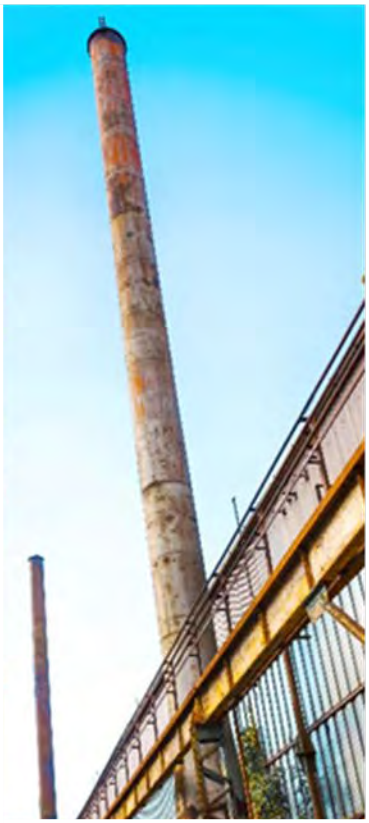
2019 Periodic Review Report

Carborundum – Abrasive Division Site
NYSDEC Site No. 932007
6600 Walmore Road
Wheatfield, New York 14304

Saint-Gobain Abrasives, Inc.



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1. Introduction

1.1 Overview and Certification

In accordance with the requirements provided in Section 6.3(b) of the New York State Department of Environmental Conservation's (NYSDEC) DER-10 *Technical Guidance for Site Investigation and Remediation* (DER-10), Saint-Gobain Abrasives, Inc. (SGA) has prepared this Periodic Review Report (PRR) documenting activities completed at the Carborundum – Abrasive Division Site ("Site") during the reporting period March 1, 2019 to March 1, 2020.

The Site is listed in the State Superfund program with a classification of 4, indicating that the Site has been properly closed but requires continued site management (SM) consisting of operation, maintenance, and/or monitoring. Institutional controls (ICs) and engineering controls (ECs) have been emplaced at the Site to ensure protection of public health and the environment. The ICs for the Site consist of the site management documents titled "Groundwater Sampling & Analysis Plan (SAP)" and "Operations and Maintenance Plan (O&M Plan)", prepared by Frontier Technical Associates Inc. (FTA), dated November 19, 2012. The ECs for the Site consist of a clay cap that was installed in 1982 and four monitoring wells located proximate to the perimeter of the Site ("perimeter monitoring wells"). SM requirements for the Site currently consist of an annual Site inspection, which includes a cap inspection and an inspection and purging of the four perimeter monitoring wells; biennial groundwater monitoring; and cap maintenance.

Frontier Technical Associates, Inc. (FTA) was under contract with SGA to complete the SM requirements until early October 2019. The annual Site inspection was not completed during the 2019 reporting period, however, in response, SGA retained GHD in early April 2020 to perform a Site inspection without the well purging component. The well purging was not performed because it was not considered to be critical, as explained in Section 3.1.2 (in the next to last paragraph on page 5) and Section 4 – Conclusions (2nd bulleted point on page 7 of this report). The wells will be redeveloped prior to sampling in July 2020. GHD performed the Site inspection on April 21, 2020 and did not identify any conditions through a visual inspection that would suggest that the integrity of the cap has been compromised. As such, additional corrective measures (i.e., corrective measures work plan) relative to the Site inspection that was not completed during the reporting period are not required.

The biennial groundwater monitoring event will be performed in July 2020. This event was originally scheduled for summer 2019 and was on hold pending a response from the NYSDEC relative to SGA's request to terminate the groundwater monitoring program in 2019 due to a long period of reported groundwater compound non-detections. Within thirty days of receipt of the laboratory report from this sampling event, SGA will provide the NYSDEC with a brief letter that will serve as an interim data report. The letter will include the validated laboratory results, an overburden potentiometric surface contour map, and a brief statement regarding the significance of the sampling results. The results of this groundwater monitoring event will be used to prepare the IC/EC certification in the 2020 PRR.

2. Site Overview

2.1 Site Location and Features

The Site is located at 6600 Walmore Road in the Town of Wheatfield, Niagara County, New York (Figure 1), and encompasses approximately one acre of land on a greater 54.52-acre parcel identified as Section-Block-Lot (SBL) number 146.00-1-9.2. The greater parcel is owned by Patriot Wheatfield Associates, LP. The remainder of the parcel is occupied by the Saint-Gobain Abrasives facility.

The Site consists of a clay-capped landfill (Figure 2), and is bordered by the Niagara Falls Air Reserve Station and Cayuga Creek to the north; light industrial complexes or undeveloped areas to the east and south; and the Niagara Falls International Airport (NFIA) to the west. The "A" sewer line (West Branch), catch basins A-9 and A-10, and NFTA security fence are also depicted on Figure 2. Catch basin A-9 drains the surface runoff and subsurface drainage from the landfill area.

2.1.1 Monitoring Wells

Four monitoring wells are associated with the Site. Two of the wells, identified as OW2-81 and OW3-81, are located west of the Site on the NFIA property, which is owned by the Niagara Frontier Transportation Authority (NFTA). The two remaining wells, identified as OW4-81 and OW5-81, are located east of the Site in a concrete area. A fifth well, identified as OW1-81, was formerly located within the interior of the landfilled waste and was decommissioned in 1991 because it had fallen into disrepair.

The five monitoring wells OW1-81 through OW5-81 were installed by Empire Soil Investigations, Inc. from January 20th to 22nd, 1981, following placement of the clay cap by Secured Landfill Contractors, Inc. The four perimeter wells, OW2-81 through OW5-81, were installed to the overburden-bedrock interface, or may slightly penetrate the bedrock. Monitoring well OW5-81 extended to the bottom of the landfilled materials. All five wells are/were constructed of two-inch diameter black steel pipe attached to a two-foot long stainless steel slotted well point. All joints were welded during construction. Each well has a lockable cap. Figure 3 illustrates a typical well installation. Table 1 provides the well depths measured by FTA and GHD following redevelopment activities in 1998 and 2018.

2.2 Site History

The former Carborundum – Abrasives Company landfill (Site) was identified by the Inter-Agency Task Force on Hazardous Wastes in a March 1979 report titled *Draft Report on Hazardous Waste Disposal in Erie and Niagara County, New York*. The Site was used from 1968 to 1976 to dispose of wastes generated at the adjacent Carborundum – Abrasives Division plant (currently occupied by Saint-Gobain Abrasives). The wastes were described in the report as "partially solidified and solidified resins, floor sweepings, waste fillers including calcium carbonate, clays and animal glue (estimated 400 tons total) with free phenols (resins) (estimated 800 to 1,600 pounds total)." The wastes were disposed by excavation of a long, narrow trench estimated to be approximately 450 feet long, 20 feet wide, and 12 feet deep. As the wastes were deposited into the trench, a soil cover comprised of the excavated soil (glacio-lacustrine clays) was placed over the waste.

The Carborundum – Abrasives Division ceased operations in 2003. A hydrogeological investigation of the Site was conducted in 1981. Monitoring wells confirmed the presence of phenols in Site groundwater. In late summer of 1982, a remedial program was implemented which consisted of the installation of an improved clay cap over the landfill area.

2.3 Site Geology

The area in the immediate vicinity of the Site is underlain by approximately 10 to 15 feet of clayey to sandy silt, glacio-lacustrine deposits, and glacial till. These deposits thicken southward across the Site. The hydraulic conductivity of these materials is low, estimated to be in the range of 10^{-5} to 10^{-8} m/sec. Figure 4 illustrates a typical surficial geologic cross-section for the Site and surrounding area. Layers of silt and clay fill and silty clay fill that support grass cover are present beneath the ground surface. It is suspected that these fill materials were graded and compacted prior to installation of the concrete area adjacent to the Site. Beneath the silty clay fill is reddish-brown, medium to stiff silty clay, which overlies till comprised of reddish-brown silt to clayey silt. Fill materials encountered in OW1-81 completed within the waste materials included wood, silt, sand, screen materials, paper, and backing cloth used for sandpaper manufacturing. Based on this, it is suspected that most of the materials disposed of in the landfill consisted of general plant trash and off-spec materials and damaged goods from the manufacturing process.

The bedrock underlying the Site consists of approximately 160 feet of dolomite belonging to the Lockport Formation. The upper zone of the Lockport Formation is generally characterized as a highly weathered, medium gray dolomite with extensive vertical fractures. It is generally striated on the surface and has extensive partings which are argillaceous or gypsum-coated. Water produced from this upper zone in the Bergholtz area of Wheatfield is generally of very poor quality, with a characteristic odor. The bedrock surface is generally encountered at elevations between approximately 560 and 570 feet above mean sea level (AMSL) proximate to the Site and dips gently to the south.

