or omission, interfere with the NYSDEC's maintenance and monitoring of such controls, unless the owner first obtains permission to discontinue such controls from the NYSDEC or Relevant Agency, in compliance with the approved SMP subject to modifications as approved by the NYSDEC or Relevant Agency
* There shall be no disturbance or excavation of the Property which threatens the integrity of the engineering controls or which results or may result in a significantly increased threat of harm or damage at any site as a result of exposure to soils. • Limit the use and development of the property to commercial or industrial uses.

Description of Engineering Controls

BOX 4

Parcel	Engineering Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Monitoring Wells
	Monitoring Wells
	Monitoring Wells
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Monitoring Wells

Because remaining contamination is present at this Site, ECs and ICs have been implemented to protect public health and the environment for the applicable future use. The Controlled Property has the following ECs:
• a cover system placed over remaining waste
* MGP Area: Six inches of topsoil, underlain by six inches of general fill, underlain by demarcation fabric
* MGP Buffer Area: Six of topsoil underlain by 18 inches of general fill, underlain by demarcation fabric.
* Lower Raceway: Six inches of topsoil underlain by 6-18 inches of general fill, underlain by demarcation fabric
* Vat Area: Six inches of NYSDOT Type 4 underlain by general fill and concrete slabs
* Axton Cross Building Parking Lot: Four inches of asphalt material underlain by a minimum of eight inches of subbase course material underlain by demarcation fabric.
• site access controls
• surface water drainage conveyance

Parcel	Engineering Control
• monitoring wells * SSDS (Axton Cross bldg. only)	"AXTON - CROSS BLDG"

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, including data and material prepared by previous contractors for the current certifying period, if any;

   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; X

(c) nothing has occurred that would constitute a failure to comply with the Site Management Plan, or equivalent if no Site Management Plan exists.

	YES	NO
* Breech in soil composite cover - CM work plan pending	☐	☒

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

Signature of Standby Consultant/Contractor

10-27-2020
Date

BOX 6

Box 6

"AXTON CROSS BLDG"

IC/EC CERTIFICATIONS

Qualified Environmental Professional Signature

I certify that all information in Boxes 2 through 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 Randy Hoose (print name) at AZTECH ENV. TECHNOLOGIES

5 M'Crea Hill Rd

Ballston SPA NY 12020

(print business address)

am certifying as a Qualified Environmental Professional.

Randy Hoose 10-27-2020

Signature of Qualified Environmental Professional | Stamp (Required for PE) | Date

Enclosure 1
Engineering Controls - Standby Consultant/Contractor Certification Form

Site Details **Box 1**

Site No. 314058

Site Name Three Star Anodizing "Plating Vat Area"

Site Address: Market Street Zip Code: 12590
City/Town: Wappingers Falls
County: Dutchess
Site Acreage: ~~8.5~~ 3.0 OF 10.245 ACRES (RHH)

Reporting Period: March 16, 2012 to September 27, 2020

	YES	NO
1. Is the information above correct? AS ADJUSTED	☒	☐
If NO, include handwritten above or on a separate sheet.		
2. To your knowledge has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. To your knowledge has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. To your knowledge 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. To your knowledge is the site currently undergoing development?	☐	☒

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? BOX 2 COMMERCIAL / INDUSTRIAL (RHH)	☒	☐
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 contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

Signature of Standby Consultant/Contractor Date

BOX 3

SITE NO. 314058

"PLATING VAT AREA"

Description of Institutional Controls

Parcel	Owner	Institutional Control
S:6158 B:17 L:162220	Wappinger Falls Estuary	Ground Water Use Restriction Landuse Restriction
		Ground Water Use Restriction Landuse Restriction
		Ground Water Use Restriction Landuse Restriction
		Ground Water Use Restriction Landuse Restriction
		Soil Management Plan Monitoring Plan Site Management Plan
		Soil Management Plan Monitoring Plan Site Management Plan
		Soil Management Plan Monitoring Plan Site Management Plan
		✓ Ground Water Use Restriction ✓ Soil Management Plan ✓ Landuse Restriction ✓ Monitoring Plan ✓ Site Management Plan

A series of ICs are required to implement, maintain and monitor the ECs. The Environmental Notice (EN) requires compliance with the ICs.The EN for this site was recorded on 07/18/16 in Dutchess County under Miscellaneous Records as instrument #2016-122.

The EN ensures that:

- All ECs must be operated and maintained as specified in the Aug. 2018 SMP
- All ECs on the Site must be inspected and certified at a frequency and in a manner defined in the SMP
- Environmental monitoring must be performed as defined in the SMP
- Data and information pertinent to SM for the Controlled Property must be reported at the frequency and in a manner defined in the SMP
- On-site environmental monitoring devices, including but not limited to groundwater

monitoring wells, must be protected and replaced as necessary to ensure continued functioning in the manner specified in the SMP.

"Paving Vat Area"

In addition, the EN places the following restrictions on the property:

• Required compliance with the approved SMP. Restrict the use of groundwater as a source of potable water, without necessary water quality treatment as determined by the New York State Department of Health (NYSDOH) and/or the NYSDEC
• The owner of the Property shall provide information to the NYSDEC to assist it in carrying out its obligation to provide a periodic certification, prepared and submitted by a professional engineer or environmental professional acceptable to the NYSDEC or Relevant Agency, which will certify that the IC/ECs put in place are unchanged from the previous certification, comply with the SMP, and have not been impaired
• The owner of the Property shall continue in full force and effect any IC/ECs required for the Remedy and shall not, through any act or omission, interfere with the NYSDEC's maintenance and monitoring of such controls, unless the owner first obtains permission to discontinue such controls from the NYSDEC or Relevant Agency, in compliance with the approved SMP subject to modifications as approved by the NYSDEC or Relevant Agency
* There shall be no disturbance or excavation of the Property which threatens the integrity of the engineering controls or which results or may result in a significantly increased threat of harm or damage at any site as a result of exposure to soils. • Limit the use and development of the property to commercial or industrial uses.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Monitoring Wells
	Monitoring Wells
	Monitoring Wells
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Monitoring Wells

Because remaining contamination is present at this Site, ECs and ICs have been implemented to protect public health and the environment for the applicable future use. The Controlled Property has the following ECs:
• a cover system placed over remaining waste
* MGP Area: Six inches of topsoil, underlain by six inches of general fill, underlain by demarcation fabric
* MGP Buffer Area: Six of topsoil underlain by 18 inches of general fill, underlain by demarcation fabric.
* Lower Raceway: Six inches of topsoil underlain by 6-18 inches of general fill, underlain by demarcation fabric
* Vat Area: Six inches of NYSDOT Type 4 underlain by general fill and concrete slabs
* Axton Cross Building Parking Lot: Four inches of asphalt material underlain by a minimum of eight inches of subbase course material underlain by demarcation fabric.
• site access controls
• surface water drainage conveyance

Parcel	Engineering Control
• monitoring wells * SSDS (Axton Cross bldg. only)	"Plating Vat Area"

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, including data and material prepared by previous contractors for the current certifying period, if any;

   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
X	☐

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) nothing has occurred that would constitute a failure to comply with the Site Management Plan, or equivalent if no Site Management Plan exists.

YES	NO
X	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

Signature of Standby Consultant/Contractor

Date

Box 6

IC/EC CERTIFICATIONS

"Planting Var Area"

Qualified Environmental Professional Signature

I certify that all information in Boxes 2 through 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 Randy Hoose at Aztech Env. Technologies
print name

5 McCrea Hill Rd

Ballston Spa NY 12020
(print business address)

am certifying as a Qualified Environmental Professional.

Randy Hoose 10-27-2020

Signature of Qualified Environmental Professional | Stamp (Required for PE) | Date

Enclosure 1
Engineering Controls - Standby Consultant/Contractor Certification Form

Site Details **Box 1**

Site No. 314058

Site Name Three Star Anodizing "Lower Raceway AREA"

Site Address: Market Street Zip Code: 12590
City/Town: Wappingers Falls
County: Dutchess
Site Acreage: ~~8.5~~ 1.200 of 10.245 Acres (RH)

Reporting Period: March 16, 2012 to September 27, 2020

	YES	NO
1. Is the information above correct? AS ADJUSTED	☒	☐
If NO, include handwritten above or on a separate sheet.		
2. To your knowledge has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. To your knowledge has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. To your knowledge 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. To your knowledge is the site currently undergoing development?	☐	☒

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed ~~below~~? BOX 2. COMMERCIAL / INDUSTRIAL (RH)	☒	☐
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 contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

Signature of Standby Consultant/Contractor Date

Box 3

SITE NO. 314058

"Lower Raceway AREA"

Description of Institutional Controls

Parcel	Owner	Institutional Control
S:6158 B:17 L:178199	Teckram Realty Co.	Ground Water Use Restriction Landuse Restriction
		Ground Water Use Restriction Landuse Restriction
		Ground Water Use Restriction Landuse Restriction
		Ground Water Use Restriction Landuse Restriction
		Soil Management Plan Monitoring Plan Site Management Plan
		Soil Management Plan Monitoring Plan Site Management Plan
		Soil Management Plan Monitoring Plan Site Management Plan
		✓ Ground Water Use Restriction ✓ Soil Management Plan ✓ Landuse Restriction ✓ Monitoring Plan ✓ Site Management Plan

A series of ICs are required to implement, maintain and monitor the ECs. The Environmental Notice (EN) requires compliance with the ICs.The EN for this site was recorded on 07/18/16 in Dutchess County under Miscellaneous Records as instrument #2016-122.

The EN ensures that:

- All ECs must be operated and maintained as specified in the Aug. 2018 SMP
- All ECs on the Site must be inspected and certified at a frequency and in a manner defined in the SMP
- Environmental monitoring must be performed as defined in the SMP
- Data and information pertinent to SM for the Controlled Property must be reported at the frequency and in a manner defined in the SMP
- On-site environmental monitoring devices, including but not limited to groundwater

monitoring wells, must be protected and replaced as necessary to ensure continued functioning in the manner specified in the SMP.

"Lower Raceway AREA"

In addition, the EN places the following restrictions on the property:

• Required compliance with the approved SMP. Restrict the use of groundwater as a source of potable water, without necessary water quality treatment as determined by the New York State Department of Health (NYSDOH) and/or the NYSDEC
• The owner of the Property shall provide information to the NYSDEC to assist it in carrying out its obligation to provide a periodic certification, prepared and submitted by a professional engineer or environmental professional acceptable to the NYSDEC or Relevant Agency, which will certify that the IC/ECs put in place are unchanged from the previous certification, comply with the SMP, and have not been impaired
• The owner of the Property shall continue in full force and effect any IC/ECs required for the Remedy and shall not, through any act or omission, interfere with the NYSDEC's maintenance and monitoring of such controls, unless the owner first obtains permission to discontinue such controls from the NYSDEC or Relevant Agency, in compliance with the approved SMP subject to modifications as approved by the NYSDEC or Relevant Agency
* There shall be no disturbance or excavation of the Property which threatens the integrity of the engineering controls or which results or may result in a significantly increased threat of harm or damage at any site as a result of exposure to soils. • Limit the use and development of the property to commercial or industrial uses.

Description of Engineering Controls

Box 4

Parcel	Engineering Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Monitoring Wells
	Monitoring Wells
	Monitoring Wells
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Monitoring Wells

Because remaining contamination is present at this Site, ECs and ICs have been implemented to protect public health and the environment for the applicable future use. The Controlled Property has the following ECs:
• a cover system placed over remaining waste
* MGP Area: Six inches of topsoil, underlain by six inches of general fill, underlain by demarcation fabric
* MGP Buffer Area: Six of topsoil underlain by 18 inches of general fill, underlain by demarcation fabric.
* Lower Raceway: Six inches of topsoil underlain by 6-18 inches of general fill, underlain by demarcation fabric
* Vat Area: Six inches of NYSDOT Type 4 underlain by general fill and concrete slabs
* Axton Cross Building Parking Lot: Four inches of asphalt material underlain by a minimum of eight inches of subbase course material underlain by demarcation fabric.
• site access controls
• surface water drainage conveyance

Parcel	Engineering Control
• monitoring wells * SSDS (Axton Cross bldg. only)	"Lower Raceway AREA"

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, including data and material prepared by previous contractors for the current certifying period, if any;

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) nothing has occurred that would constitute a failure to comply with the Site Management Plan, or equivalent if no Site Management Plan exists.

YES	NO
☒	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

Signature of Standby Consultant/Contractor

Date

Box 6

IC/EC CERTIFICATIONS "Lower Raceway AREA"

Qualified Environmental Professional Signature

I certify that all information in Boxes 2 through 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 RANDY HOOSE at AZTECH ENV. TECHNOLOGIES
print name

5 McCrea Hill Rd
Ballston SPA NY 12020
(print business address)

am certifying as a Qualified Environmental Professional.

Randy Hoose 10-27-2020

Signature of Qualified Environmental Professional | Stamp (Required for PE) | Date

Enclosure 1
Engineering Controls - Standby Consultant/Contractor Certification Form

Site Details **Box 1**

Site No. 314058

Site Name Three Star Anodizing "Burned Building / Rubble Area"

Site Address: Market Street Zip Code: 12590
City/Town: Wappingers Falls
County: Dutchess
Site Acreage: ~~8.5~~ 1.51 OF 10.245 ACRES (RHH)

Reporting Period: March 16, 2012 to September 27, 2020

	YES	NO
1. Is the information above correct? AS ADJUSTED	☒	☐
If NO, include handwritten above or on a separate sheet.		
2. To your knowledge has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. To your knowledge has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. To your knowledge 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. To your knowledge is the site currently undergoing development?	☐	☒

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed ~~below~~? BOX 2 COMMERCIAL / INDUSTRIAL (RHH)	☒	☐
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 contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

Signature of Standby Consultant/Contractor Date

"Burned Building/Rubble Area"

BOX 3

SITE NO. 314058

Description of Institutional Controls

Parcel	Owner	Institutional Control
S:6158 B:17 L:180237	ThreeCo Inc.	Ground Water Use Restriction Landuse Restriction
		Ground Water Use Restriction Landuse Restriction
		Ground Water Use Restriction Landuse Restriction
		Ground Water Use Restriction Landuse Restriction
		Soil Management Plan Monitoring Plan Site Management Plan
		Soil Management Plan Monitoring Plan Site Management Plan
		Soil Management Plan Monitoring Plan Site Management Plan
		Ground Water Use Restriction Soil Management Plan Landuse Restriction Monitoring Plan Site Management Plan

A series of ICs are required to implement, maintain and monitor the ECs. The Environmental Notice (EN) requires compliance with the ICs.The EN for this site was recorded on 07/18/16 in Dutchess County under Miscellaneous Records as instrument #2016-122.