The area surrounding the Site is served by a municipal water supply system. Wells that were historically used along Walmore Road to the east were closed as part of a groundwater remediation effort conducted by the former Bell Aerospace-Textron in the late 1980s and early 1990s. The groundwater withdrawal and treatment system on the nearby Bell-Aerospace Textron property is still in operation.

2.4 Site Hydrogeology

Groundwater is encountered at the Site and in the surrounding area in a silty till material immediately overlying bedrock. At the time of the initial investigation in 1981, perched groundwater was observed in landfill monitoring well OW1-81. Installation of the sloped landfill cap coupled with the low permeability of the soils surrounding the landfill resulted in the water within the landfill being contained to the landfill. The source of the water in the landfill is precipitation infiltration. The terrain outside of the capped landfill is relatively flat. Soils remain moist throughout most of the summer west of the Site due to runoff from the airport runways and taxiways and the low permeability of the underlying soils. Groundwater flow at the Site is generally to the east-southeast, and has remained relatively consistent throughout the time period monitored.

3. Site Management and Monitoring

Site management requirements for the Site currently consist of an annual Site inspection; biennial groundwater monitoring; and cap maintenance. Details regarding the Site management requirements are provided in the O&M Plan and SAP, both last revised on 11/19/2012. A summary of the site management and monitoring activities performed at the Site during the reporting period is included below.

3.1 Annual Site Inspection

As per the O&M Plan, the physical attributes of the Site are to be inspected annually in July by a Professional Engineer. This annual Site inspection consists of a cap inspection and inspections and purging of the four perimeter monitoring wells.

3.1.1 Cap Inspection

The cap is intended to prevent contact between Site visitors and personnel and buried wastes in the landfilled area, and consists of low-permeability clay and vegetation (grass). During the annual Site inspection, the cap is inspected visually through a walkover for conditions that could potentially compromise the integrity of the clay cap.

A cap inspection was not completed during the reporting period. A cap inspection was completed during a Site inspection conducted by GHD on April 21, 2020. A completed Site Inspection form is included as Appendix B, and a photographic log of the Site inspection is included as Appendix C. Based on the results of the cap inspection, the cap appears to be in very good condition. No conditions were identified through the visual inspection that would suggest that the integrity of the cap has been compromised. Minor surficial ruts from a lawnmower were observed in an area on the west side of the cap (refer to Appendix C, photo 15). These ruts will be filled with topsoil and reseeded.

3.1.2 Monitoring Well Inspection

As per the O&M Plan, the four perimeter monitoring wells OW2-81 through OW5-81 are to be inspected visually during the Site inspection and purged to remove suspended sediment/biological growth (if present) and to promote groundwater flow through the surrounding low-permeability clay soils.

The required well inspections and purging were not completed during the reporting period. Well inspections were completed during a Site inspection completed by GHD on April 21, 2020. A completed Site Inspection form is included as Appendix B, and a photographic log of the Site inspection is included as Appendix C. All four perimeter wells were inspected. New locks were installed on wells OW3-81 and OW4-81. No conditions requiring immediate repair or maintenance were observed with the exception of the following:

- The riser on OW2-81 is broken off at the concrete slab, leaving the well in an "open" condition (refer to Appendix C, photo 2). This condition requires immediate repair in order to protect the well. A lockable cap and lock will also need to be installed. Following repair of the riser, the top of the riser will need to be surveyed in order to provide a reference elevation for determination of

groundwater elevation. This work will be completed prior to the July 2020 groundwater monitoring event.

- The hinge is broken on the lockable cap on OW5-81, preventing the well from being able to be locked. The lockable cap will either need to be replaced or the hinge repaired, and the well locked. This work will be completed prior to the July 2020 groundwater monitoring event.

As the wells will be redeveloped prior to the summer 2020 groundwater monitoring event (refer to Section 3.2.2), the wells were not purged during the April 21, 2020 Site inspection.

Wells OW2-81 and OW3-81 west of the Site on the NFTA property were last developed by FTA in October 1998, and wells OW4-81 and OW5-81 east of the Site were last developed by GHD on December 17, 2018. Table 1 displays the well depths measured by FTA and GHD following the redevelopment activities and the well depths measured during the April 21, 2020 Site inspection. Based on the well depths measured during the Site inspection compared to the post-redevelopment depths, appreciable sediment buildup requiring additional redevelopment is not present.

A memo describing the December 2018 redevelopment of wells OW4-81 and OW5-81 and associated water level recovery is included as Appendix D. Based on the results of this redevelopment and monitored recovery work and the groundwater sampling last conducted by FTA in 2017, the wells are still expected to produce sufficient groundwater volume for sampling, though recovery is slow due to the low permeability soils surrounding the wells. No major deficiencies relative to the ability of the wells to produce groundwater were observed in the wells during the April 21, 2020 Site inspection. As such, replacement of the wells is not necessary or warranted.

3.2 Biennial Groundwater Monitoring

As per the SAP, groundwater monitoring is performed on a biennial basis (every two years) to assess groundwater flow direction and chemistry and determine the nature and extent of contaminant migration from the Site (if any). Wells downgradient of the Site (OW4-81 and OW5-81) are monitored to evaluate the effectiveness of the clay cap, and wells upgradient of the Site (OW2-81 and OW3-81) are monitored to assess if upgradient groundwater, rather than the Site, might be a source of any downgradient impacts.

The biennial monitoring activities consist of hydraulic gauging, groundwater sampling, and well inspections. The monitoring is performed every two years in July, and was last performed in 2017 by FTA.

3.2.1 Hydraulic Gauging and Well Inspections

Well inspections and hydraulic gauging were performed during a Site inspection conducted on April 21, 2020. Refer to Section 3.1.2 for the results of the well inspections and well depth measurements.

Water levels were measured in the four perimeter monitoring wells during the April 21, 2020 Site inspection. Table 2 displays the measured water levels and resulting overburden groundwater elevations. As the riser on OW2-81 was broken at the time of measurement, the groundwater elevation for this well was estimated using an approximate estimated ground surface elevation obtained from Google Earth. Figure 5 displays an overburden potentiometric surface contour map for the groundwater elevations measured during the Site inspection. Based on the groundwater

elevations, groundwater in the overburden at the Site was flowing in an east-southeasterly direction at the time of measurement. This is generally consistent with the groundwater flow direction observed historically at the Site.

3.2.2 Groundwater Sampling

As per the SAP, the four perimeter monitoring wells and catch basin A-9 are to be sampled on a biennial basis, on odd-numbered years, and analyzed for phenolic compounds via United States Environmental Protection Agency (USEPA) SW-846 Method 8270. In addition, temperature, pH, specific conductivity, and turbidity of the samples are to be measured in the field.

Although the required groundwater monitoring event was not completed during the reporting period due to a 2019 request for groundwater monitoring termination, the groundwater monitoring event will be completed in July 2020. The wells will be redeveloped prior to sampling.

Groundwater sampling was last performed on August 7, 2017 by FTA. Table 3 displays the results of the historical groundwater sampling conducted for the Site. As indicated in the table, phenolic compounds have not been detected at concentrations above the laboratory's reporting limits in any of the groundwater samples collected since 1993, at which time phenol was detected in the sample collected from OW3-81 at a concentration of 32 micrograms per liter (µg/l). This well is located upgradient of the Site.

3.3 Cap Maintenance and Repair

The Site is maintained as part of the routine landscaping schedule associated with the adjoining Saint-Gobain Abrasives facility. No maintenance activities other than routine landscaping was performed at the Site during the monitoring period. In addition, no ground-intrusive activities were performed at the Site during the reporting period.

4. Conclusions

As indicated in Section 1.1, FTA was under contract with SGA to complete the site management requirements until early October 2019. Although the annual Site inspection was not completed during the 2019 reporting period, SGA retained GHD in early April 2020 to perform a Site inspection, without the well purging component. GHD performed the Site inspection on April 21, 2020 and did not identify any conditions through a visual inspection that would suggest that the integrity of the cap has been compromised. In addition, based on the well depths measured during the inspection, appreciable sediment buildup requiring well purging/redevelopment was not identified. The wells will be purged and redeveloped prior to the July 2020 sampling event.

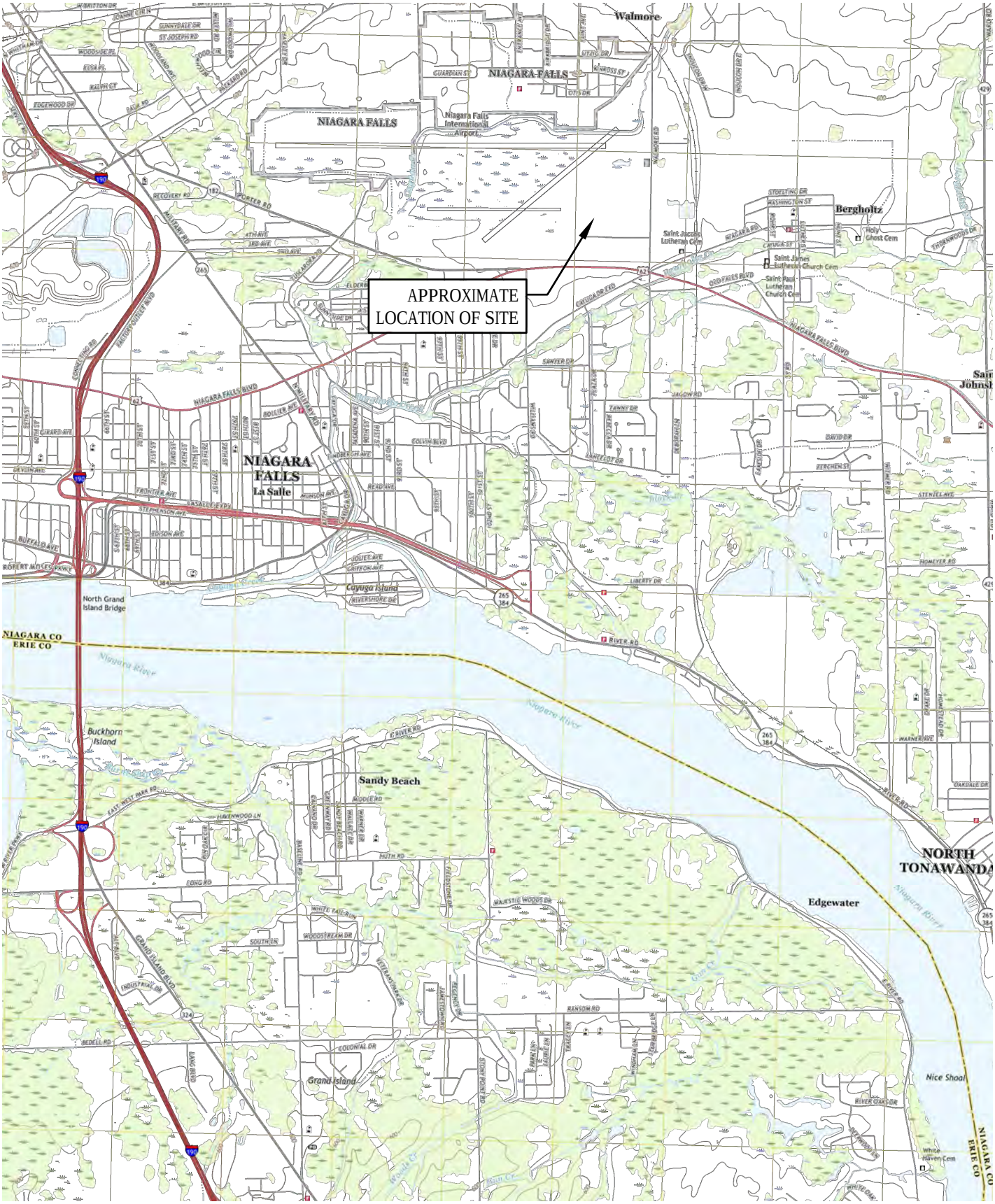
The biennial 2019 groundwater monitoring event was not performed in summer 2019 due to a request to terminate the groundwater monitoring program based on an extensive reporting time of non-detections. As such, the certification in Box 7 (Qualified Environmental Professional Signature) on the Institutional and Engineering Controls (IC/EC) Certification Form located in Appendix A was not able to be completed. The groundwater monitoring will be performed in July 2020. Within 30 days of receipt of the laboratory report from this sampling event, SGA will provide the NYSDEC with a brief letter that will serve as an interim data report. The letter will include the validated

laboratory results, an overburden potentiometric surface contour map, and a brief statement regarding the significance of the sampling results. The results of this groundwater monitoring event will be used to prepare the IC/EC certification in the 2020 PRR. As such, no additional corrective measures or certifications relative to the groundwater monitoring that was not completed during the reporting period are required.

GHD, on behalf of SGA, recommends that the following modifications be made to the Site management requirements:

- **Remove the requirement to submit a stand-alone Groundwater Monitoring Report.** The groundwater monitoring event and associated sampling results are detailed in the annual PRR for the years in which the monitoring occurs. SGA proposes to submit a brief letter to the NYSDEC within 30 calendar days of receipt of the laboratory results for the sampling event which will include the validated laboratory results and comparison to historical sampling results and applicable standards, an overburden groundwater potentiometric surface contour map, and a brief statement regarding the significance of the sampling results. The raw, unvalidated laboratory report would be submitted to the NYSDEC within fourteen calendar days of receipt from the laboratory.
- **Remove the requirement to purge the monitoring wells during the annual well inspections.** Based on the presence of low-permeability soils surrounding the wells, purging the wells on an annual basis likely does not significantly promote improved flow to the wells. In addition, although not required in the current SAP, it appears that FTA collected groundwater quality parameter readings (temperature, pH, specific conductivity, and turbidity) of the water purged from the wells in years in which the wells were not sampled. As the wells purge dry after removal of one well volume, these parameter readings for the purged water represent stagnant water and are much less meaningful than the parameter readings obtained upon sampling the recharged groundwater (as is done during the biennial sampling events).

  As these annual purging activities do not provide benefit to overall Site management, SGA proposes removing the well purging component of the annual well inspections, and instead redeveloping the wells prior to the sampling events. The wells would be purged dry during the redevelopment and samples would be collected when the wells have recovered sufficiently to produce the required sample volume. Groundwater levels, well depths, and well conditions would still be recorded during the annual well inspections. If a well depth measurement indicated at least 0.50 feet of sediment/sand infilling relative to the post-redevelopment depths measured by FTA in 1998 and GHD in 2018, the well(s) would be redeveloped following the annual inspection to prevent further accumulation/compaction of sediment.
- **Remove the requirement to use a peristaltic pump to purge and sample the monitoring wells during the biennial groundwater sampling events.** As the wells purge dry after removal of approximately one well volume, and sampling is conducted upon production of a sufficient volume of recharge water, use of a peristaltic pump during purging and sampling to attempt to produce low-flow sampling conditions is not warranted. SGA proposes that each well be purged dry with a dedicated bailer and then sampled (upon presence of sufficient recharge) by gently lowering the bailer into the recharged well to reduce turbidity.



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, TONAWANDA WEST, NY 2019

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0 4000'

CARBORUNDUM - ABRASIVE DIVISION SITE
NYSDEC SITE No. 932007 - 6600 WALMORE ROAD
WHEATFIELD, NEW YORK

SITE LOCATION MAP

Project No. 11212053
Report No. 001
Date APR 2020

FIGURE 1

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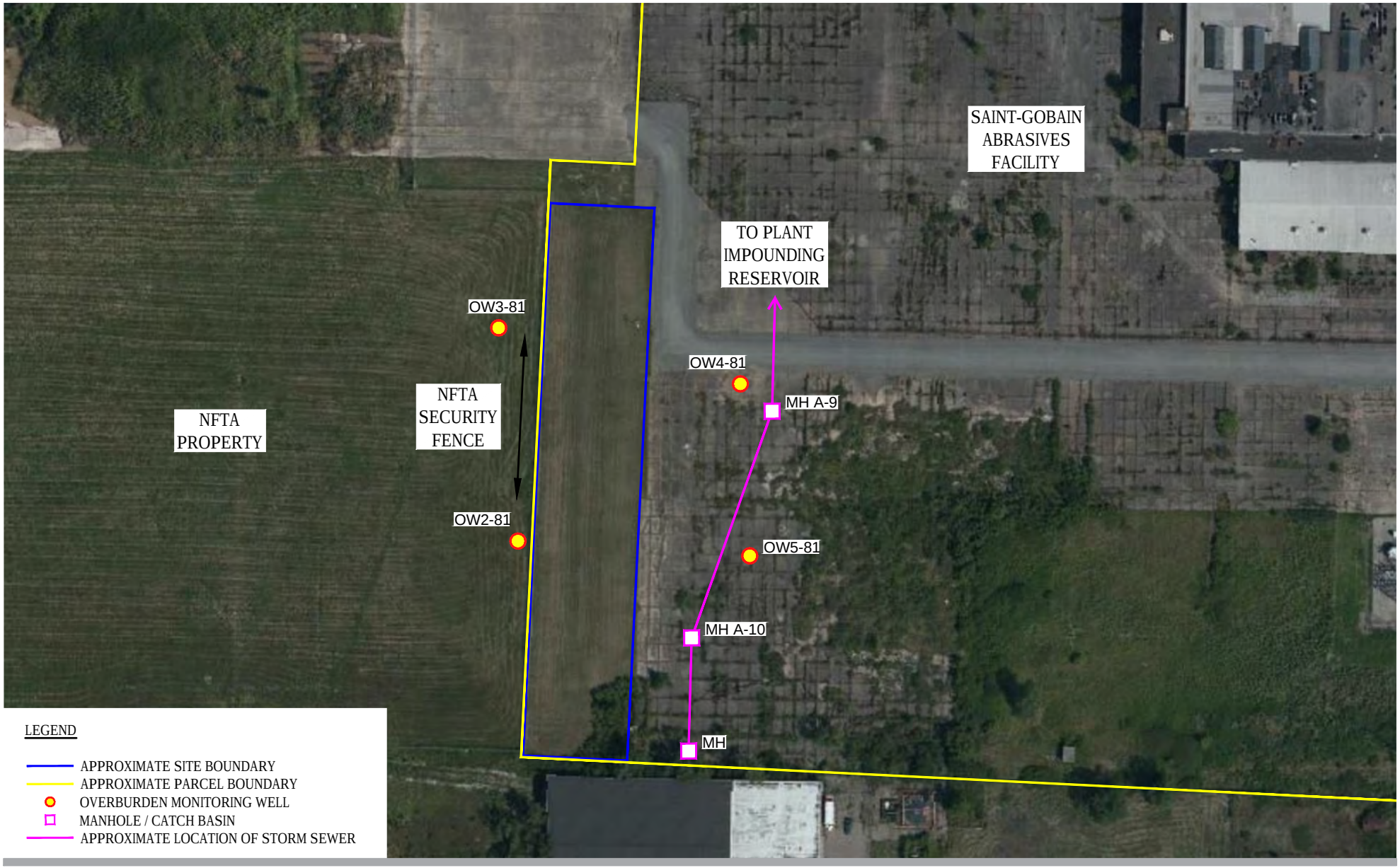