The EN ensures that:

- All ECs must be operated and maintained as specified in the Aug. 2018 SMP
- All ECs on the Site must be inspected and certified at a frequency and in a manner defined in the SMP
- Environmental monitoring must be performed as defined in the SMP
- Data and information pertinent to SM for the Controlled Property must be reported at the frequency and in a manner defined in the SMP
- On-site environmental monitoring devices, including but not limited to groundwater

"Buried Building/Rubble Area"

monitoring wells, must be protected and replaced as necessary to ensure continued functioning in the manner specified in the SMP.

In addition, the EN places the following restrictions on the property:

• Required compliance with the approved SMP. Restrict the use of groundwater as a source of potable water, without necessary water quality treatment as determined by the New York State Department of Health (NYSDOH) and/or the NYSDEC
• The owner of the Property shall provide information to the NYSDEC to assist it in carrying out its obligation to provide a periodic certification, prepared and submitted by a professional engineer or environmental professional acceptable to the NYSDEC or Relevant Agency, which will certify that the IC/ECs put in place are unchanged from the previous certification, comply with the SMP, and have not been impaired
• The owner of the Property shall continue in full force and effect any IC/ECs required for the Remedy and shall not, through any act or omission, interfere with the NYSDEC's maintenance and monitoring of such controls, unless the owner first obtains permission to discontinue such controls from the NYSDEC or Relevant Agency, in compliance with the approved SMP subject to modifications as approved by the NYSDEC or Relevant Agency
* There shall be no disturbance or excavation of the Property which threatens the integrity of the engineering controls or which results or may result in a significantly increased threat of harm or damage at any site as a result of exposure to soils. • Limit the use and development of the property to commercial or industrial uses.

Description of Engineering Controls

Box 4

Parcel	Engineering Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Monitoring Wells
	Monitoring Wells
	Monitoring Wells
	Vapor Mitigation
	Cover System
	Fencing/Access Control
	Monitoring Wells

Because remaining contamination is present at this Site, ECs and ICs have been implemented to protect public health and the environment for the applicable future use. The Controlled Property has the following ECs:
• a cover system placed over remaining waste
* MGP Area: Six inches of topsoil, underlain by six inches of general fill, underlain by demarcation fabric
* MGP Buffer Area: Six of topsoil underlain by 18 inches of general fill, underlain by demarcation fabric.
* Lower Raceway: Six inches of topsoil underlain by 6-18 inches of general fill, underlain by demarcation fabric
* Vat Area: Six inches of NYSDOT Type 4 underlain by general fill and concrete slabs
* Axton Cross Building Parking Lot: Four inches of asphalt material underlain by a minimum of eight inches of subbase course material underlain by demarcation fabric.
• site access controls
• surface water drainage conveyance

Parcel	Engineering Control
• monitoring wells * SSDS (Axton Cross bldg. only)	Burned Buildings/Rubble Area

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, including data and material prepared by previous contractors for the current certifying period, if any;

   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
X	☐

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) nothing has occurred that would constitute a failure to comply with the Site Management Plan, or equivalent if no Site Management Plan exists. ✓

YES	NO
X	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

Signature of Standby Consultant/Contractor

Date

Buried Building Rubble AREA"

Box 6

IC/EC CERTIFICATIONS

Qualified Environmental Professional Signature

I certify that all information in Boxes 2 through 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 Randy Hoose (print name) at Azech Env. Technologies
5 McCrea Hill Rd
Ballston Spa NY 12020
(print business address)

am certifying as a Qualified Environmental Professional.

Randy Hoose — 10-27-2020

Signature of Qualified Environmental Professional | Stamp (Required for PE) | Date

EXECUTIVE SUMMARY

This document is required as an element of the remedial program for the Three Star Anodizing Site – Operable Unit 1, located in the Market Street Industrial Park in a suburban area on the west side of the Village of Wappingers Falls, Dutchess County, New York (the "Site"). The Site is managed under the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program administered by NYS Department of Environmental Conservation (NYSDEC). The Site is listed by the NYSDEC (the Department) as a Class 2 Inactive Hazardous Waste Site (ID No. 3-14-058). Class 2 sites are sites that pose a significant threat to public health and/or the environment and action is required.

The NYSDEC has established the periodic review process in order to determine if a site is being managed in accordance with the remedies established for that site in its governing documents. The governing documents for completing this Periodic Review Report (PRR) are the March 31, 2009 Record of Decision (ROD) and, the August, 2018 Site Management Plan (SMP) prepared by ARCADIS. The March, 2009 ROD establishes the remedial goals for the Site; the 2018 SMP governs how the Site will be managed. During the time period between March 16, 2012 and the effective date of the SMP (August 18, 2018), site management was directed by the NYSDEC Project Manager assigned to the Site. Mr. Michael Mason of the NYSDEC directed site activities until April 30, 2018; Mr. David Chuisano of the NYSDEC has directed site activities during the time period between Mr. Masons departure through the present.

The Site is composed of five (5) parcels that collectively comprise Operable Unit-1. Operable Unit-1 includes buildings, remnants of destroyed/demolished buildings, weathered/paved parking areas/access roadways, a lagoon area and, vegetated areas. Investigations conducted at the Site include a remedial investigation (RI) conducted during the period from April, 2001 through April, 2003 and, a supplemental RI conducted between November, 2005 and April, 2006. The findings of these investigations have identified soil and groundwater impacted with volatile organic compounds (VOCs), semi-VOCs and metals that are considered compounds of concern (COCs). Composite soil and/or asphalt covers have been placed on selected areas of the Site; a sub-slab depressurization (SSD) system, that was installed in 2014, is currently operating in the Axton-Cross Building.

Institutional Controls (ICs) were established via a July 1, 2016 Environmental Notice recorded with the Dutchess County Clerk. The Environmental Notice requires compliance with the ICs and outlines the restrictions regarding future use and development of the property. The Environmental Notice also ensures the implementation, maintenance and monitoring of the Engineering Controls (ECs) established for the Site. The ECs implemented for the Site include operating an SSD system at the Axton-Cross Building; installation and maintenance of composite cover systems at various locations, and; installation, sampling and maintenance of a groundwater monitoring well network.

Compliance, Effectiveness and Protectiveness of Remedial Program

Institutional Controls

- ICs are established for the Site in order to prevent future exposure of the public to site-related COCs present within the soil, groundwater and, soil vapor. This is accomplished by controlling disturbances of the subsurface via implementation of ICs and other site restrictions. These ICs and associated site restrictions may not be discontinued without approval by the NYSDEC.
- The ICs implemented for the Site are effective and protective of human health and the environment, and; the Site is currently in compliance with the SMP with respect to ICs and associated restrictions.

Groundwater Monitoring

- Groundwater analytical results obtained from baseline sampling (June, 2015) and the first annual sampling event under the SMP (July 14, 2020) have identified several site-related volatile organic COCs in groundwater. Vinyl chloride (an end-product in the natural degradation of tetracloroethene (PCE)) was identified in several groundwater samples. Vinyl chloride is not currently included in the list of site-related COCs.
- Comparing the VOC analytical results for the June, 2014 and July, 2020 sampling events also suggests that VOC concentrations of site-related COCs have declined. However, it is important to note that additional groundwater monitoring events are necessary in order to evaluate the long-term concentration trends for these compounds in groundwater.
- The analytical results for the sampling events reported herein indicate that the Site-related semi-volatile organic COCs phenanthrene and fluoranthene were identified in one sample at concentrations that are an order of magnitude below their respective groundwater standard.
- The historically common pesticides 4,4'-DDT, alpha-BHC and dieldrin are present in groundwater at some locations in excess of groundwater standards. Pesticides are not identified in either the 2009 ROD or the August, 2018 SMP as site-related COCs.
- PCBs have not been identified in either of the sampling events reported herein. PCBs are not identified in either the 2009 ROD or the August, 2018 SMP as site-related COCs.
- The analytical results for the emerging contaminant sampling indicate that 1,4-dioxane was identified in 10 of the wells sampled during the July 14, 2020 sampling event. The highest concentration detected (11 nanograms per liter (ng/l)) was well below New York States recently established (July 30, 2020) drinking water standard of 1,000 ng/l. Individual concentrations of PFOA and/or PFOS were identified in all of the wells sampled; concentrations in excess of the recently established drinking water standard (10 ng/l) for these compounds were identified in wells MW-10, MW-12 & PZ-2 (PFOA & PFOS); and MW-11 (PFOA).
- The August, 2018 SMP for the Site directs that groundwater be sampled annually for the first five (5) years after its effective date. The first annual groundwater sampling event after the August, 2018 effective date of the SMP was conducted on July 14, 2020. As such, two (2) of a potential three (3) annual groundwater sampling events were not conducted under the SMP. This includes a sampling event for the remainder of 2018 (between August and

December, 2018) and the entirety of 2019.

- Based on the analytical data currently available, the monitoring program outlined in the SMP for groundwater appears to be effective and protective of human health and the environment. However, the Site is not currently in compliance with the monitoring schedule as outlined in the SMP.

Indoor Air Monitoring

- The August, 2018 SMP for the Site directs that indoor air be sampled annually for the first five (5) years after its effective date. Annual indoor air sampling events during the time period reported herein were conducted on August 10, 2017 (prior to the effective date of the August, 2018 SMP); January 7, 2019 and April 23, 2020.
- The indoor air monitoring results for the Axton-Cross building indicate declining concentrations of site-related volatile organic COCs when comparing the results of the August, 2017 indoor air sampling event with the subsequent sampling events in January, 2019 and April, 2020.
- Based on the indoor air monitoring data currently available for the Site, operation of the SSD system and the indoor air monitoring program for the Site as outlined in the SMP are effective and protective of human health and the environment. However, one (1) of a potential three (3) indoor air sampling events was not conducted after the effective date of the SMP (the sampling event for the time period between August and December, 2018). As such, based on the monitoring schedule for indoor air sampling as outlined in the SMP, the Site is not in compliance with the SMP.

Soil Cover Inspection

- The August, 2018 SMP for the Site directs that soil cover inspections be conducted annually for the first five (5) years after its effective date. The soil cover inspection reported herein was conducted in conjunction with an indoor air sampling event in April, 2020. During that inspection, the soil cover systems in the Lower Raceway and the former Plating Vat Area did not identify any breeches in the soil cover systems. Additionally, the soil cover system in the majority of the MGP Area appeared to be in-tact.
- A breech was noted in one portion of the MGP Buffer Area where drainage from the Three-Star Lagoon approaches the Wappinger Creek. This breech appears to be related to erosional activity that has removed a portion of the composite soil cover and exposed both the demarcation layer and underlying soil. Corrective measures are necessary in this area to restore the integrity of the cover system.
- The April, 2020 soil cover inspection was the first annual inspection conducted after the August, 2018 effective date of the SMP. As such, two (2) of a potential three (3) annual soil cover inspections under the SMP were not conducted during the time period reported herein. These include a cover inspection for the remainder of 2018 (between August and December, 2018) and the entirety of 2019.
- The soil cover systems present in the Lower Raceway, the former Plating Vat and most of the MGP Areas are effective and protective of human health and the environment. However, the soil cover system present in the MGP Buffer Area, where drainage from the Three-Star Lagoon approaches the Wappinger Creek, is not presently protective of human

health and the environment; additionally, the Site is not in compliance with the soil cover inspection schedule as outlined in the SMP.

Recommendations

- Site-Related COCs: The August, 2018 SMP for the Site does not identify vinyl chloride as a site-related COC. Since vinyl chloride is an end-product in the natural degradation of PCE (a site-related COC identified in the SMP), Aztech is recommending that vinyl chloride be added to the list of recognized site-related volatile organic COCs.

- Groundwater Monitoring: The current groundwater monitoring program for the Site calls for analysis of VOCs, semi-VOCs, pesticides, PCBs, metals and, the emerging contaminants from groundwater annually. Based on the analytical results of the two (2) initial groundwater sampling events reported herein, Aztech is recommending that analysis for semi-VOCs, pesticides, PCBs and emerging contaminants be removed from the required analytical list at this time. These analytes can be requested for analysis at the discretion of the NYSDEC Project Manager for any future sampling events.

- Indoor Air Sampling: The SMP specifies that the annual indoor air sampling for the Axton-Cross building be via two (2) indoor air samples. Aztech is recommending that an outdoor air sample be collected concurrently during future indoor air sampling events so that a comparison can be made between indoor air quality and outside ambient air.

- SSD System: The SMP does not include any specific provision for conducting routine inspection of the SSD system installed and operating at the Axton-Cross Building. Aztech is recommending that the SSD system be inspected on an annual basis. At a minimum, the following elements are recommended for inclusion in the proposed annual SSD system inspection:
  - Total VOC concentration of the SSD system discharge via screening with a photoionization detector capable of measurement in units of parts per billion (ppb);
  - Measurement of airspeed for the SSD system discharge;
  - Measurement of overall SSD system vacuum;
  - Measurement of wellhead vacuum at each SSD extraction point, and;
  - Measurement of observed sub-slab vacuum at multiple monitoring points throughout the interior of the Axton-Cross Building.

- Soil Cover System – MGP Buffer Area: Corrective measures to restore the soil composite cover in the MGP Buffer Area should be implemented. A corrective measures work plan will be submitted under separate cover.

Frequency of PRR Submittal:

- The SMP currently directs that PRRs be submitted annually; no change to the frequency of PRR submittal is recommended at this time.

Requirements for Discontinuing Site Management:

- The requirements for discontinuing site management have not been met. As such, site monitoring as directed by the SMP should continue at this time.

1.0 INTRODUCTION

This document is required as an element of the remedial program for the Three Star Anodizing Site – Operable Unit 1, located in the Market Street Industrial Park and within a suburban area on the west side of the Village of Wappingers Falls, Dutchess County, New York (hereinafter referred to as the "Site"). The Site is managed under the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program administered by the NYS Department of Environmental Conservation (NYSDEC). The Site is listed by the NYSDEC (the Department) as a Class 2 Inactive Hazardous Waste Site (ID No. 3-14-058). Class 2 sites are sites that pose a significant threat to public health and/or the environment and action is required.