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0 120'

CARBORUNDUM - ABRASIVE DIVISION SITE
NYSDEC SITE No. 932007 - 6600 WALMORE ROAD
WHEATFIELD, NEW YORK

SITE PLAN

Project No. 11212053
Report No. 001
Date APR 2020

FIGURE 2

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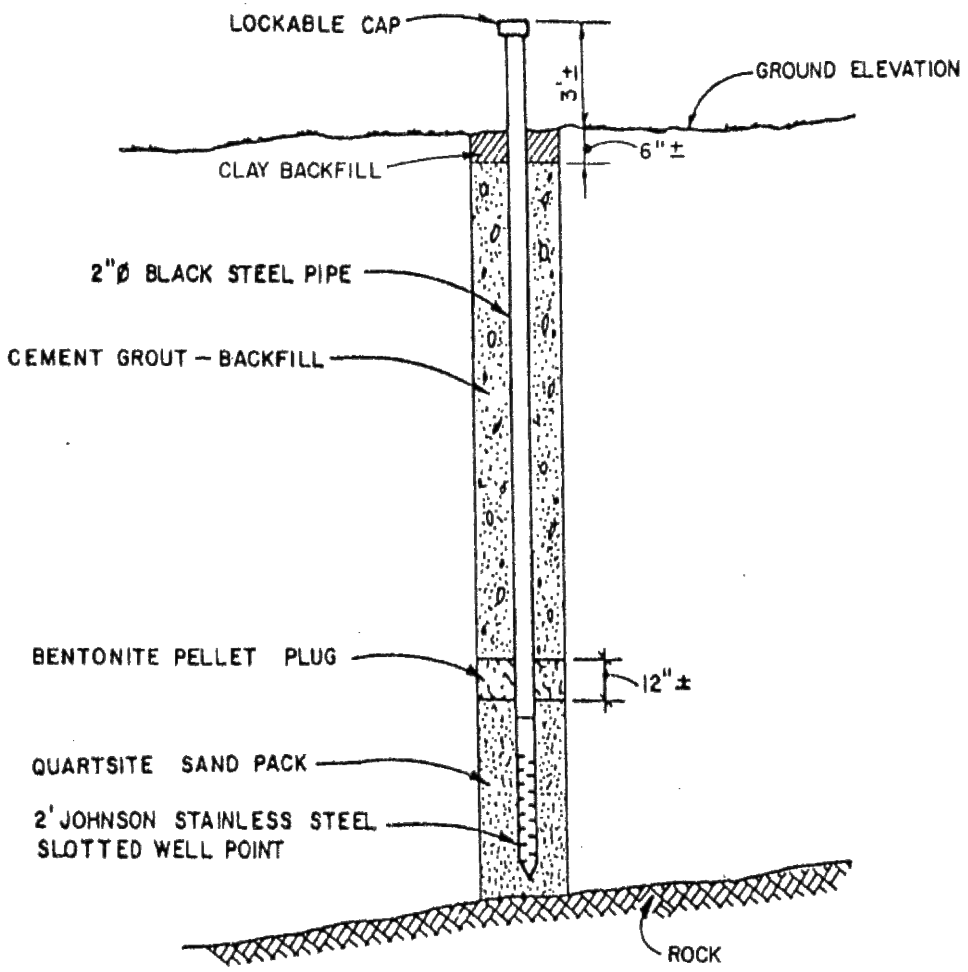

TAKEN FROM "PERIODIC REVIEW REPORT, INACTIVE LANDFILL AREA, SAINT-GOBAIN ABRASIVES, INC," FRONTIER TECHNICAL ASSOCIATES REPORT ET-19-703PRR, DATED MARCH 19, 2019.

CARBORUNDUM - ABRASIVE DIVISION SITE
NYSDEC SITE No. 932007 - 6600 WALMORE ROAD
WHEATFIELD, NEW YORK

TYPICAL MONITORING WELL INSTALLATION

Project No. 11212053
Report No. 001
Date APR 2020

FIGURE 3

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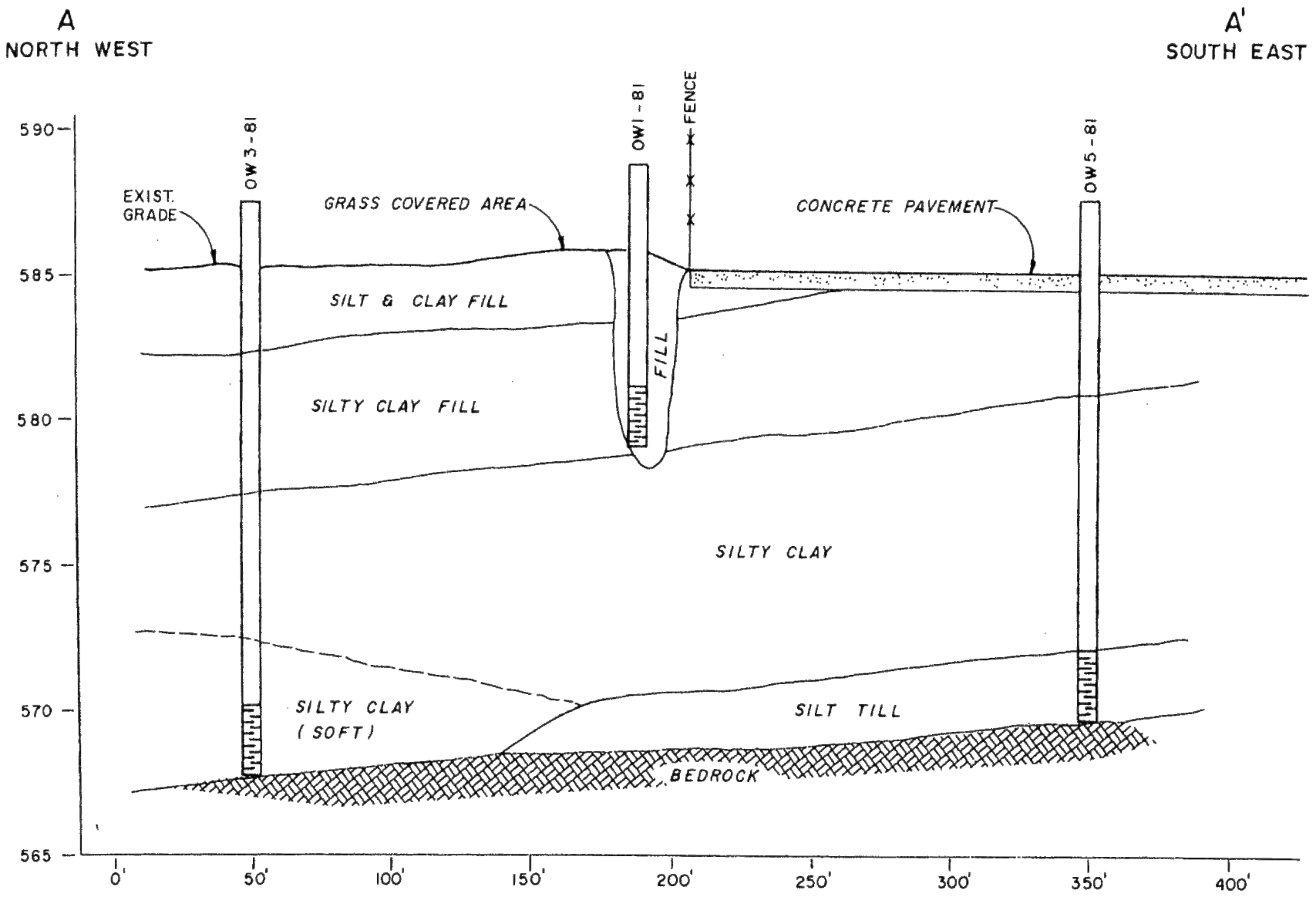

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CARBORUNDUM - ABRASIVE DIVISION SITE
NYSDEC SITE No. 932007 - 6600 WALMORE ROAD
WHEATFIELD, NEW YORK

TYPICAL SURFICIAL
GEOLOGIC CROSS-SECTION

Project No. 11212053
Report No. 001
Date APR 2020

FIGURE 4

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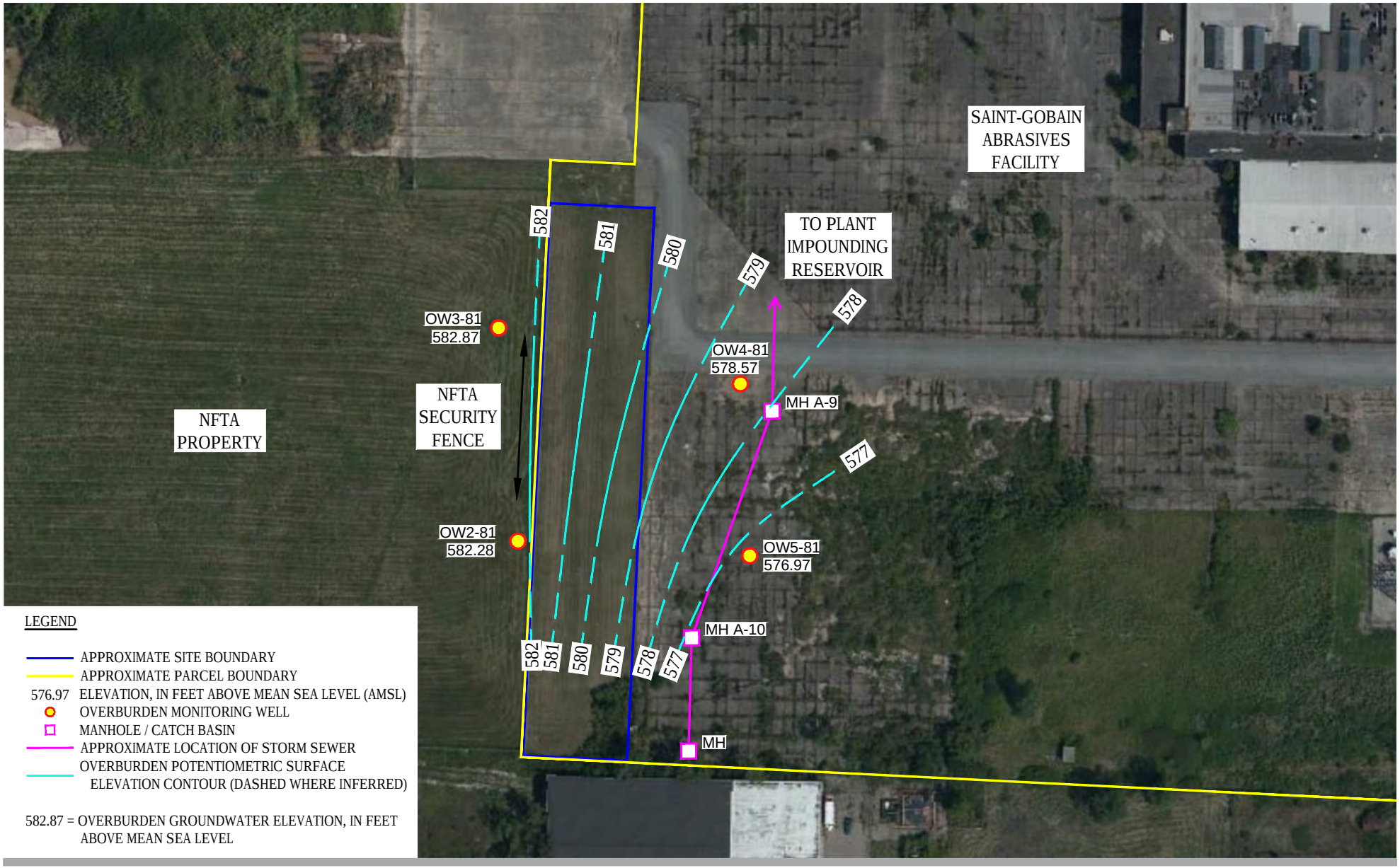

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0 120'

CARBORUNDUM - ABRASIVE DIVISION SITE
NYSDEC SITE No. 932007 - 6600 WALMORE ROAD
WHEATFIELD, NEW YORK

OVERBURDEN POTENTIOMETRIC SURFACE MAP - APRIL 21, 2020

Project No. 11212053
Report No. 001
Date APR 2020

FIGURE 5

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Plot Date: 23 April 2020 - 9:47 AM

Table 1

Sounded Well Depths - 2020
Carborundum - Abrasive Division Site
NYSDEC Site No. 932007
Wheatfield, New York

Well Number	Top of Riser Elevation ft. AMSL	Sounded Well Depth (ft. BTOR) 10/22/98*	12/17/18*	4/21/20
OW2-81	588.50	18.20	NA	14[(1)]
OW3-81	587.59	19.66	NA	19.65
OW4-81	587.74	19.38	19.06	19.95
OW5-81	587.52	18.23	17.53	17.40

Notes:

(1) - Approximate depth below top of concrete slab near ground surface. Riser broken to top of slab
* - Wells were sounded following redevelopment in 1998 and 2018
NA - Not Applicable
ft. AMSL - Feet Above Mean Sea Level
ft. BTOR - Feet Below Top of Riser

Table 2

Groundwater Elevations - 2020
Carborundum - Abrasive Division Site
NYSDEC Site No. 932007
Wheatfield, New York

Well Number	Top of Riser Elevation ft. AMSL	Water Level (ft. BTOR) 4/21/20	Groundwater Elevation (ft. AMSL) 4/21/20
OW2-81	588.50	2.72[(1)]	582.28[(2)]
OW3-81	587.59	4.72	582.87
OW4-81	587.74	9.17	578.57
OW5-81	587.52	10.55	576.97

Notes:

(1) - Approximate depth below top of concrete slab near ground surface. Riser broken to top of slab

(2) - Groundwater elevation estimated using an approximate estimated elevation of 585 ft. AMSL for ground surface from Google Earth

ft. AMSL - Feet Above Mean Sea Level

ft. BTOR - Feet Below Top of Riser

Table 3

Historical Groundwater Sampling Results
Carborundum - Abrasive Division Site
NYSDEC Site No. 932007
Wheatfield, New York

Parameter	Groundwater Standard	OW2-81 6/2/1989	9/13/1990	4/30/1991	4/15/1993	4/21/1995	4/4/1996	8/7/2001	11/21/2003	7/19/2005	7/18/2007	9/16/2009	7/20/2011	8/16/2013	7/10/2015	8/7/2017
pH (SU)		7.00	6.88	6.52	7.19	7.57	7.57	7.11	7.12	7.26	7.23	8.01	7.84	7.11	11.13	7.89
Conductivity (µmhos/cm)		---	---	2900	2128	2557	4115	2370	3828	3279	2970	3497	3852	3760	1565	3520
Turbidity (NTU)		---	---	---	---	420	60	9	42	45	67	29	157	31.9	297	21.8
Total Phenolics (4AAP) (µg/l)	1*	40	160	70	---	---	---	---	---	---	---	---	---	---	---	---
Phenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.2	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2-Chlorophenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<5.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2-Methylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	--	<10	<10	<9.4	<9.4	<9.4	<9.4	<10
4-Methylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	--	<10	<10	<9.4	<9.4	<9.4	<9.4	<10
2-Nitrophenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.8	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4-Dimethylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<3.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4-Dichlorophenol (µg/l)	1*	---	---	<10	<10	<10	<10	<10	<2.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
4-Chloro-3-methylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.8	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4,6-Trichlorophenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4,5-Trichlorophenol (µg/l)	1*	---	---	<50	<50	<50	<5	<10	<1.6	<10	<10	<9.4	<9.4	<9.4	<9.4	<10
2,4-Dinitrophenol (µg/l)	1*	---	---	<50	<50	<50	<10	<50	<9.6	<50	<50	<47	<47	<47	<47	<50
4-Nitrophenol (µg/l)	1*	---	---	<50	<50	<50	<10	<50	<2.8	<50	<50	<47	<47	<47	<47	<50
4,6-Dinitro-2-methylphenol (µg/l)	1*	---	---	<50	<50	<50	<10	<50	<3.0	<50	<50	<47	<47	<47	<47	<50
Pentachlorophenol (µg/l)	1*	---	---	<50	<50	<50	<5	<50	<2.2	<50	<50	<47	<47	<47	<47	<50