Investigative and remedial activities have been conducted at the Site in accordance with the 2009 Record of Decision (ROD), which was executed on March 31, 2009. Investigations included a remedial investigation (RI) conducted during the period from April, 2001 through April, 2003 and, a supplemental RI conducted between November, 2005 and April, 2006. Remedial efforts conducted at the Site during the time period between 2013 and 2015 included: removal and off-site disposal of impacted soil; installation of soil and asphalt covers in multiple areas; dredging of sediment from the Three Star Lagoon; removal of former plating vats (and their contents); installation of a sub–slab depressurization (SSD) system in the Axton-Cross Building; removal of debris; abatement of asbestos containing materials (ACM), and; restoration of remediated areas.

The NYSDEC has established the periodic review process in order to determine if a site is being managed in accordance with the remedies established for that site in its governing documents. The governing documents for completing this PRR are the March 31, 2009 ROD and, the August, 2018 Site Management Plan (SMP) prepared by ARCADIS. The March, 2009 ROD establishes the remedial goals for the Site; the 2018 SMP governs how the Site will be managed. During the time period between March 16, 2012 and the effective date of the SMP (August 18, 2018), site management was directed by the NYSDEC Project Manager assigned to the Site. Mr. Michael Mason of the NYSDEC directed site activities until April 30, 2018; Mr. David Chuisano of the NYSDEC has directed site activities during the time period between Mr. Masons departure through the present.

The periodic review report (PRR) seeks to evaluate site-specific inspection, monitoring, and other related data that will help to assess whether the remedies (engineering and/or institutional controls) for the Site are being implemented properly. In particular, the PRR compiles pertinent site-related data and evaluates whether the remedies established for the Site remain protective of human health and the environment.

Aztech was issued an initial callout in September, 2011 (callout no. 120136) in which NYSDEC requested a soil boring investigation and pilot testing for a SSD system. Subsequent callouts have been issued to Aztech for: installation of an SSD system; application of chemical reagents

for in-situ soil and groundwater remediation; installation of monitoring wells; emerging contaminant sampling; indoor air sampling, and; ongoing site management.

2.0 SITE BACKGROUND AND HISTORY

The Site is an approximately 10-acre parcel located within the Market Street Industrial Park on the west side of the Village of Wappingers Falls, Dutchess County, New York (**Figure 1**). The Site includes several parcels that comprise Operable Unit-1. Operable Unit-1 includes buildings, remnants of destroyed/demolished buildings, weathered/paved parking areas/access roadways, a lagoon area and, vegetated areas. **Table 1** (below) provides the Section/Lot/Block number for each parcel comprising the Site.

Table 1
Parcels Comprising Three Star Anodizing Operable Unit-1
NYSDEC Site No. 3-14-058

Area Name	Owner	Section	Block	Lot	Size
MGP Area (including Lagoon)	Wappinger Falls Estuary	6158	17	115227	3.195
Axton-Cross Building Area	Wappinger Falls Estuary	6158	17	150250	1.340
Former Plating Vat Area	Three Star Anodizing	6158	17	162220	3.000
Lower Raceway Area	Teckram Realty Co.	6158	17	178199	1.200
Burned Building/Rubble Area	Threeco Inc.	6158	17	180237	1.510

Note:
Information obtained from Dutchess County ParcelAccess (https://gis.dutchessny.gov/parcelaccess/)

The Site is located on the south bank of a meander in the Wappinger Creek approximately 1.5 miles upstream of the Hudson River. Topography of the Site is generally flat, with surface drainage in the direction of the Wappinger Creek. During the time period dating back to 1832, the property has been associated with various industrial operations including textile dyeing operations, a manufactured gas plant, a metal plating facility as well as other smaller-scale industrial operations. Operable Unit-2, which is associated with the Three Star Property but not included in this Periodic Review for Operable Unit-1, includes the sediment deposited in Wappinger Creek adjacent to and downstream (west-of) the Site.

The March, 2009 ROD indicates that the NYSDEC has determined that over 170 years of industrial activity have resulted in the disposal of hazardous wastes (including volatile organic compounds (VOCs), plating-related wastes, petroleum and manufactured gas wastes) that have impacted soil, groundwater and sediments at and near the Site. These impacts have resulted in a significant threat to human health and the environment. Historic industrial operations at the Site include:

- Dutchess Print Works (a.k.a. Dutchess Bleachery) – 1832 thru 1955: Originally located on the north side of the Wappinger Creek (the Creek). By the late 1800's, manufacture of acids and other chemicals associated with the dye operation were conducted on the north side of the Creek and, the remainder of manufacturing operations were performed on the south side of the Creek on land that was filled-in.

  Operations completed at the Site during this time period included dyeing and finishing of rough cotton cloth from other mills. Wastewater generated from these processes were reportedly discharged to the Raceway and Three-Star Lagoon with eventual discharge to the Creek. During the early 20th century, long-term residents reported that water within the

lagoon was often a variety of colors depending on the activities at the mill.

- Wappinger Water, Gas and Electric (with Dutchess Bleachery) – late 1800's thru 1915: Manufactured Gas operations. The gas plant was located in the western portion of the Site on the south side of the Creek and coal was stored in sheds located on both sides of the Creek. Coal cinders were used as fill on-and-around the Site including an area behind a retaining wall on the south bank of the Creek and an area downstream near Creek Road.

- Three Star Anodizing and Watson Metals Products – 1958 thru 1995: Metal plating. Wastewater reportedly discharged to the Three Star lagoon (and subsequently the Creek) at a rate estimated at 20,000 to 60,000 gallons per day. A process for reconditioning electronic equipment was also added to the facility operations in 1972.

Several other businesses, including an automotive repair and warehousing shop and, the Axton-Cross Company (a manufacturer and distributor of chemical products) have also historically operated at the Site.

The Site is currently sub-divided into five (5) areas of concern. These areas are shown on **Figure 2** and include:

- Lower Raceway Area – This area was historically used to drive water wheels early during the industrial revolution and, also, for wastewater discharge and conveyance to the Three-Star Lagoon (a man-made water body at the terminus of the raceway). The raceway area has been filled-in and is currently vegetated; the Three-Star Lagoon remains as a small open surface water body

- Vat Area – This area was the location of 23 former plating vats associated with Buildings 15, 16 and, 17. Both Building 15 and Building 16 have been razed. Building 17 is currently present on the Site but is vacant and in a very deteriorated condition;

- Lagoon Area – This area is the location of the Three-Star Lagoon. This area includes a small, open water ponded area and outlet that drains to the north to the Wappinger Creek. It is bounded to the east by the Axton-Cross Building Area and, to the west, by the MGP Area;

- Axton-Cross Building Area – The Axton-Cross building was formerly occupied by a chemical distributer. It is currently occupied by a storage facility for newsprint paper; a metal fabrication company, and; a granite finishing company, and;

- MGP Area – This area is west-of the Axton-Cross Building and adjacent to the Lagoon Area. The MGP Area is currently vacant and vegetated.

2.1 Previous Investigations

A remedial investigation (RI) was conducted at the Site during the time period between April, 2001 and April, 2003. The purpose of the RI was to evaluate the nature and extent of impacts associated with the historic use of the Site and to evaluate the alternatives for addressing threats to human health and the environment. The RI included researching the Site history and background in order to guide selected locations for sampling surface and subsurface soil; advancement of borings in overburden soil and bedrock; installation of monitoring wells

(completed in overburden soil and bedrock), groundwater sampling and, sampling of surface water and sediment.

A supplemental RI was conducted in November, 2005 and April, 2006 that focused on the 23 plating vats (located in the former Building 16) and groundwater quality in their proximity. A fire associated with this building in May, 2004 exposed the vats and allowed them to accumulate precipitation. The objective of the supplemental RI was to evaluate if the water contained in the vats was impacted (and, to what degree) and, to examine if leakage from those vats had impacted soil and groundwater.

2.1.1 Site Geology

The RI found that most of the overburden underlying Site is composed primarily of sandy, gravelly fill material overlying sand, silt and gravelly sand units at various depths. A dense, organic-rich clay layer (0.4-feet to 2.1-feet in thickness) has been identified within the upper 5.0-feet of native soil material on the south and west portions of the Site. Fill, that included cinders, slag, coke and brick fragments, was identified along the banks of the Three-Star lagoon and the Wappinger Creek. Sediment within the lagoon was comprised of a dark, organic-rich silt overlying a gravelly silt unit. These were underlain by a lower sand and gravel unit. Depth to bedrock is variable, with bedrock present anywhere from 1.0-foot below grade (in the MGP Area) to more than 60-feet below grade in the southern portion of the Site. In general, bedrock is present at approximately 40 feet below grade throughout most of the Site; beneath the Three-Star Lagoon, bedrock was encountered approximately 10-to-15 feet below grade.

The water surface within the Wappinger Creek (and, also, the Three-Star Lagoon) exhibits a tidal influence; groundwater is encountered between 5.0-feet and 10-feet below the ground surface.

2.1.2 Compounds of Concern

Several samples of soil, sediment and groundwater were collected during the RI and Supplemental RI. Laboratory analytical results identified several site-related volatile organic compounds (VOCs), semi-VOCs and inorganic (metal) constituents that comprise the compounds of concern (COCs). The COCs for the Site are:

- <u>VOCs</u>:

1,1,1-trichloroethane (TCA)	tetrachloroethene (PCE)	trichloroethene (TCE)
cis-1,2-dichloroethene (DCE)	toluene	chlorobenzene
ethylbenzene	xylene	

- <u>Semi-VOCs</u>:

acenaphthene	anthracene	benzo(a) pyrene
benzo(a)anthracene	benzo(k)fluoroanthene	chrysene
dibenzo(a,g)anthracene	flouranthene	phenanthrene
pyrene		

- Inorganics (metals):

arsenic (As)	cadmium (Cd)	chromium (Cr)
copper (Cu)	lead (Pb)	mercury (Hg)
nickel (Ni)	zinc (Zn)	cyanide (CN)

2.2 Interim Remedial Measures

The NYSDEC submitted a request to the United States Environmental Protection Agency (USEPA) for an emergency removal of a variety of containers containing known and unknown wastes that were remaining within the on-site buildings. An EPA contractor was mobilized in July, 2004 shortly after a fire that occurred at the Site in May, 2004. The purpose of this mobilization was to clear debris and, remove/stage drums and containers of waste to be removed from Building 17 and other buildings on the Site. During that removal action, the EPA contractor determined that the May, 2004 fire had destroyed (or, significantly damaged) approximately half of the structures on the Site and many of the waste containers were either buried by debris or, were not accessible within the unstable structures. These structures were subsequently razed so that the EPA contractor could complete the removal action.

During the removal action, a total of 230 waste containers were sampled and categorized for removal from the Site. The wastes were consolidated into 66 drums. Additionally, 20 compressed gas cylinders were removed and a 10,000-gallon (approximate) storage tank was pumped-out and cleaned. Some "oil-contaminated" soil was also placed in drums for disposal. A chain link fence was subsequently installed around the Site in May, 2005 in order to restrict access to the former plating vats. Analytical data obtained from composite liquid samples collected from the vats identified elevated concentrations of chromium. Approximately 12,000 gallons of liquid were removed from the vats and disposed as hazardous waste. A larger fence was later installed around the Site (January, 2009) in order to restrict access to the vats, remaining debris and remaining buildings.

2.3 Record of Decision

The RI, and supplemental RI, led to issuance of the ROD in March, 2009. The goals of the ROD were to eliminate or reduce to the extent practicable:

- exposures of persons at or around the Site to VOCs, polycyclic aromatic hydrocarbons (PAHs) and inorganics in soils, groundwater, soil vapor and the lagoon sediments;
- environmental exposures of flora or fauna to PAHs and inorganics in soils and the lagoon sediments;
- the release of contaminants from surface soil into ambient air through wind borne dust, and;
- the release of contaminants from on-site soils into Wappinger Creek surface water and sediments through surface run-off and groundwater migration.

Further, the remediation goals for the Site include attaining to the extent practicable:

- ambient groundwater quality standards through source removal/remediation;

Therefore, the following elements were included in the ROD in order to satisfy its goals:

- Implement a remedial design program to provide the details necessary for the construction, operation, maintenance and monitoring of the remedial program.
- Axton-Cross Building:
  - Remove approximately 7,800 cubic yards of VOC contaminated soil from a 0.2 acre dry-well area with off-site disposal.
  - In-situ treatment of residual contamination where necessary;
  - Achieve groundwater standards for VOCs via natural attenuation;
  - Conduct soil vapor intrusion (SVI) testing, and
  - Mitigate SVI impacts to the Axton-Cross Building if necessary.
- Vat (Building 15/16/17) Area:
  - Properly remove/dispose asbestos containing material (ACM) so that the vat remedy can be implemented;
  - Removal and proper disposal of debris, water and sludge from the 23 plating vats;
  - Clean and demolish vats and dispose off-site;
  - Excavate and properly dispose grossly contaminated soil beneath the vats.
- Lower Raceway Area:
  - Excavate approximately 400 cubic yards of contaminated soil from a 10,000 square-foot area starting at the bridge over the raceway to about 100 feet east of the raceway. Dig to a minimum depth of 1.0-foot and cover with a minimum of 1.0-foot of clean fill and topsoil.
- Lagoon Area:
  - Pump the Three Star Lagoon dry and excavate sediment to a maximum depth of 8.0 feet; properly dispose sediment off-site and replace with ecologically compliant fill to the original depth.
- MGP Area:
  - Remove surface debris;
  - Demolish/dispose gas holder foundations;
  - Excavate and properly dispose grossly impacted soil within the gas holders;
  - Remove trees and other vegetation as needed;
  - Excavate a 25-foot buffer along the Wappinger Creek and Three-Star Lagoon to a depth of 1.0-foot. Cover with 2.0-feet of clean soil fill and topsoil meeting commercial soil clean-up objectives (SCOs – per 6NYCRR Part 375-6.8(b);
  - Cover the balance of the MGP Area with a demarcation barrier and 1.0-foot of clean fill and topsoil
  - Re-plant area with native plants.
- Soil Cover – Various Locations:
  - Apply soil cover to approximately 2.5 acres of the Site in areas near the Axton-Cross Building and other on-site buildings in order to prevent exposure to impacted soils.

  - Place clean soil fill and topsoil meeting commercial SCOs (6NYCRR Part 375-6.8(b)) over a demarcation layer. The top 6.0-inches of the soil cover will be of a sufficient quality to support vegetation.