Parameter	Groundwater Standard	OW3-81 6/2/1989	9/13/1990	4/30/1991	4/15/1993	4/21/1995	4/4/1996	8/7/2001	11/21/2003	7/19/2005	7/18/2007	9/16/2009	7/20/2011	8/16/2013	7/10/2015	8/7/2017
pH (SU)		7.05	7.05	7.07	6.89	7.76	7.18	7.32	7.02	6.83	6.78	9.91	6.92	7.00	7.23	6.81
Conductivity (µmhos/cm)		---	---	2069	1490	3547	2705	2540	2950	2754	3397	2296	3160	3150	1839	1212
Turbidity (NTU)		---	---	---	---	270	400	24	25	50	29	366	1064	250	332	139
Total Phenolics (4AAP) (µg/l)	1*	<5	50	<6	---	---	---	---	---	---	---	---	---	---	---	---
Phenol (µg/l)	1*	---	---	<10	32	<10	<5	<10	<2.2	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2-Chlorophenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<5.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2-Methylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	--	<10	<10	<9.4	<9.4	<9.4	<9.4	<10
4-Methylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	--	<10	<10	<9.4	<9.4	<9.4	<9.4	<10
2-Nitrophenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.8	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4-Dimethylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<3.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4-Dichlorophenol (µg/l)	1*	---	---	<10	<10	<10	<10	<10	<2.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
4-Chloro-3-methylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.8	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4,6-Trichlorophenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4,5-Trichlorophenol (µg/l)	1*	---	---	<50	<50	<50	<5	<10	<1.6	<10	<10	<9.4	<9.4	<9.4	<9.4	<10
2,4-Dinitrophenol (µg/l)	1*	---	---	<50	<50	<50	<10	<50	<9.6	<50	<50	<47	<47	<47	<47	<50
4-Nitrophenol (µg/l)	1*	---	---	<50	<50	<50	<10	<50	<2.8	<50	<50	<47	<47	<47	<47	<50
4,6-Dinitro-2-methylphenol (µg/l)	1*	---	---	<50	<50	<50	<10	<50	<3.0	<50	<50	<47	<47	<47	<47	<50
Pentachlorophenol (µg/l)	1*	---	---	<50	<50	<50	<5	<50	<2.2	<50	<50	<47	<47	<47	<47	<50

Table 3

Historical Groundwater Sampling Results
Carborundum - Abrasive Division Site
NYSDEC Site No. 932007
Wheatfield, New York

Parameter	Groundwater Standard	OW4-81 6/2/1989	9/13/1990	4/30/1991	4/15/1993	4/21/1995	4/4/1996	8/7/2001	11/21/2003	7/19/2005	7/18/2007	9/16/2009	7/20/2011	8/16/2013	7/10/2015	8/7/2017
pH (SU)		7.29	6.83	7.03	7.08	7.63	8.67	7.64	7.36	11.87	11.26	8.69	11.2	10.88	10.97	9.97
Conductivity (µmhos/cm)		---	---	2153	1495	2458	2232	3023	2698	2566	3612	2500	2360	1946	1333	2280
Turbidity (NTU)		---	---	---	---	130	90	22	13.5	85	57	10.7	47	over range	145	109
Total Phenolics (4AAP) (µg/l)	1*	70	65	20	---	---	---	---	---	---	---	---	---	---	---	---
Phenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.2	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2-Chlorophenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<5.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2-Methylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	--	<10	<10	<9.4	<9.4	<9.4	<9.4	<10
4-Methylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	--	<10	<10	<9.4	<9.4	<9.4	<9.4	<10
2-Nitrophenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.8	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4-Dimethylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<3.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4-Dichlorophenol (µg/l)	1*	---	---	<10	<10	<10	<10	<10	<2.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
4-Chloro-3-methylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.8	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4,6-Trichlorophenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4,5-Trichlorophenol (µg/l)	1*	---	---	<50	<50	<50	<5	<10	<1.6	<10	<10	<9.4	<9.4	<9.4	<9.4	<10
2,4-Dinitrophenol (µg/l)	1*	---	---	<50	<50	<50	<10	<50	<9.6	<50	<50	<47	<47	<47	<47	<50
4-Nitrophenol (µg/l)	1*	---	---	<50	<50	<50	<10	<50	<2.8	<50	<50	<47	<47	<47	<47	<50
4,6-Dinitro-2-methylphenol (µg/l)	1*	---	---	<50	<50	<50	<10	<50	<3.0	<50	<50	<47	<47	<47	<47	<50
Pentachlorophenol (µg/l)	1*	---	---	<50	<50	<50	<5	<50	<2.2	<50	<50	<47	<47	<47	<47	<50

Parameter	Groundwater Standard	OW5-81 6/2/1989	9/13/1990	4/30/1991	4/15/1993	4/21/1995	4/4/1996	8/7/2001	11/21/2003	7/19/2005	7/18/2007	9/16/2009	7/20/2011	8/16/2013	7/10/2015	8/7/2017
pH (SU)		7.25	6.47	6.32	6.74	7.67	7.20	6.83	6.53	5.83	6.27	4.58	6.13	6.01	6.67	6.97
Conductivity (µmhos/cm)		---	---	2841	1854	3134	3188	2915	4415	3196	4225	4949	5632	6270	2000	8410
Turbidity (NTU)		---	---	---	---	340	60	12	21	6	2	250	over range	over range	137	664
Total Phenolics (4AAP) (µg/l)	1*	50	35	<6	---	---	---	---	---	---	---	---	---	---	---	---
Phenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.2	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2-Chlorophenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<5.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2-Methylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	--	<10	<10	<9.4	<9.4	<9.4	<9.4	<10
4-Methylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	--	<10	<10	<9.4	<9.4	<9.4	<9.4	<10
2-Nitrophenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.8	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4-Dimethylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<3.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4-Dichlorophenol (µg/l)	1*	---	---	<10	<10	<10	<10	<10	<2.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
4-Chloro-3-methylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.8	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4,6-Trichlorophenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4,5-Trichlorophenol (µg/l)	1*	---	---	<50	<50	<50	<5	<10	<1.6	<10	<10	<9.4	<9.4	<9.4	<9.4	<10
2,4-Dinitrophenol (µg/l)	1*	---	---	<50	<50	<50	<10	<50	<9.6	<50	<50	<47	<47	<47	<47	<50
4-Nitrophenol (µg/l)	1*	---	---	<50	<50	<50	<10	<50	<2.8	<50	<50	<47	<47	<47	<47	<50
4,6-Dinitro-2-methylphenol (µg/l)	1*	---	---	<50	<50	<50	<10	<50	<3.0	<50	<50	<47	<47	<47	<47	<50
Pentachlorophenol (µg/l)	1*	---	---	<50	<50	<50	<5	<50	<2.2	<50	<50	<47	<47	<47	<47	<50

Table 3

Historical Groundwater Sampling Results
Carborundum - Abrasive Division Site
NYSDEC Site No. 932007
Wheatfield, New York