- Institutional Control - Implement an environmental easement that will impose the following limitations:
  - Limit use and development of the property to Commercial Use;
  - Require compliance with the SMP;
  - Restrict groundwater use as a source for potable water without necessary water quality treatment as determined by NYSDOH, and;
  - Require the property owner(s) to submit to the NYSDEC a periodic certification of the institutional and engineering controls.
- Develop an SMP to include:
  - Manage final cover system to restrict excavation below demarcation layer, pavement or buildings (excavated soil will be tested and properly handled/managed in a manner that is acceptable to the NYSDEC and protective of the health and safety of workers and the nearby community);
  - Continued evaluation of the potential for soil vapor intrusion for any buildings developed on the Site including a provision for mitigation of any impacts identified;
  - Groundwater monitoring
  - Identification of any use restrictions;
  - Fencing to control site access, and;
  - Provisions for continued proper operation and maintenance of the components of the remedy.
- Provide a periodic certification of institutional and engineering controls, prepared by a professional engineer or other expert acceptable to the NYSDEC, until the NYSDEC notifies the property owner that such a certification is no longer needed. The certification will:
  - Verify that the institutional and engineering controls put in place are still in place and unchanged from the previous certification or, are compliant with NYSDEC-approved modifications;
  - Allow the NYSDEC access to the Site, and
  - State that nothing has occurred that will impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the SMP unless otherwise approved by the NYSDEC:

2.4 Remedial Actions

In 2013 – 2015, NYSDEC undertook a program to address the goals identified for the Site in the ROD. This included:

- Removal and proper off-site disposal of impacted soil;
- Installation of soil and asphalt covers in various areas of the Site;
- Dredging of sediment from the Three Star Lagoon;
- Removal of the former plating vats and their contents;
- Installation of a sub-slab depressurization (SSD) system in the Axton-Cross building;
- Removal of debris;

- Abatement of asbestos-containing materials (ACMs), and;
- restoration of remediated areas.

The composition of the cover systems specific to each area are as follows:

- MGP Area: 6.0-inches of topsoil overlying 6.0-inches of general fill. This soil composite overlies a demarcation fabric.
- MGP Buffer Area: 6.0-inches of topsoil overlying 18-inches of general fill. This soil composite overlies a demarcation fabric.
- Lower Raceway Area: 6.0-inches of topsoil overlying up to 18-inches of general fill. This soil composite overlies a demarcation fabric.
- VAT Area: 6.0-inches NYSDOT Type 4 overlying general fill and concrete slabs.
- Axton – Cross Parking Lot: 4.0-inches of asphalt overlying a minimum 8.0-inches of subbase course material. This composite is underlain by a demarcation fabric.

The remedial actions specified above were undertaken with the goal of restoring the Site to commercial or industrial use.

2.5 Engineering/Institutional Controls

Institutional Controls (ICs) were established via a July 1, 2016 Environmental Notice recorded with the Dutchess County Clerk. The Environmental Notice requires compliance with the ICs and outlines the restrictions regarding future use and development of the property. The Environmental Notice also ensures the implementation, maintenance and monitoring of the Engineering Controls (ECs) established for the Site.

2.5.1 Institutional Controls

The following ICs have been established for the Site:

- Groundwater Use Restriction;
- Land Use Restriction;
- Site Management Plan;
- Soil Management Plan;
- Monitoring Plan

Under the terms of the Environmental Notice, the NYSDEC (or, its agent) is obligated to the following:

- All ECs must be operated and maintained as specified in the August, 2018 SMP;
- All ECs must be inspected and certified at a frequency and in a manner specified in the SMP;
- Groundwater and other environmental or public health monitoring must be performed as specified in the SMP;
- Data and information collected under the authority of the SMP must be reported at a frequency (and in a manner) consistent with the SMP;

- On-Site environmental monitoring devices, including but not limited to groundwater monitoring wells, must be protected and replaced as necessary to ensure continued functioning in the manner specified in the SMP.

The Environmental Notice also places the following restrictions on the property:

- Requires compliance with the approved SMP;
- Restricts the use of groundwater as a source of potable water, without necessary water quality treatment as determined by the New York State Department of Health (NYSDOH) and/or the NYSDEC;
- The owner of the property shall provide information to the NYSDEC to assist it in carrying out its obligation to provide a periodic certification, prepared and submitted by a professional engineer or environmental professional acceptable to the NYSDEC (or, relevant agency), which will certify that the ICs/ECs put in place are unchanged from the previous certification, comply with the SMP and, have not been impaired;
- The owner of the property shall continue in full force and effect any ICs/ECs required for the remedy and shall not, through any act or omission, interfere with the NYSDEC's maintenance and monitoring of such controls, unless the owner first obtains permission to discontinue such controls from the NYSDEC (or, relevant agency);
- There shall be no disturbance or excavation of the property which threatens the integrity of the ECs or which may result in a significantly increased threat of harm or damage at any site as a result of exposure to soils;
- Limit the use and development of the property to commercial or industrial uses.

Each of the ICs established for the Site are applicable to each of the five (5) separate parcels that collectively comprise the Site.

The Site is currently in compliance with the ICs and associated restrictions.

2.5.2 Engineering Controls

The following ECs have been established for the Site:

- Vapor Mitigation (Sub-Slab Depressurization) System;
- Cover Systems;
- Monitoring Wells.

<u>Vapor Mitigation</u>

The Sub-Slab Depressurization (SSD) System at the Site was designed by Arcadis with input from Aztech Environmental Technologies (Aztech). The SSD system was installed in 2013 - 2014 by Aztech in a dedicated Equipment Room within a warehouse/storage space in the Axton-Cross building. The SSD system has its own metered utility power feed, is automatic in operation, and does not directly interface with other building systems. Control of the SSD system is provided by a programmable logic controller (PLC) that integrates a power supply, datalogger and, wireless modem that allows remote access and alarm dissemination. The PLC monitors inputs and powers outputs in accordance with a customized control program. The PLC also interfaces

with two Variable Frequency Drives (VFD's), as well as sensors, relays, switches, pushbuttons, and indicator lights.

The SSD system is driven by two (2) 7.5 horsepower regenerative blowers, each equipped with a water knockout vessel, that draw soil vapors from beneath the concrete slab via 14 extraction points. Sub-slab vapors are conveyed via a piping manifold that exits the building through the ceiling and discharges to the atmosphere above the roof line of the building. **Figure 3** presents a general layout for the SSD system at the Axton-Cross Building. It is important to note that this EC applies only to the Axton-Cross building; it is not applicable to the other four (4) parcels that comprise the Site.

Cover Systems

Two (2) types of cover systems have been implemented at the Site. These include soil composite covers (installed in the MGP Area; the MGP Buffer Area; the Lower Raceway Area, and; the former Plating Vat Area), and: a cover layer consisting of subbase course material and asphalt (installed in the parking area of the Axton-Cross building). Cover systems are an EC applicable to the MGP Area; the former Plating Vat Area; the Lower Raceway Area and, the Axton-Cross Building. The Details of the cover system installed in each area were summarized previously in Section 2.4 of this document.

Monitoring Wells:

A network of 27 monitoring wells has been installed over the various phases of site investigation for the purpose of evaluating groundwater quality. Monitoring well locations are shown on **Figure 4**; **Table 2** (below) presents the specifications and status of these monitoring wells. The monitoring well network is an EC that is applicable to each of the five (5) areas of the Site.

Table 2
Monitoring Well Specifications

Well ID	TOC Elevation	Total Depth	Screened Interval	Northing	Easting	Status
MW-1	10.99	21	5.0 - 20	1007439.7500	649376.9900	Good
MW-2	16.11	28	12 - 27	1007393.6090	649089.5256	Good
MW-3	14.83	19.5	9.0 - 19	1007500.3400	949141.3000	Good
MW-4	11.81	18.5	3.0 - 18	1007651.5900	649012.6800	Good
MW-5	NA	18	3.0 - 18	10075825.2300	648923.6100	Good
MW-6	7.60	22	4.0 - 19	1007645.9700	649420.2600	NL
MW-7	3.08	19	3.0 - 18	1007371.4300	649710.5300	NL
MW-8	12.14	21	5.0 - 19	1007716.8600	649867.9700	Abandoned
MW-9	NA	19	4.0 - 19	1007521.1100	649256.7600	Good
MW-10	6.37	18	3.0 - 18	1007682.4600	649505.8300	Good
MW-11	8.96	22	3.0 - 18	1007248.7300	649415.7100	Good
MW-12	4.48	20	2.0 - 17	1007436.8700	649636.6900	Good
MW-13	17.22	30	10 - 25	1007439.3800	649818.4500	Good
MW-14D	5.76	36	29 - 34	1007514.6000	949261.3500	Good

Table 2
Monitoring Well Specifications
(continued)

Well ID	TOC Elevation	Total Depth	Screened Interval	Northing	Easting	Status
MW-15D	7.96	25	20 - 25	1007555.7100	649228.3500	Good
MW-16	7.81	16	5.5 – 15.5	1007550.3600	949231.7700	Good
MW-17	6.59	16	5.0 - 15	1007588.5100	649344.5800	NL
MW-18	5.20	14	3.0 - 13	1007753.5500	649264.5300	NL
MW-19	NA	14.5	9.5 – 14.5	NA	NA	Good
MW-20	NA	20.1	10 – 20	NA	NA	TBD
MW-21D	NA	27.5	22.5 – 27.5	NA	NA	TBD
MW-22D	NA	NA	NA	NA	NA	TBD
PZ-1	NA	10.9	NA	NA	NA	Good
PZ-2	NA	NA	NA	NA	NA	Good
BMW-1	11.51	50	45 - 50	1007618.3900	648959.7000	NL
BMW-2	8.58	66	61 - 66	1007228.8500	649577.8100	NL
BMW-3	11.64	52.5	47 - 52	1007749.7180	649806.7310	Abandoned

Notes:
Depths and elevations given in feet.
NA = Information not available
NL = Well not located
TBD = To be determined

3.0 REMEDY COMPLIANCE, PERFORMANCE, EFFECTIVENESS AND PROTECTIVENESS

The Site is an approximately 10-acre parcel located within the Market Street Industrial Park on the west side of the Village of Wappingers Falls, Dutchess County, New York. The Site includes five (5) separate parcels that comprise the Site. A conversation with the Village of Wappingers Falls Building Department on October 20, 2020 indicates that there were no building permits involving earth-breaking construction activities that were issued during the reporting period herein (March 16, 2012 through September 27, 2020) for any of the five (5) properties comprising the Site.

The monitoring program for the Site during the time period reported herein was directed by the NYSDEC Project Manager assigned to the Site until August, 2018, when the SMP for the Site became effective. The sampling required by the monitoring program specified in the SMP is summarized in **Table 3** below.

Table 3
August, 2018 SMP Monitoring Program

Monitoring Program	Frequency*	Matrix	Analysis**
Groundwater	Annual monitoring for five (5) years	Groundwater	TCL VOCs (8260C) Semi-VOCs (8270C) TAL Metals (6010B) PCBs (8082) Pesticides (8081) 1,4-Dioxane (8270 SIM) PFAs (537)*** Field Parameters
Indoor Air	Annual monitoring for five (5) years	Indoor Air at two (2) locations within the Axton-Cross Building	VOCs (TO-15) for the NYSDEC DERs Vapor Intrusion Target Compound List
Soil Cover	Inspection during each groundwater event specified above	Asphalt and soil covers	Visual Inspection
Periodic Review Report	Annual	NA	NA

Notes:
NA = Not Applicable
* The frequency of events will be conducted as specified until otherwise approved by NYSDEC and the NYSDOH.
** The first round of groundwater samples should be analyzed for all suspected site-related contaminants; the second round of sampling may be modified to eliminate specific parameters based on the analytical results of the first round, with NYSDEC approval.
*** Both linear and non-linear branch isomers.

This PRR will evaluate each component of the monitoring program as directed by the August, 2018 SMP (outlined above in Table 3) in terms of its compliance, performance and, effectiveness and protectiveness with respect to the goals of the ROD.

3.1 Groundwater Monitoring

The groundwater monitoring program for the Site (as directed by the 2018 SMP) includes an initial sampling of 23 monitoring wells. The SMP directs that the first round of groundwater

samples should be analyzed for all site-related contaminants, with the requested analysis for subsequent sampling rounds adjusted (with NYSDEC and NYSDOH approval) based on the results of the initial round. The SMP states that the entire monitoring well network should be sampled annually for the first five (5) years of monitoring. All of the monitoring wells listed above in Table 3 (except MW-7, MW-18, MW-22D and BMW-3) are included in the list of monitoring wells to be sampled annually. It should also be noted that during a recent (July, 2020 inventory of wells on currently present on the Site, that four (4) of the 23 monitoring wells could not be located (MW-6, MW-17, BMW-1 & BMW-2); one (1) well appears to have been abandoned (MW-8), and; the status of two (2) wells needs to be determined (MW-20 & MW-21D). As such, 16 of the 23 monitoring wells specified for annual sampling are currently available for groundwater monitoring activities.

3.1.1 Compliance

The most recent routine groundwater sampling event for the Site was conducted on July 14, 2020. This was the first annual groundwater sampling event conducted after the August, 2018 effective date of the SMP. As such, two (2) of a potential three (3) annual groundwater sampling events were not conducted under the SMP. These include a sampling event for the remainder of 2018 (between August and December, 2018) and the entirety of 2019. Prior to the August, 2018 SMP, a baseline groundwater sampling event was conducted (under the direction of the NYSDEC Project Manager) on June 4, 2015. The next annual groundwater sampling event for the Site is scheduled for the 3rd Quarter, 2021. Based on the groundwater monitoring schedule as outlined in the SMP, the Site is not in compliance with the SMP.

3.1.2 Performance

The sampling commences by locating and opening the wells to be sampled. After allowing groundwater levels within each well to equilibrate with atmospheric conditions, liquid level measurements (i.e. depth to product and depth to water measurements) are obtained using an electronic interface probe calibrated in in 0.01-foot increments. After collecting the liquid level measurements (from the top of the PVC well casing at each location), well purging/sampling commences via low flow methods.

Purging is accomplished using dedicated high density polyethylene (HDPE) tubing (attached to a peristaltic pump) in order to draw groundwater from each well and into a flow-thru cell. The flow-thru cell is equipped with a multi-parameter water quality probe that records the water quality field parameters (WQFPs) of temperature, pH, specific conductance, dissolved oxygen, oxidation-reduction potential, and turbidity. Low flow purging continues until the WQFPs stabilize.

Groundwater samples are collected from each well via a sampling port that is located in a position that is “upstream” of the flow-thru cell. The groundwater samples are transferred directly from the sampling port into laboratory supplied containers (preserved as appropriate)

and stored on ice. The samples are subsequently delivered by laboratory courier following chain-of-custody protocols to the Amherst, New York laboratory facility operated by Test America Laboratories, Inc. (TestAmerica). The groundwater samples were analyzed by TestAmerica for the analytes listed in Table 3.

3.1.3 Effectiveness and Protectiveness

The goal of the March, 2009 ROD is to establish a remedial approach for the Site that is protective of human health and the environment. Ultimately, the goal for the groundwater at the Site would be for groundwater quality to satisfy the standards, criteria and guidance for Class GA groundwater as defined by NYSDEC (TOGS 1.1.1).

VOCs

A review of the groundwater analytical results presented in **Table 4** indicates that concentrations of the volatile organic COCs identified for the Site have declined since the baseline sampling event of June 4, 2015. Additionally, it is important to note that one of the VOCs listed on Table 4 (vinyl chloride) is not identified in the SMP as a site-related COC. However, it has been included on Table 4 because it is an end-product in the degradation of tetrachloroethene (PCE) and, is also a recognized carcinogen. Additional groundwater sampling events are needed to further evaluate the concentration trends for volatile organic COCs in groundwater.

Table 4
Summary of Groundwater Analytical Results
Volatile Organic COCs

Well	Date	VOC	TCE	PCE	DCE	VC*	TCA	CB	Toluene	EB	Xylenes
		Stnd	**5.0**	**5.0**	**5.0**	**2.0**	**5.0**	**5.0**	**5.0**	**5.0**	**5.0**
MW-1	6-4-2015		**24**	**37**	**26**	**9.0**	**7.1**	-	-	-	-
	7-14-2020		**11**	**18**	**17**	**3.2**	3.0	-	-	-	-
MW-2	6-4-2015		**480**	**150**	**1,105**	**17**	**12**	**24**	-	-	2.4
	7-14-2020		**18**	**10**	**18**	**2.2**	-	**5.3**	-	-	-
MW-3	6-4-2015		**54**	**18**	1.2	0.9	2.9	0.9	-	-	-
	7-14-2020		2.6	0.9	2.3	-	-	-	-	-	-
MW-4	6-4-2015		**25**	**9.4**	**81**	**10**	**16**	0.9	-	-	-
	7-14-2020		1.1	0.9	**5.2**	**7.2**	-	-	-	-	-
MW-5	6-4-2015		-	-	-	-	-	-	-	-	-
	7-14-2020		-	-	-	-	-	-	-	-	-
MW-9	6-4-2015		**950**	**3,100**	**570**	**19**	**92**	**24**	**67**	**100**	**560**
	7-14-2020		**90**	**130**	**1,700**	**81**	-	-	-	**110**	**57**
MW-10	6-4-2015		-	-	**5.2**	**5.3**	-	-	-	-	-
	7-14-2020		0.5	-	**5.6**	**4.7**	-	-	-	-	-
MW-11	6-4-2015		-	-	-	-	-	-	-	-	-
	7-14-2020		-	-	-	-	-	-	-	-	-
MW-12	6-4-2015		-	-	**31**	**18**	-	**10**	-	-	-
	7-14-2020		-	-	**6.6**	**11**	-	3.5	-	-	-
MW-13	6-4-2015		-	-	-	-	-	-	-	-	-
	7-14-2020		-	-	-	-	-	-	-	-	-
MW-14D	6-4-2015		**2,000**	**2,800**	**1,800**	-	-	-	**85**	**140**	**480**
	7-14-2020		**1,300**	**98**	**900**	**41**	**26**	-	-	-	**22**
MW-15D	6-4-2015		-	-	**31,000**	**2,300**	-	-	**620**	**440**	**940**
	7-14-2020		-	-	**1,900**	**2,300**	**51**	**450**	**310**	**350**	**900**

Table 4
Summary of Groundwater Analytical Results
Volatile Organic COCs
(continued)

Well	Date	VOC	TCE	PCE	DCE	VC*	TCA	CB	Toluene	EB	Xylenes
		Stnd	5.0	5.0	5.0	2.0	5.0	5.0	5.0	5.0	5.0
MW-16	6-4-2015		**58**	**29**	**3,300**	**520**	-	-	-	-	**50**
	7-14-2020		**19**	**12**	**360**	**130**	-	-	-	-	-
MW-19	6-4-2015		**72**	**54**	**790**	**4.3**	**11**	-	-	-	-
	7-14-2020		NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-20	6-4-2015		**300**	**97**	**3,100**	**190**	**43**	**12**	4.1	**7.9**	**19**
	7-14-2020		NL	NL	NL	NL	NL	NL	NL	NL	NL
MW-21D	6-4-2015		**6.2**	**5.9**	**85**	**35**	**38**	-	-	-	-
	7-14-2020		NL	NL	NL	NL	NL	NL	NL	NL	NL
PZ-1	6-4-2015		**220**	**180**	**1,500**	**120**	-	-	-	-	-
	7-14-2020		**20**	-	**1,500**	**150**	-	-	-	-	-
PZ-2	6-4-2015		**130**	**180**	**700**	**240**	-	-	-	-	-
	7-14-2020		**21**	**55**	**81**	**63**	2.4	-	-	-	-

Notes:
Concentrations given in milligrams per liter (ug/l)
Stnd = Standard for Class GA GW (TOGS 1.1.1)
Value in **BOLD** indicates exceedance of standard
NS = Not Sampled
NL = Not Located
- = indicates Not Detected
TCE = trichloroethene
PCE = tetrachloroethene
DCE = isomers of dichloroethene
VC = vinyl chloride
TCA = 1,1,1-trichloroethane
CB = chlorobenzene
EB = ethylbenzene

The distribution of site-related volatile COCs in groundwater associated with the July 14, 2020 groundwater sampling event is presented on **Figure 5**.

Semi-VOCs

Analysis for semi-VOCs indicated three (3) site-related COCs (anthracene, fluoranthene and pyrene) in one monitoring well (MW-4R) during the baseline sampling event (6-4-2015) at estimated concentrations that were an order of magnitude below the 50 ug/l standard for class GA groundwater as defined by NYSDEC (TOGS 1.1.1). Phenanthrene was identified in several groundwater samples during the July 14, 2020 sampling event. However, this semi-VOC was also identified in an associated laboratory blank at a similar concentration and, as such, is considered a laboratory artifact where identified. The Site-related COCs fluoranthene and pyrene were identified in the sample from well PZ-1 during the July 14, 2020 sampling event at estimated concentrations that were an order of magnitude below the 50 ug/l standard for class GA groundwater as defined by NYSDEC (TOGS 1.1.1). Semi-volatile COCs were not identified in any other sampled monitoring well during the July, 2020 groundwater sampling event.

Metals

Metals analysis identified concentrations of the Site-related metal COCs (As, Cr and/or Ni) in wells MW-3 (As), MW-9 (Cr), MW-11 (As) and MW-12 (As, Cr & Ni) that were in excess of their respective standard for class GA groundwater (TOGS 1.1.1), as defined by NYSDEC, during either the baseline (June, 2015) or July 2020 groundwater sampling event. Metals results for the eight (8) metal COCs (and CN) are summarized in **Table 5**.

Table 5
Summary of Groundwater Analytical Results
Metals

Well	Date	Metal	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	CN
		Stnd	**25**	**5.0**	**50**	**200**	**25**	**0.7**	**100**	**2,000 (GV)**	**200**
MW-1	6-4-2015		-	-	-	1.9	5.9	-	1.5	11	-
	7-14-2020		6.6	-	-	-	4.1	-	-	3.0	-
MW-2	6-4-2015		-	-	-	-	3.2	-	-	-	-
	7-14-2020		5.8	-	4.9	2.0	-	-	-	6.2	-
MW-3	6-4-2015		-	-	8.9	2.6	3.5	-	-	-	-
	7-14-2020		**120**	-	2.2	2.7	5.2	-	-	5.2	-
MW-4	6-4-2015		7.8	0.67	3.2	-	8.9	0.34	-	55	67
	7-14-2020		-	1.5	3.4	2.4	24	0.22	-	1,400	18
MW-5	6-4-2015		-	-	2.8	-	3.7	-	-	10	11
	7-14-2020		-	-	3.7	2.5	-	-	-	1.2	13
MW-9	6-4-2015		6.6	-	**92**	4.0	-	-	2.0	6.2	16
	7-14-2020		-	-	23	3.2	-	-	-	4.3	15
MW-10	6-4-2015		14	-	9.3	-	-	-	2.2	4.9	6.2
	7-14-2020		6.2	-	4.5	-	-	-	-	4.9	9.6
MW-11	6-4-2015		**220**	-	1.6	-	-	0.13	-	3.4	6.6
	7-14-2020		**94**	-	2.7	3.1	4.3	-	-	6.3	7.1
MW-12	6-4-2015		**43**	-	**82**	-	-	-	**440**	1,700	-
	7-14-2020		**55**	-	5.4	-	4.7	-	-	1,300	-
MW-13	6-4-2015		-	-	-	-	6.0	-	-	2.5	11
	7-14-2020		22	-	1.6	2.8	5.3	0.15	-	6.0	8.2
MW-14D	6-4-2015		-	-	-	-	-	-	8.3	16	-
	7-14-2020		-	-	2.5	5.5	4.3	-	4.5	120	5.2
MW-15D	6-4-2015		-	-	-	-	-	-	-	16	6.1
	7-14-2020		8.3	-	1.5	1.7	4.3	-	-	7.0	-
MW-16	6-4-2015		-	-	44	5.2	-	-	-	3.0	13
	7-14-2020		-	1.0	12	8.5	-	-	-	9.8	13
MW-19	6-4-2015		-	-	16	-	-	-	3.1	4.2	6.1
	7-14-2020		NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-20	6-4-2015		-	-	1.1	-	-	-	3.8	-	8.9
	7-14-2020		NL	NL	NL	NL	NL	NL	NL	NL	NL
MW-21D	6-4-2015		-	-	-	-	-	-	-	-	-
	7-14-2020		NL	NL	NL	NL	NL	NL	NL	NL	NL
PZ-1	6-4-2015		-	-	-	-	-	-	-	-	-
	7-14-2020		-	-	3.5	2.5	-	-	-	1.5	10
PZ-2	6-4-2015		-	-	-	-	-	-	-	-	-
	7-14-2020		-	-	2.5	-	-	-	-	2.1	17

Notes:
Concentrations given in milligrams per liter (ug/l)
Stnd = Standard for Class GA GW (TOGS 1.1.1)
Value in **BOLD** indicates exceedance of Standard
NS = Not Sampled
NL = Not Located
- = indicates Not Detected
As = Arsenic
Cd = Cadmium
Cr = Chromium
Cu = Copper
Pb = Lead
Hg = Mercury
Ni = Nickel
Zn = Zinc
CN = Cyanide

PCBs

Polychlorinated biphenyls (PCBs), although not identified in the March, 2009 ROD as a site-related COC, have nevertheless been included in the analytical list for screening purposes during the preliminary rounds of groundwater sampling for the Site. The seven PCB isomers (PCB-1016, PCB-1221, PCB-1232, PCB-1242, PCB-12458, PCB-1254 & PCB-1260) have been analyzed during the June, 2015 baseline and July, 2020 sampling events. PCBs have not been detected in groundwater samples collected during either sampling event.

Pesticides

Pesticides, like PCBs, were not identified in the March, 2009 ROD as site-related COCs. However, they have nevertheless been included in the analytical list for screening purposes during the preliminary rounds of groundwater sampling for the Site. As indicated in **Table 6** below, three (3) pesticide compounds were identified in groundwater at concentrations in excess of their NYSDEC standard for class GA groundwater (TOGS 1.1.1.). These include the compounds 4,4'-DDT (in wells MW-5, MW-15D, PZ-1 and PZ-2); alpha-BHC (in well MW-20), and; dieldrin (in well MW-15D). Each of these compounds are persistent in the environment and either bio-accumulate or bio-magnify in the environment.

Table 6
Summary of Groundwater Analytical Results
Pesticides

Well	Date	Cmpd	4,4'-DDD	4,4'-DDE	4,4'-DDT	Alpha BHC	Delta-BHC	Dieldrin	Endo-II	Gamma BHC	Gamma Chlor
		Stnd	**0.300**	**0.200**	**0.020**	**0.01**	**0.040**	**0.004**	**NA**	**0.050**	**0.050**
MW-1	6-4-2015		-	-	-	-	-	-	-	-	-
	7-14-2020		-	-	0.020	-	-	-	-	-	-
MW-2	6-4-2015		-	-	-	-	-	-	-	-	0.028
	7-14-2020		-	-	-	-	-	-	-	-	-
MW-3	6-4-2015		-	-	-	-	-	-	-	-	-
	7-14-2020		-	-	-	-	-	-	-	-	-
MW-4	6-4-2015		-	-	-	-	-	-	-	0.025	-
	7-14-2020		-	-	-	-	-	-	-	-	-
MW-5	6-4-2015		-	-	-	-	-	-	-	-	-
	7-14-2020		-	-	**0.022**	-	-	-	-	-	-
MW-9	6-4-2015		-	-	-	-	-	-	-	-	-
	7-14-2020		-	-	0.019	-	-	-	-	-	-
MW-10	6-4-2015		-	0.019	-	-	-	-	-	0.010	-
	7-14-2020		-	-	-	-	-	-	-	-	-
MW-11	6-4-2015		-	-	-	-	-	-	-	-	0.014
	7-14-2020		0.013	-	-	-	-	-	-	-	-
MW-12	6-4-2015		-	-	-	-	-	-	-	-	-
	7-14-2020		-	-	-	-	-	-	-	-	-
MW-13	6-4-2015		-	-	-	-	-	-	-	-	-
	7-14-2020		-	-	-	-	-	-	-	-	-
MW-14D	6-4-2015		-	-	-	-	-	-	-	-	-
	7-14-2020		0.012	-	0.018	-	-	-	-	-	-
MW-15D	6-4-2015		0.042	-	-	-	-	**0.062**	0.031	0.016	-
	7-14-2020		-	-	**0.022**	-	-	-	0.035	-	-
MW-16	6-4-2015		-	-	-	-	-	-	-	-	-
	7-14-2020		-	-	0.019	-	-	-	-	-	-
MW-19	6-4-2015		-	-	-	-	-	-	-	-	-
	7-14-2020		NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-20	6-4-2015		-	-	-	**0.013**	0.028	-	-	-	-
	7-14-2020		NL	NL	NL	NL	NL	NL	NL	NL	NL
MW-21D	6-4-2015		-	-	-	0.0086	-	-	-	-	-
	7-14-2020		NL	NL	NL	NL	NL	NL	NL	NL	NL
PZ-1	6-4-2015		-	-	-	-	-	-	-	-	-
	7-14-2020		-	0.014	**0.026**	-	-	-	-	-	-
PZ-2	6-4-2015		-	-	-	-	-	-	-	-	-
	7-14-2020		-	-	**0.021**	-	-	-	-	-	-

Notes:
Concentrations given in milligrams per liter (ug/l)
Stnd = Standard for Class GA GW (TOGS 1.1.1)
Value in **BOLD** indicates exceedance of Standard
All reported concentrations are estimated
NS = Not Sampled
NL = Not Located
- = indicates Not Detected
Endo-II = Endosulfan II
Gamma-Chlor = Gamma Chlordane
Compounds present in an associated blank sample at a similar concentration are not included

Emerging Contaminants

Sampling for the emerging contaminants (1,4-dioxane and the suite of 21 per- and polyfluoroalkyl substances (PFAS)) was incorporated into the monitoring program for the Site at the request of the NYSDEC Project Manager in July, 2018. This was part of NYSDEC's statewide evaluation of current remediation sites with the goal of better understanding the risk posed to New Yorkers by these substances. This initiative was undertaken because these compounds had recently been found present in a number of public drinking water supplies at concentrations that were thought to represent a health concern. 1,4-Dioxane and PFAs had not historically been monitored at remediation sites. Subsequent to the July, 2018 sampling event, the emerging contaminants were added to the analytical program specified in the August, 2018 SMP.