Parameter	Groundwater Standard	MH A-9 6/2/1989	9/13/1990	4/30/1991	4/15/1993	4/21/1995	4/4/1996	8/7/2001	11/21/2003	7/19/2005	7/18/2007	9/16/2009	7/20/2011	8/16/2013	7/10/2015	8/7/2017
pH (SU)		7.58	7.08	7.31	7.37	7.79	7.28	8.13	7.03	7.35	7.88	6.97	8.10	6.87	8.25	6.63
Conductivity (µmhos/cm)		---	---	453	313	346	676	84	606	779	990	476	622	664	498	614
Turbidity (NTU)		---	---	---	---	280	60	35	3	17	12	4.7	2.11	2.79	8.00	1.59
Total Phenolics (4AAP) (µg/l)	1*	10	70	---	---	---	---	---	---	---	---	---	---	---	---	---
Phenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.2	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2-Chlorophenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<5.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2-Methylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	--	<10	<10	<9.4	<9.4	<9.4	<9.4	<10
4-Methylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	--	<10	<10	<9.4	<9.4	<9.4	<9.4	<10
2-Nitrophenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.8	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4-Dimethylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<3.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4-Dichlorophenol (µg/l)	1*	---	---	<10	<10	<10	<10	<10	<2.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
4-Chloro-3-methylphenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.8	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4,6-Trichlorophenol (µg/l)	1*	---	---	<10	<10	<10	<5	<10	<2.4	<10	<5	<9.4	<9.4	<9.4	<9.4	<10
2,4,5-Trichlorophenol (µg/l)	1*	---	---	<50	<50	<50	<5	<10	<1.6	<10	<10	<9.4	<9.4	<9.4	<9.4	<10
2,4-Dinitrophenol (µg/l)	1*	---	---	<50	<50	<50	<10	<50	<9.6	<50	<50	<47	<47	<47	<47	<50
4-Nitrophenol (µg/l)	1*	---	---	<50	<50	<50	<10	<50	<2.8	<50	<50	<47	<47	<47	<47	<50
4,6-Dinitro-2-methylphenol (µg/l)	1*	---	---	<50	<50	<50	<10	<50	<3.0	<50	<50	<47	<47	<47	<47	<50
Pentachlorophenol (µg/l)	1*	---	---	<50	<50	<50	<5	<50	<2.2	<50	<50	<47	<47	<47	<47	<50

Notes:

---	- Not provided/not analyzed
SU	- Standard unit
µmhos/cm	- Micro ohms per centimeter
NTU	- Nephelometric turbidity unit
µg/L	- Micrograms per liter
*	- Applies to the sum of phenolic compounds (total phenols)
	- Exceeds NYSDEC Class GA Groundwater Standard

Appendices

Appendix A
Institutional and Engineering Controls Certification Form

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Environmental Remediation
625 Broadway, 11th Floor, Albany, NY 12233-7020
P: (518)402-9543 | F: (518)402-9547
www.dec.ny.gov

1/16/2020

Chris Ciccarelli
Saint Gobain Abrasives Inc.
P.O. Box 301
6600 Walmore Rd.
Niagara Falls, NY 14304

Re: Reminder Notice: Site Management Periodic Review Report and IC/EC Certification Submittal
Site Name: Carborundum-Abrasive Division
Site No.: 932007
Site Address: 6600 WALMORE ROAD
Wheatfield, NY 14304

Dear Chris Ciccarelli:

This letter serves as a reminder that sites in active Site Management (SM) require the submittal of a periodic progress report. This report, referred to as the Periodic Review Report (PRR), must document the implementation of, and compliance with, site-specific SM requirements. Section 6.3(b) of DER-10 *Technical Guidance for Site Investigation and Remediation* (available online at http://www.dec.ny.gov/regulations/67386.html) provides guidance regarding the information that must be included in the PRR. Further, if the site is comprised of multiple parcels, then you as the Certifying Party must arrange to submit one PRR for all parcels that comprise the site. The PRR must be received by the Department no later than **March 31, 2020**. Guidance on the content of a PRR is enclosed.

Site Management is defined in regulation (6 NYCRR 375-1.2(at)) and in Chapter 6 of DER-10. Depending on when the remedial program for your site was completed, SM may be governed by multiple documents (e.g., Operation, Maintenance, and Monitoring Plan; Soil Management Plan) or one comprehensive Site Management Plan.

A Site Management Plan (SMP) may contain one or all of the following elements, as applicable to the site: a plan to maintain institutional controls and/or engineering controls ("IC/EC Plan"); a plan for monitoring the performance and effectiveness of the selected remedy ("Monitoring Plan"); and/or a plan for the operation and maintenance of the selected remedy ("O&M Plan"). Additionally, the technical requirements for SM are stated in the decision document (e.g., Record of Decision) and, in some cases, the legal agreement directing the remediation of the site (e.g., order on consent, voluntary agreement, etc.).

When you submit the PRR (by the due date above), include the enclosed forms documenting that all SM requirements are being met. The Institutional Controls (ICs) portion of the form (Box 6) must be signed by you or your designated representative. The Engineering Controls (ECs) portion of the form (Box 7) must be signed by a Qualified Environmental Professional (QEP). If you cannot certify that all SM requirements are being met, you must submit a Corrective Measures Work Plan that identifies the actions to be taken to restore compliance. The work plan must include a schedule to be approved by the Department. The Periodic Review process will not be considered complete until all necessary corrective measures are completed and all required controls are certified. Instructions for completing the certifications are enclosed.

All site-related documents and data, including the PRR, must be submitted in electronic format to the Department of Environmental Conservation. The required format for documents is an Adobe PDF file with optical character recognition and no password protection. Data must be submitted as an electronic data deliverable (EDD) according to the instructions on the following webpage:

https://www.dec.ny.gov/chemical/62440.html

Documents may be submitted to the project manager either through electronic mail or by using the Department's file transfer service at the following webpage:

https://fs.dec.state.ny.us/fs/

The Department will not approve the PRR unless all documents and data generated in support of the PRR have been submitted using the required formats and protocols.

You may contact Brian Sadowski, the Project Manager, at 716-851-7220 or brian.sadowski@dec.ny.gov with any questions or concerns about the site. Please notify the project manager before conducting inspections or field work. You may also write to the project manager at the following address:

New York State Department of Environmental Conservation
270 Michigan Ave
Buffalo, NY 14203-2915

Enclosures

PRR General Guidance
Certification Form Instructions
Certification Forms

ec: w/ enclosures
Brian Sadowski, Project Manager
Stanley Radon, Hazardous Waste Remediation Supervisor, Region 9

GHD - Margaret Popek - margaret.popek@ghd.com
FTA - Kathy Wager - kathy.wager@frontiertechnical.com

Enclosure 1

Certification Instructions

I. Verification of Site Details (Box 1 and Box 2):

Answer the three questions in the Verification of Site Details Section. The Owner and/or Qualified Environmental Professional (QEP) may include handwritten changes and/or other supporting documentation, as necessary.

II. Certification of Institutional Controls/ Engineering Controls (IC/ECs)(Boxes 3, 4, and 5)

1.1.1. Review the listed IC/ECs, confirming that all existing controls are listed, and that all existing controls are still applicable. If there is a control that is no longer applicable the Owner / Remedial Party should petition the Department separately to request approval to remove the control.

2. In Box 5, complete certifications for all Plan components, as applicable, by checking the corresponding checkbox.

3. If you cannot certify "YES" for each Control listed in Box 3 & Box 4, sign and date the form in Box 5. Attach supporting documentation that explains why the **Certification** cannot be rendered, as well as a plan of proposed corrective measures, and an associated schedule for completing the corrective measures. Note that this **Certification** form must be submitted even if an IC or EC cannot be certified; however, the certification process will not be considered complete until corrective action is completed.

If the Department concurs with the explanation, the proposed corrective measures, and the proposed schedule, a letter authorizing the implementation of those corrective measures will be issued by the Department's Project Manager. Once the corrective measures are complete, a new Periodic Review Report (with IC/EC Certification) must be submitted within 45 days to the Department. If the Department has any questions or concerns regarding the PRR and/or completion of the IC/EC Certification, the Project Manager will contact you.

III. IC/EC Certification by Signature (Box 6 and Box 7):

If you certified "YES" for each Control, please complete and sign the IC/EC Certifications page as follows:

- For the Institutional Controls on the use of the property, the certification statement in Box 6 shall be completed and may be made by the property owner or designated representative.

- For the Engineering Controls, the certification statement in Box 7 must be completed by a Professional Engineer or Qualified Environmental Professional, as noted on the form.

Enclosure 2

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

Site Details **Box 1**

Site No. 932007

Site Name Carborundum-Abrasive Division

Site Address: 6600 WALMORE ROAD Zip Code: 14304
City/Town: Wheatfield
County: Niagara
Site Acreage: 1.000

Reporting Period: March 01, 2019 to March 01, 2020

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

Box 2

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

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

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

Signature of Owner, Remedial Party or Designated Representative Date

SITE NO. 932007 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
146.00-1-9.2	Patriot Wheatfield Assoc, LP c/o P.Equit	Monitoring Plan O&M Plan

Operations and Maintenance Plan; 10/4/99. Revised: 11/19/2012.

Groundwater Sampling and Analysis Plan; 11/24/99. Revised: 11/19/2012.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
146.00-1-9.2	Cover System Monitoring Wells

Clay landfill cap: 1982.

Monitoring Wells.