The July, 2018 preliminary sampling event for the emerging contaminants included sample acquisition from a total of four (4) monitoring wells (MW-4, MW-16, MW-19 and PZ-2). The subsequent sampling event (July, 2020), which was conducted under the direction of the SMP, included emerging contaminant analysis from all of the wells included in the groundwater monitoring program. The analytical results are summarized in **Table 7** below.

Table 7
Summary of Groundwater Analytical Results
Emerging Contaminants

Well	Date	Cmpd	1,4-dioxane	PFOA	PFOS	Total PFAs
		Stnd	**1,000**	**10**	**10**	**NA**
MW-1	7-18-2018		NS	NS	NS	NS
	7-14-2020		0.35	3.6	6.8	17.5
MW-2	7-18-2018		NS	NS	NS	NS
	7-14-2020		-	2.0	2.3	12.8
MW-3	7-18-2018		NS	NS	NS	NS
	7-14-2020		-	8.1	9.3	59.6
MW-4	7-18-2018		-	3.7	7.4	22.6
	7-14-2020		-	4.1	6.7	28.5
MW-5	7-18-2018		NS	NS	NS	NS
	7-14-2020		-	2.6	8.9	16.8
MW-9	7-18-2018		NS	NS	NS	NS
	7-14-2020		0.42	3.5	8.9	83.2
MW-10	7-18-2018		NS	NS	NS	NS
	7-14-2020		0.62	**37**	**1,800**	1,992.6
MW-11	7-18-2018		NS	NS	NS	NS
	7-14-2020		1.7	**11**	8.1	35.8
MW-12	7-18-2018		NS	NS	NS	NS
	7-14-2020		0.39	**15**	**28**	73.4
MW-13	7-18-2018		NS	NS	NS	NS
	7-14-2020		11	5.1	4.6	30.7
MW-14D	7-18-2018		NS	NS	NS	NS
	7-14-2020		0.93	2.5	6.0	86.6
MW-15D	7-18-2018		NS	NS	NS	NS
	7-14-2020		5.0	3.4	9.1	21.0
MW-16	7-18-2018		-	6.6	2.9	21.4
	7-14-2020		0.21	8.1	9.0	57.2
MW-19	7-18-2018		-	5.8	8.6	33.3
	7-14-2020		NS	NS	NS	NS

Table 7
Summary of Groundwater Analytical Results
Emerging Contaminants
(continued)

Well	Date	Cmpd	1,4-dioxane	PFOA	PFOS	Total PFAs
		Stnd	**1,000**	**10**	**10**	**NA**
MW-20	7-18-2018		NS	NS	NS	NS
	7-14-2020		NS	NS	NS	NS
MW-21D	7-18-2018		NS	NS	NS	NS
	7-14-2020		NS	NS	NS	NS
PZ-1	7-18-2018		NS	NS	NS	NS
	7-14-2020		-	3.3	5.2	23.8
PZ-2	7-18-2018		-	**16**	**13**	74.3
	7-14-2020		0.13	3.8	7.5	31.0

Notes:
Concentrations given in nanograms per liter (ng/l) or, parts per trillion (ppt)
Stnd = Ambient Water Quality Standard (6NYCRR Part 375)
Value in **BOLD** indicates exceedance of Standard
NA = Not Applicable
NS = Not Sampled
NL = Not Located
- = indicates Not Detected

The analytical results presented above indicate that 1,4-dioxane was identified in 10 of the wells sampled during the July 14, 2020 sampling event. The highest concentration detected (11 nanograms per liter (ng/l)) was well below the recently established (July 30, 2020) drinking water standard of 1,000 ng/l. Individual concentrations of perfluorooctanoic acid (PFOA) and/or perfluorooctanesulfonic acid (PFOS) were identified in all of the wells sampled; concentrations in excess of the recently established drinking water standard (10 ng/l) for these compounds were identified in wells MW-10, MW-12 & PZ-2 (PFOA & PFOS); and MW-11 (PFOA). The distribution of the emerging contaminants identified in groundwater associated with the July 14, 2020 groundwater sampling event is presented on **Figure 6**.

Conclusion

The initial sampling rounds for the groundwater monitoring program for the Site are to evaluate groundwater quality with respect to all suspected site-related COCs. This includes analytes such as PCB's, pesticides and the emerging contaminants; all of which have not been identified in either the ROD or SMP as site-related COCs. The analytical results for the initial sampling events suggest that PCBs are not present in site groundwater and, that some historically common pesticides (4,4'-DDT, alpha-BHC and dieldrin) are present in groundwater at some locations in excess of groundwater standards. Analysis for VOCs has identified several site-related COCs in groundwater. The presence of vinyl chloride (an end-product in the natural degradation of PCE) in several groundwater samples suggests that this compound should be added to the recognized list of volatile organic site-related COCs. Additionally, analysis for the Site-related semi-volatile organic COCs has identified only phenanthrene and fluoranthene in one sample (and at concentrations that are an order of magnitude below their respective groundwater standard). On this basis, Aztech believes that subsequent groundwater monitoring for the Site should require analysis for VOCs and metals only. As such, routine analysis of groundwater samples for PCBs, semi-VOCs and pesticides should not be required for future groundwater monitoring events. Any (or all) of these analytes (including the emerging

contaminants) can be added to specific future sampling events at the discretion of the NYSDEC Project Manager and/or the NYSDOH.

VOC analysis for the two (2) sampling events reported herein also suggests that VOC concentrations of site-related COCs have declined. However, it is important to note that additional groundwater monitoring events are necessary in order to evaluate concentration trends in groundwater. Nevertheless, based on the groundwater monitoring data currently available, the monitoring program for groundwater appears to be effective and protective of human health and the environment.

3.2 Indoor Air Monitoring

The March, 2009 ROD provided for evaluation and mitigation of soil vapor intrusion issues associated with a former drywell at the Axton-Cross Building. Installation of an SSD system was completed in 2014.

3.2.1 Compliance

The monitoring schedule established by the SMP directs that indoor air samples be collected from two (2) locations annually. Analysis of the indoor air samples is for VOCs via analytical method TO-15.

The annual indoor air sampling events during the time period reported herein were conducted on August 10, 2017 (prior to the effective date of the August, 2018 SMP); January 7, 2019 and April 23, 2020. As such, one (1) of a potential three (3) annual indoor air sampling events was not conducted under the SMP. This event is the sampling event for the remainder of 2018 (between August and December, 2018). Based on the monitoring schedule for indoor air sampling as outlined in the SMP, the Site is not in compliance with the SMP.

3.2.2 Performance

The indoor air sampling events are conducted via sampling locations (shown on Figure 3) within the Axton-Cross Building. The samples are collected via 6.0-liter summa canisters over an approximate 7.0-hour duration and shipped to Test Americas' Knoxville, Tennessee laboratory where they are analyzed via analytical method TO-15 for the full list of VOCs. The SSD system remains operating while sample collection is underway.

3.2.3 Effectiveness and Protectiveness

The effectiveness and protectiveness of the SSD system is measured via the analytical results of the annual indoor air samples. **Table 8** presents a summary of the three (3) indoor air sampling events reported herein. The results show declining concentrations of site-related volatile organic COCs when comparing the results of the August, 2017 indoor air sampling event with the subsequent sampling events in January, 2019 and April, 2020. Based on the indoor air monitoring data currently available for the Site, operation of the SSD system and indoor air

monitoring program for the Site are effective and protective of human health and the environment.

Table 8
Summary of Indoor Air Monitoring
Site-Related Volatile Organic COCs

Compound	USEPA/OSWER Vapor Intrusion Guidance	8-10-2017		1-7-2019		4-23-2020	
		IA-01	IA-02	IA-01	IA-02	IA-01	IA-02
PCE	30/300+	-	-	-	-	1.0	1.4
TCE	2.0/20+	-	-	-	-	0.66	0.21
Ethylbenzene	220	59	32	6.5	7.3	5.7	7.5
Total Xylenes	7,000	350	177	33.5	37.2	31.1	41
Toluene	400	470	170	26	25	27	34

NOTES:
Concentrations in micrograms per cubic meter (ug/m³)
PCE = Tetrachloroethene
TCE = Trichloroethene
DCE = Dichloroethene
USEPA Subsurface Vapor Intrusion Guidance = Target indoor air concentration per Table 2A – OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (November, 2002
Only those site-related COCs that were identified in the indoor air samples are included hereon
+ = NYSDOH Ambient Air Guideline/Action Level per NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October, 2006) & amendments

3.3 Soil Cover Inspection

Composite soil covers, consisting of a layer of topsoil underlain by general fill overlying a demarcation fabric, were placed in the MGP Area, the MGP Buffer Area and Lower Raceway area. The cover for the VAT Area includes NYSDOT Type-4 overlying general fill and concrete slabs. The cover for the Axton-Cross Area includes a composite consisting of asphalt and subbase course material overlying demarcation fabric.

3.3.1 Compliance

The monitoring schedule established by the SMP directs that the composite soil covers present at the Site are to be visually inspected during each groundwater sampling event.

The composite soil cover inspection for the Site was conducted in conjunction with the indoor air sampling event conducted in April, 2020. The is because routine, annual groundwater sampling had not commenced until July, 2020. As such, the April, 2020 soil cover inspection was the first annual inspection conducted after the August, 2018 effective date of the SMP. Therefore, two (2) of a potential three (3) annual soil cover inspections events under the SMP were not conducted during the time period reported herein. These include a cover inspection for the remainder of 2018 (between August and December, 2018) and the entirety of 2019. Based on the soil cover inspection schedule as outlined in the SMP, the Site is not in compliance with the SMP.

3.3.2 Performance

The soil cover inspection was conducted at the Site on April 23, 2020. The inspection was

conducted by walking-over and visually observing the condition of the soil cover in the former Plating Vat Area; the Lower Raceway Area; the MGP area and the MGP Buffer area. The MGP Buffer area is the area of the Site that located between the eastern side of the MGP Area and west of the Three-Star Lagoon.

One area of concern was identified during the soil cover inspection. This area is located within the MGP Buffer Area where drainage from the Three-Star Lagoon approaches the Wappinger Creek. As shown in the photos below, it appears that erosional activity has removed a portion of the composite soil cover and exposed both the demarcation layer and underlying soil. No other breeches or defects were noted elsewhere in the MGP Area, the Lower Raceway Area or, the former Plating Vat Area. Corrective measures are necessary in order to restore the soil composite cover in this area

3.3.3 Effectiveness and Protectiveness

The effectiveness and protectiveness of the composite soil covers is measured via maintaining their integrity over the locations where they were installed. The soil covers placed over the Lower Raceway Area, the former Plating Vat Area and most of the MGP Area are in-tact and, as such, are effective and protective of human health and the environment. However, the soil composite cover within the MGP Buffer Area, where drainage from the Three Star lagoon approaches the Wappinger Creek, has been compromised by erosional activity and, as such, is no longer effective and protective of human health and the environment. A Corrective Measures Work Plan to remedy this situation is pending.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Compliance with Site Management Plan

4.1.1 Institutional Controls

- ICs are established for the Site in order to prevent future exposure of the public to site-related compounds present within the soil/fill materials, groundwater and, soil vapor. This is accomplished by controlling disturbances of the subsurface via implementation of ICs and other site restrictions. These ICs and associated site restrictions may not be discontinued without approval by the NYSDEC.

- The Site is currently in compliance with the ICs and associated restrictions.

4.1.2 Groundwater Monitoring

- The August, 2018 SMP the Site directs that groundwater be sampled annually for the first five (5) years after its effective date. The most recent routine groundwater sampling event for the Site was conducted on July 14, 2020. This was the first annual groundwater sampling event conducted after the August, 2018 effective date of the SMP. As such, two (2) of a potential three (3) annual groundwater sampling events were not conducted under the SMP. These include a sampling event for the remainder of 2018 (between August and December, 2018) and the entirety of 2019. Prior to the August, 2018 SMP, a baseline groundwater sampling event was conducted, under the direction of the NYSDEC Project Manager, on June 4, 2015.

- Based on the groundwater monitoring schedule as outlined in the SMP, the Site is not in compliance with the SMP.

4.1.3 Indoor Air Monitoring

- The August, 2018 SMP for the Site directs that indoor air be sampled annually for the first five (5) years after its effective date. Annual indoor air sampling events during the time period reported herein were conducted on August 10, 2017 (prior to the effective date of the August, 2018 SMP); January 7, 2019 and April 23, 2020. As such, one (1) of a potential three (3) annual indoor air sampling events was not conducted after the effective date of the SMP. This event is the sampling event for the remainder of 2018 (between August and December, 2018).

- Based on the monitoring schedule for indoor air sampling as outlined in the SMP, the Site is not in compliance with the SMP.

4.1.4 Soil Cover Inspection

- The August, 2018 SMP for the Site directs that soil cover inspections be conducted annually, in conjunction with groundwater monitoring events. The soil cover inspection was conducted in conjunction with the indoor air sampling event conducted in April, 2020. This is because routine, annual groundwater sampling had not commenced until July, 2020. Therefore, the April, 2020 soil cover inspection was the first annual inspection conducted after the August, 2018 effective date of the SMP. As such, two (2) of a potential three (3) annual soil cover inspections under the SMP were not conducted during the time period reported herein. These include a cover inspection for the remainder of 2018 (between August and December, 2018) and the entirety of 2019.

- Based on the soil cover inspection schedule as outlined in the SMP, the Site is not in compliance with the SMP.

4.2 Effectiveness and Protectiveness

4.2.1 Institutional Controls

- ICs are established for the Site in order to prevent future exposure of the public to site-related COCs in soil, groundwater and/or soil vapor.
- The ICs (and associated restrictions) established for the Site are effective and protective of human health and the environment.

4.2.2 Groundwater Monitoring

- The groundwater analytical results obtained from the June, 2015 baseline and July 14, 2020 sampling events have identified several site-related volatile organic COCs in groundwater.
- VOC analysis has identified vinyl chloride (an end-product in the natural degradation of PCE) in several groundwater samples.
- VOC analysis for the two (2) sampling events reported herein also suggests that VOC concentrations of site-related COCs have declined. However, it is important to note that additional groundwater monitoring events are necessary in order to evaluate the long-term concentration trends for these compounds in groundwater.
- The analytical results for the two (2) initial sampling events reported herein indicate that the Site-related semi-volatile organic COCs phenanthrene and fluoranthene were identified in one sample at concentrations that are an order of magnitude below their respective groundwater standard.
- The historically common pesticides 4,4'-DDT, alpha-BHC and dieldrin are present in groundwater at some locations in excess of groundwater standards. Pesticides are not identified in either the 2009 ROD or the August, 2018 SMP as site-related COCs.
- PCBs have not been identified in either of the two (2) initial sampling events reported herein. PCBs are not identified in either the 2009 ROD or the August, 2018 SMP as site-related COCs.
- The analytical results for the emerging contaminant sampling indicate that 1,4-dioxane was identified in 10 of the wells sampled during the July 14, 2020 sampling event. The highest concentration detected (11 ng/l) was well below the recently established (July 30, 2020) drinking water standard of 1,000 ng/l. Individual concentrations of PFOA and/or PFOS were identified in all of the wells sampled; concentrations in excess of the recently established drinking water standard (10 ng/l) for these compounds were identified in wells MW-10, MW-12 & PZ-2 (PFOA & PFOS); and MW-11 (PFOA).
- Based on the monitoring data currently available, the monitoring program outlined in the SMP for groundwater appears to be effective and protective of human health and the environment.

4.2.3 Indoor Air Monitoring

- The indoor air monitoring results for the Axton-Cross building indicate declining concentrations of site-related volatile organic COCs when comparing the results of the August, 2017 indoor air sampling event with the subsequent sampling events in January, 2019 and April, 2020.
- Based on the indoor air monitoring data currently available for the Site, operation of the SSD system and the indoor air monitoring program for the Site as outlined in the SMP are effective and protective of human health and the environment.

4.2.4 Soil Cover Inspection

- Visual inspection of the soil cover systems in the Lower Raceway Area and the former Plating Vat Area did not identify any breeches in the soil cover systems in these areas.
- The soil cover systems present in the Lower Raceway and former Plating Vat Areas are effective and protective of human health and the environment.
- A breech in the cover system in one portion of the MGP Buffer Area (where drainage from the Three-Star Lagoon approaches the Wappinger Creek) was identified. This breech appears to be related to erosional activity that has removed a portion of the composite soil cover and exposed both the demarcation layer and underlying soil.
- The soil cover system within the balance of the MGP and MGP Buffer Areas appears to be in-tact.
- The soil cover system present in the MGP Buffer Area (where drainage from the Three-Star Lagoon approaches the Wappinger Creek) is not presently protective of human health and the environment; corrective measures are necessary in order to restore the soil composite cover in this area.
- The soil cover system present elsewhere in the MGP Area is protective of human health and the environment.

4.3 Future Periodic Review Report Submittals

- The August, 2018 SMP directs that PRRs for the Site be submitted annually. Aztech is recommending that annual submission of PRRs for the Site is appropriate at this time.
- The requirements for discontinuing site management have not been met. As such, the Site monitoring schedule, as directed by the SMP, should continue at this time.

4.4 Additional Recommendations

- Site-Related COCs: The August, 2018 SMP for the Site does not identify vinyl chloride as a site-related COC. Since vinyl chloride is an end-product in the natural degradation of PCE (a site-related COC identified in the SMP), Aztech is recommending that vinyl chloride be added to the list of recognized site-related volatile organic COCs.
- Groundwater Monitoring: The current groundwater monitoring program for the Site calls for analysis of VOCs, semi-VOCs, pesticides, PCBs, metals and, the emerging contaminants from groundwater annually. Based on the analytical results of the two (2) initial groundwater sampling events reported herein, Aztech is recommending that analysis for semi-VOCs, pesticides, PCBs and emerging contaminants be removed from

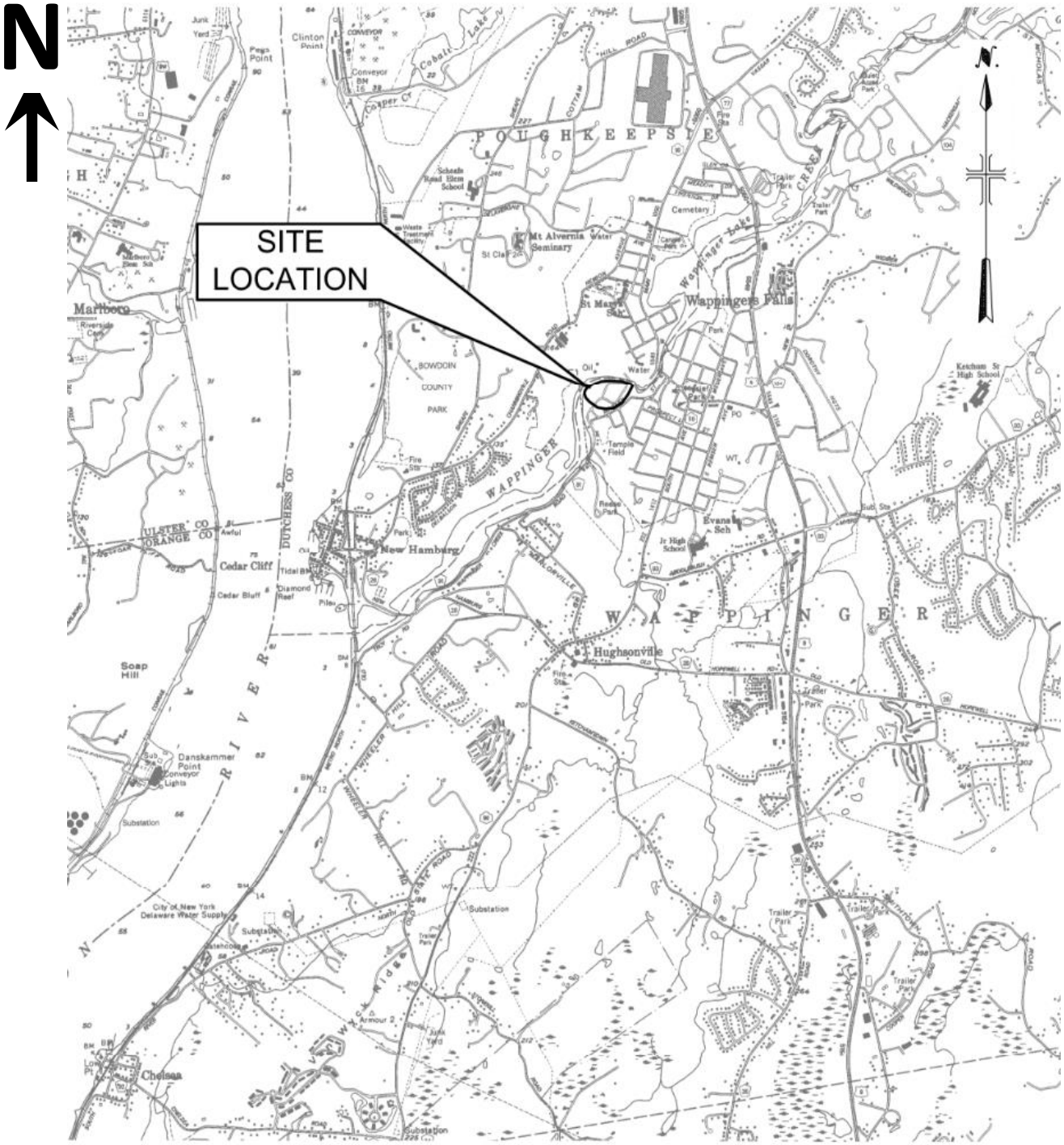
the required analytical list at this time. These analytes can be requested for analysis at the discretion of the NYSDEC Project Manager for any future sampling events.

- Indoor Air Sampling: The SMP specifies that the annual indoor air sampling for the Axton-Cross building be via two (2) indoor air samples. Aztech is recommending that an outdoor air sample be collected concurrently so that a comparison can be made between indoor air quality and outside ambient air.

- SSD System: The SMP does not include any specific provision for conducting routine inspection of the SSD system installed and operating at the Axton-Cross Building. Aztech is recommending that the SSD system be inspected on an annual basis. At a minimum, the following elements are recommended for inclusion in the annual SSD system inspection:
  - Total VOC concentration of the SSD system discharge via screening with a photoionization detector capable of measurement in units of parts per billion (ppb);
  - Measurement of airspeed for the SSD system discharge;
  - Measurement of overall SSD system vacuum;
  - Measurement of wellhead vacuum at each SSD extraction point, and;
  - Measurement of observed sub-slab vacuum at multiple monitoring points throughout the interior of the Axton-Cross Building.

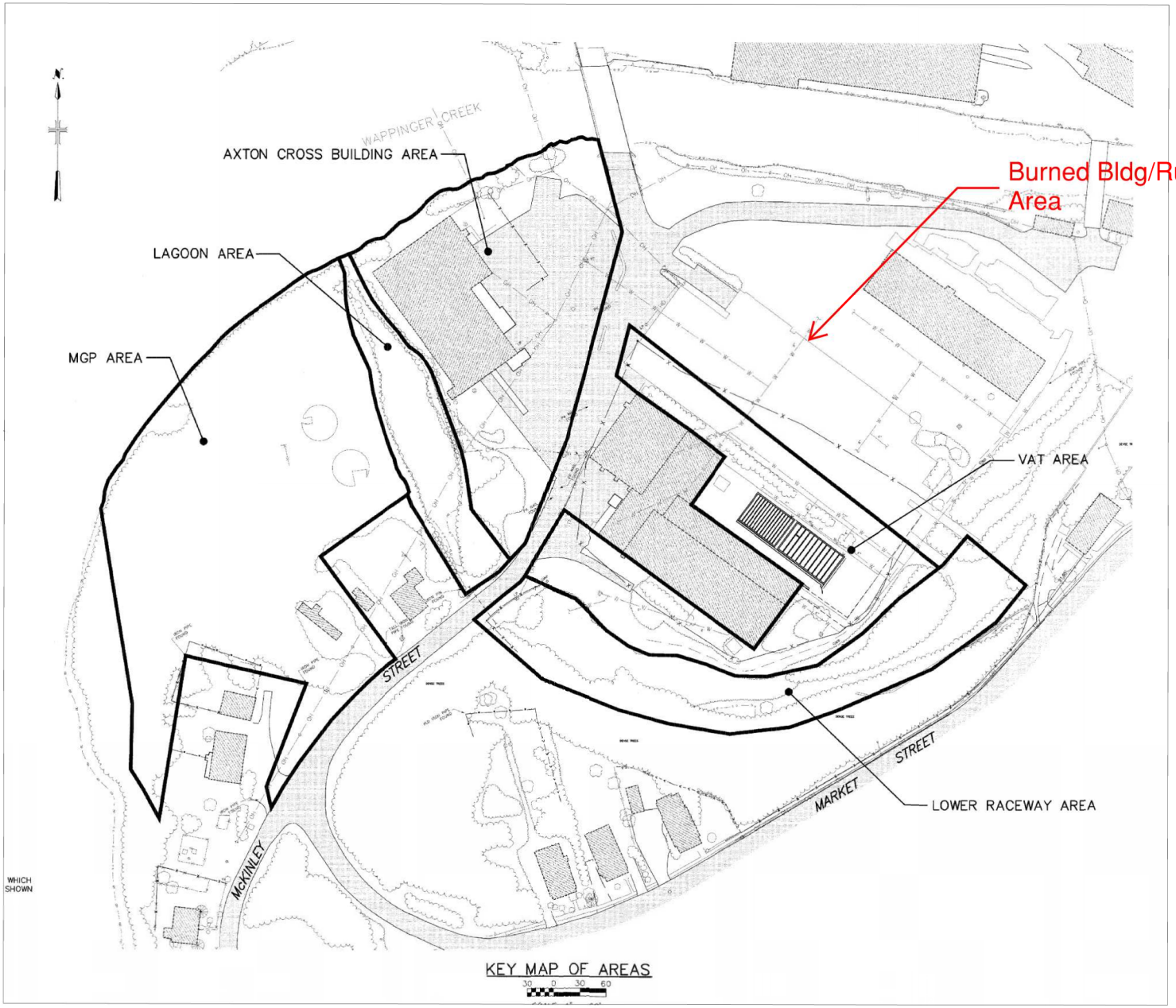
- Soil Cover System – MGP Buffer Area: Corrective measures to restore the soil composite cover in the MGP Buffer Area should be implemented. A corrective measures work plan will be submitted under separate cover.

FIGURES



Source: August, 2018 Site Management Plan

Aztech Environmental TECHNOLOGIES A LaBella Company	**SITE: Three Star Anodizing OU-1** **Wappingers Falls, NY** NYSDEC Site # 3-14-058	Site Location Map
	FIGURE 1	



Aztech Environmental TECHNOLOGIES
A LaBella Company

SITE: Three Star Anodizing OU-1
Wappigers Falls, New York
NYSDEC Site # 3-14-058

FIGURE 2

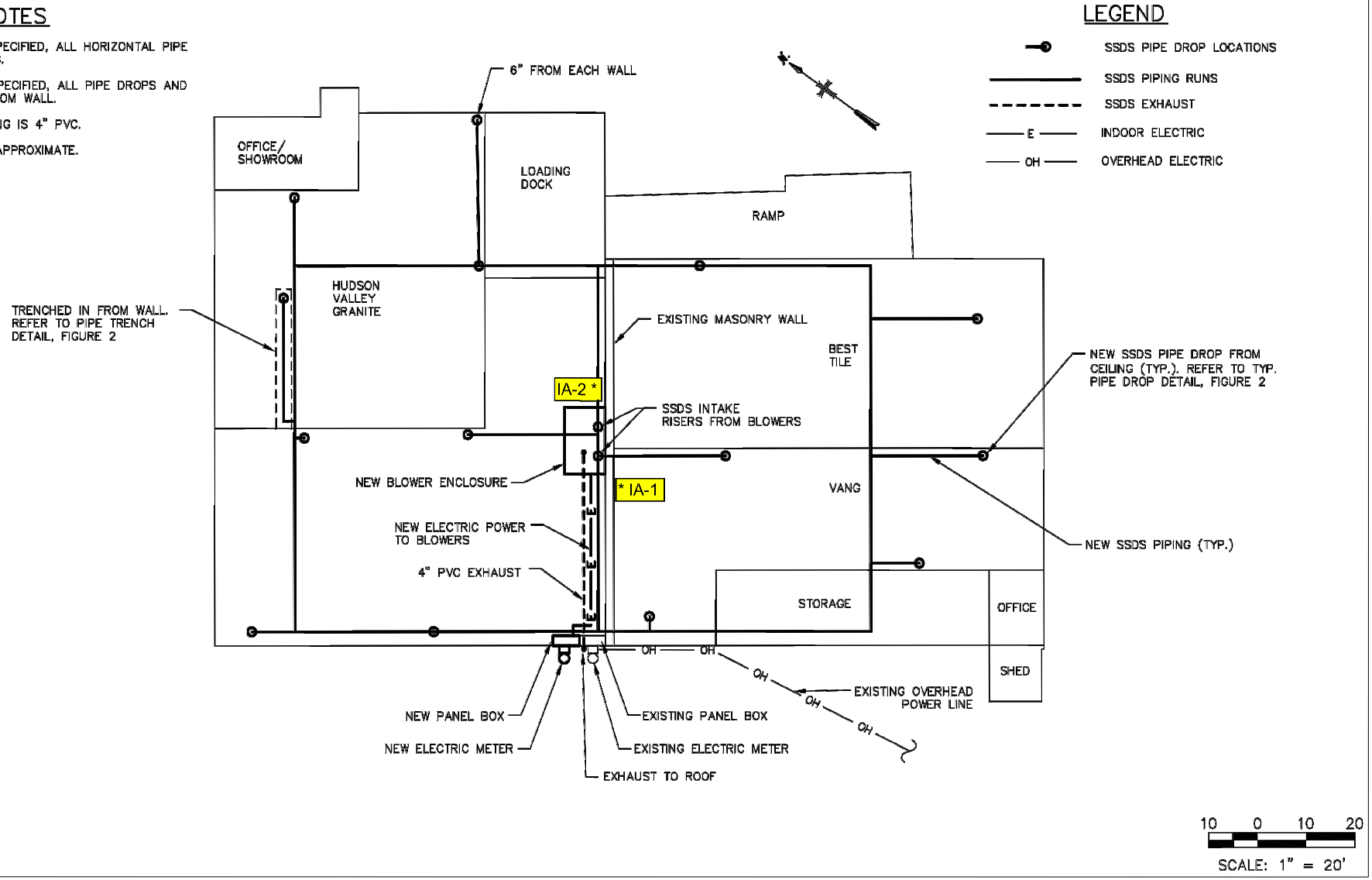
Scale as Shown

Site Map with Areas of Concern

* Source = OU-1 Remedial Construction Contract Drawings (April, 2013)

GENERAL NOTES

1. UNLESS OTHERWISE SPECIFIED, ALL HORIZONTAL PIPE IS RUN ALONG CEILING.
2. UNLESS OTHERWISE SPECIFIED, ALL PIPE DROPS AND PIPE RUNS ARE 6" FROM WALL.
3. ALL HORIZONTAL PIPING IS 4" PVC.
4. ALL DISTANCES ARE APPROXIMATE.



Aztech Environmental TECHNOLOGIES
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SITE: Three Star Anodizing OU-1
Wappigers Falls, New York
NYSDEC Site # 3-14-058

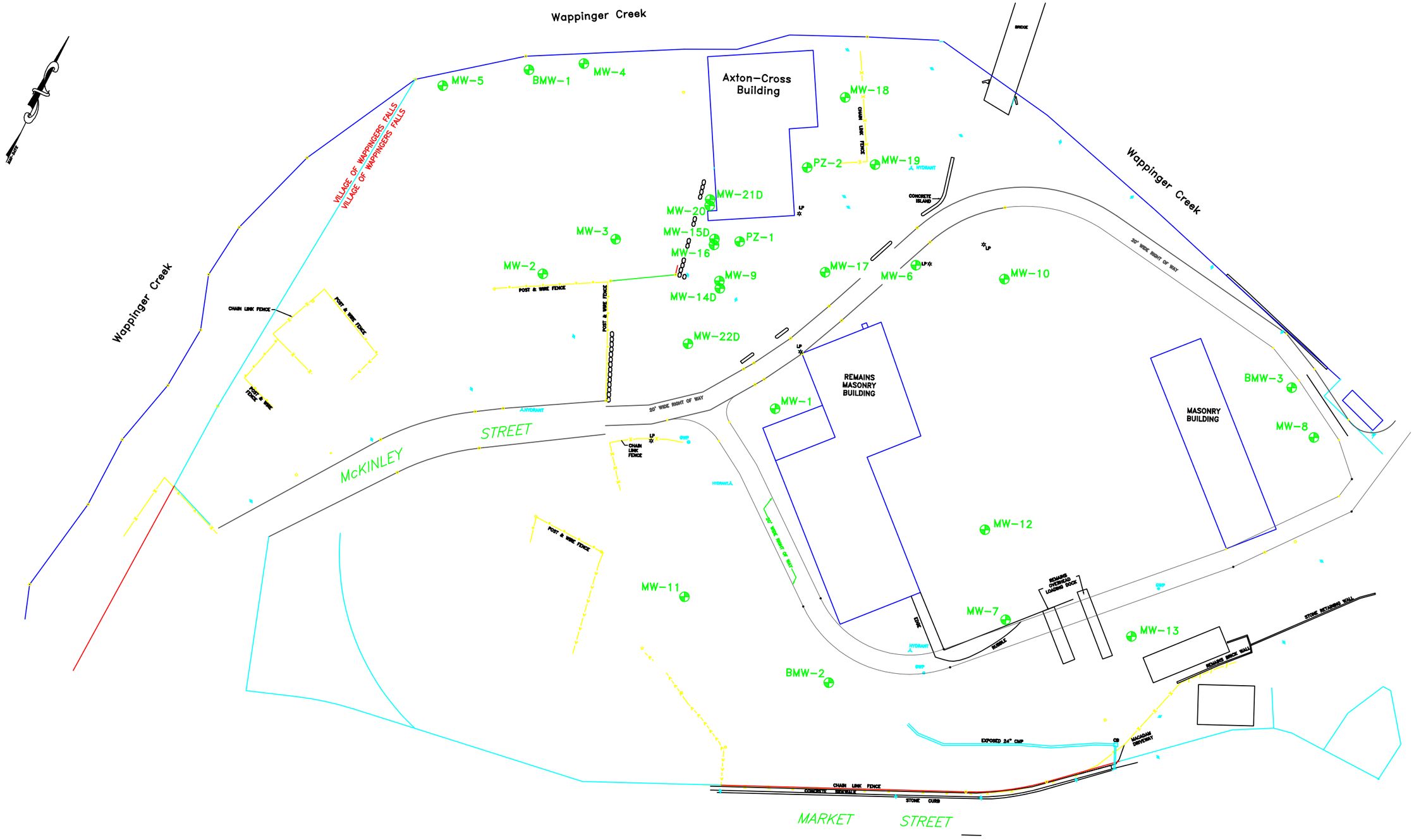
FIGURE 3

Scale as Shown

SSD System with Indoor Air Sampling Locations

* IA-1 Indoor Air Sample Location.

Source = August, 2018 Site Management Plan



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SITE: Three Star Anodizing OU-1
Wappingers Falls, New York
NYSDEC Site # 3-14-058

FIGURE 4

DATE: October, 2020

Scale (feet) 0 25 50 100 150

Site Map with Monitoring Well Locations

MW-4 (Tot V-COC = 14 ug/l)

PCE	TCE	VC	DCE
0.9	1.1	7.2	5.2

MW-5 (Tot V-COC = ND)

PCE	TCE	VC	DCE
ND	ND	ND	ND

PZ-2 (Tot V-COC = 222 ug/l)

PCE	TCE	VC	DCE
55	21	63	81

PZ-1 (Tot V-COC = 1,670 ug/l)

PCE	TCE	VC	DCE
ND	20	150	1,500

MW-9 (Tot V-COC = 2,168 ug/l)

PCE	TCE	VC	DCE
130	90	81	1,700

MW-10 (Tot V-COC = 11 ug/l)

PCE	TCE	VC	DCE
120	0.5	4.7	5.6

MW-3 (Tot V-COC = 5.8 ug/l)

PCE	TCE	VC	DCE
0.9	2.6	ND	2.3

MW-15D (Tot V-COC = 5,961 ug/l)

PCE	TCE	VC	DCE
ND	ND	2,300	1,900

MW-16 (Tot V-COC = 521 ug/l)

PCE	TCE	VC	DCE
12	19	130	360

MW-2 (Tot V-COC = 53 ug/l)

PCE	TCE	VC	DCE
10	18	2.2	18

MW-14D (Tot V-COC = 2,387 ug/l)

PCE	TCE	VC	DCE
98	1,300	41	900

MW-1 (Tot V-COC = 52 ug/l)

PCE	TCE	VC	DCE
18	11	3.2	17

MW-11 (Tot V-COC = ND ug/l)

PCE	TCE	VC	DCE
ND	ND	ND	ND

MW-12 (Tot V-COC = 21 ug/l)

PCE	TCE	VC	DCE
ND	ND	11	6.6

MW-13 (Tot V-COC = ND)

PCE	TCE	VC	DCE
ND	ND	ND	ND

Aztech Environmental TECHNOLOGIES
A LaBella Company

SITE: Three Star Anodizing OU-1

Wappingers Falls, New York

NYSDEC Site # 3-14-058

FIGURE 5

DATE: July 14 2020

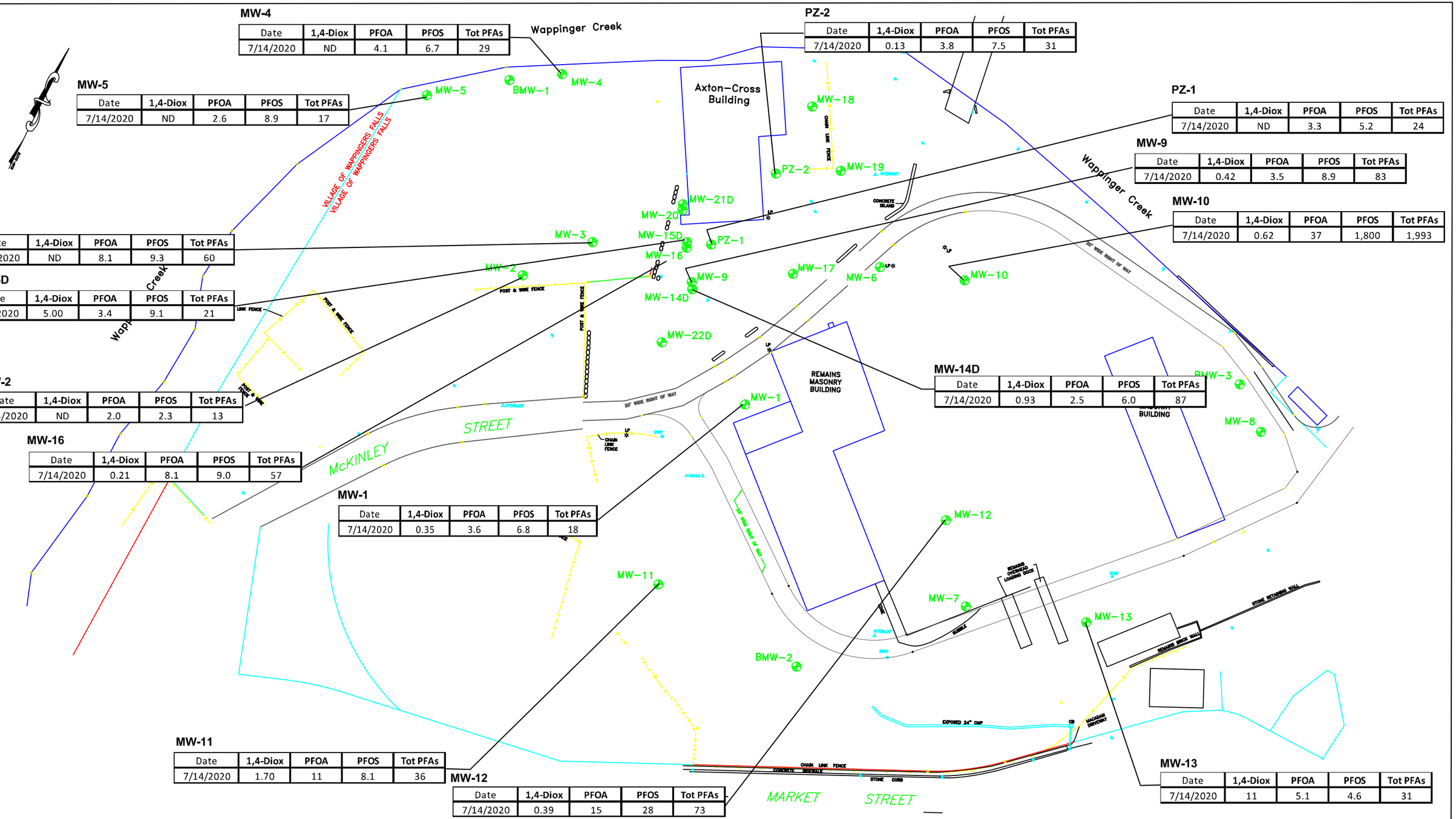
Scale (feet) 0 25 50 100 150

Distribution of Seleceted Volatile/Chlorinated COCs in Groundwater July 14, 2020

Concentrations in micrograms per liter (ug/l)

Wells MW-19, MW-20 & MW-21D were scheduled for sampling but were not located

Tot V-COC = Total Concentration of Volatile COCs in GW ND = Not Detected



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SITE: Three Star Anodizing OU-1
Wappingers Falls, New York
NYSDEC Site # 3-14-058

FIGURE 6

DATE: July 14, 2020

Scale (feet) 0 25 50 100 150

Distribution of Emerging Contaminants in Groundwater
July 14, 2020

Concentrations in nanograms per liter (ng/l)

Wells MW-19, MW-20 & MW-21D were scheduled for sampling but were not located

Tot PFAs = Total Concentration of all PFA compounds in GW ND = Not Detected