Box 5

Periodic Review Report (PRR) Certification Statements

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

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

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

   (YES) NO

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

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

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

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

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

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

   YES (NO)

   Refer to Section 1.1 of the PRR

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

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

James J. Smith — 04/29/2020

Signature of Owner, Remedial Party or Designated Representative — Date

IC CERTIFICATIONS
SITE NO. 932007

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

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

I _____ at _____,
print name print business address

am certifying as _____(Owner or Remedial Party)

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

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

IC/EC CERTIFICATIONS

Box 7

Qualified Environmental Professional Signature

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

I _____ at _____,
print name print business address

am certifying as a Qualified Environmental Professional for the _____
(Owner or Remedial Party)

Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification	Stamp (Required for PE)	Date

Enclosure 3
Periodic Review Report (PRR) General Guidance

I. Executive Summary: (1/2-page or less)
   A. Provide a brief summary of site, nature and extent of contamination, and remedial history.
   B. Effectiveness of the Remedial Program - Provide overall conclusions regarding;
      1. progress made during the reporting period toward meeting the remedial objectives for the site
      2. the ultimate ability of the remedial program to achieve the remedial objectives for the site.
   C. Compliance
      1. Identify any areas of non-compliance regarding the major elements of the Site Management Plan (SMP, i.e., the Institutional/Engineering Control (IC/EC) Plan, the Monitoring Plan, and the Operation & Maintenance (O&M) Plan).
      2. Propose steps to be taken and a schedule to correct any areas of non-compliance.
   D. Recommendations
      1. recommend whether any changes to the SMP are needed
      2. recommend any changes to the frequency for submittal of PRRs (increase, decrease)
      3. recommend whether the requirements for discontinuing site management have been met.

II. Site Overview (one page or less)
   A. Describe the site location, boundaries (figure), significant features, surrounding area, and the nature and extent of contamination prior to site remediation.
   B. Describe the chronology of the main features of the remedial program for the site, the components of the selected remedy, cleanup goals, site closure criteria, and any significant changes to the selected remedy that have been made since remedy selection.

III. Evaluate Remedy Performance, Effectiveness, and Protectiveness
   Using tables, graphs, charts and bulleted text to the extent practicable, describe the effectiveness of the remedy in achieving the remedial goals for the site. Base findings, recommendations, and conclusions on objective data. Evaluations and should be presented simply and concisely.

IV. IC/EC Plan Compliance Report (if applicable)
   A. IC/EC Requirements and Compliance
      1. Describe each control, its objective, and how performance of the control is evaluated.
      2. Summarize the status of each goal (whether it is fully in place and its effectiveness).
      3. Corrective Measures: describe steps proposed to address any deficiencies in ICECs.
      4. Conclusions and recommendations for changes.
   B. IC/EC Certification
      1. The certification must be complete (even if there are IC/EC deficiencies), and certified by the appropriate party as set forth in a Department-approved certification form(s).

V. Monitoring Plan Compliance Report (if applicable)
   A. Components of the Monitoring Plan (tabular presentations preferred) - Describe the requirements of the monitoring plan by media (i.e., soil, groundwater, sediment, etc.) and by any remedial technologies being used at the site.
   B. Summary of Monitoring Completed During Reporting Period - Describe the monitoring tasks actually completed during this PRR reporting period. Tables and/or figures should be used to show all data.
   C. Comparisons with Remedial Objectives - Compare the results of all monitoring with the remedial objectives for the site. Include trend analyses where possible.
   D. Monitoring Deficiencies - Describe any ways in which monitoring did not fully comply with the monitoring plan.
   E. Conclusions and Recommendations for Changes - Provide overall conclusions regarding the monitoring completed and the resulting evaluations regarding remedial effectiveness.

VI. Operation & Maintenance (O&M) Plan Compliance Report (if applicable)
   A. Components of O&M Plan - Describe the requirements of the O&M plan including required activities, frequencies, recordkeeping, etc.
   B. Summary of O&M Completed During Reporting Period - Describe the O&M tasks actually completed during this PRR reporting period.
   C. Evaluation of Remedial Systems - Based upon the results of the O&M activities completed, evaluated

the ability of each component of the remedy subject to O&M requirements to perform as designed/expected.

D. O&M Deficiencies - Identify any deficiencies in complying with the O&M plan during this PRR reporting period.

E. Conclusions and Recommendations for Improvements - Provide an overall conclusion regarding O&M for the site and identify any suggested improvements requiring changes in the O&M Plan.

VII. Overall PRR Conclusions and Recommendations

A. Compliance with SMP - For each component of the SMP (i.e., IC/EC, monitoring, O&M), summarize:
   1. whether all requirements of each plan were met during the reporting period
   2. any requirements not met
   3. proposed plans and a schedule for coming into full compliance.

B. Performance and Effectiveness of the Remedy - Based upon your evaluation of the components of the SMP, form conclusions about the performance of each component and the ability of the remedy to achieve the remedial objectives for the site.

C. Future PRR Submittals
   1. Recommend, with supporting justification, whether the frequency of the submittal of PRRs should be changed (either increased or decreased).
   2. If the requirements for site closure have been achieved, contact the Departments Project Manager for the site to determine what, if any, additional documentation is needed to support a decision to discontinue site management.

VIII. Additional Guidance

Additional guidance regarding the preparation and submittal of an acceptable PRR can be obtained from the Departments Project Manager for the site.

Appendix B
Site Inspection Form - April 21, 2020

Site Inspection
Carborundum - Abrasive Division Site
NYSDEC Site No. 932007
Wheatfield, New York

Inspector's Name: Richard J Snyder

Date: April 21, 2020

1. Cap Inspection

Engineering Control	Condition	Maintenance Required or Comments
Clay Landfill Cap	cap in very good condition minor rutting along west fence line from mower	fill ruts; continue to mow vegetative cover on cap.
Monitoring Wells	See below.	See below.

2. Well Inspection

	Well			
Inspection Items	**OW2-81**	**OW3-81**	**OW4-81**	**OW5-81**
Depth to Water (ft. BTOR)	2.72	4.72	9.17	10.55
Well Depth (ft. BTOR)	14 *	19.65	19.95	17.40
Well Locked	NA	Yes	No	No - lock. Hinge of cover Broken
Lock Functioning	NA	yes	No lock	NA
Bailer and Rope OK	None Present	NA	NA	NA
Tubing OK	None Present	yes	yes	yes
Protective Casing OK	note 1	note 1	Note 1 ~~yes~~	~~yes~~ note 1
Concrete Pad OK	yes	- corner cracked	yes	yes
Heaving of Well or Casing	No	No	No	No
Well Constricted	No	No	No	No
Debris In Well	No	No	No	No
Insects In Well	note 2	Note 2	Note 2	Note 2
Overall Condition		good - no observable maintenance required	good - no observable maintenance required	good other than broken hinge of lockable cover
Maintenance Needed	casing needs to be extended above concrete slab	Lock replaced	Lock placed on casing cover	~~Hinge~~ Casing lockable cover to be repaired or replaced

Inspector's Signature: _____

N43° 06.244'
W 78° 55.949'

Note 1 - No protective casing aboveground
- steel well casing extended as sticking

Note 2 – Larval coccoons present in all wells – no actual insects observed
* casing broken to top of slab – 14' ft below top of slab

OW 2 -81	OW 3 -81	OW 4-81	OW 5 -81
N 43° 06.246'	N 43° 06.277'	N 43° 06.269'	N 43° 06.244',
W 78° 56.015'	W 78° 56.019'	W 78° 55.971'	W 78° 55. 969'

Appendix C
Site Inspection Photo Log - April 21, 2020

Photo 1 - View of OMW3-81 west of Site on NFTA property

Photo 2 - View of OMW2-81 west of Site on NFTA property

Site Inspection Photographs – April 21, 2020

Photo 3 - View of west side of cap viewed from NFTA property

Photo 4 - View of west side of cap viewed from NFTA property

Site Inspection Photographs – April 21, 2020

Photo 5 - View of west side of cap viewed from NFTA property

Photo 6 - View of west side of cap viewed from NFTA property

Site Inspection Photographs – April 21, 2020

Photo 7 - View of west side of cap viewed from NFTA property

Photo 8 - View of west side of cap viewed from NFTA property

Site Inspection Photographs – April 21, 2020

Photo 9 - View of north side of cap

Photo 10 - View of east side of cap

Site Inspection Photographs – April 21, 2020

Photo 11 - View of west side of cap as viewed from the Site

Photo 12 - View of north side of cap

Site Inspection Photographs – April 21, 2020

Photo 13 - View of west side of cap

Photo 14 - View of west side of cap

Site Inspection Photographs – April 21, 2020

Photo 15 - View of west side of cap (southern end) and ruts from lawnmower

Photo 16 - View of south side of cap

Site Inspection Photographs – April 21, 2020

Photo 17 - View of west side of cap

Photo 18 - View of south side of cap

Site Inspection Photographs – April 21, 2020

Photo 19 - View of south side of cap

Photo 20 - View of east side of cap

Site Inspection Photographs – April 21, 2020

Photo 21 - View of east side of cap

Photo 22 - View of east side of cap

Site Inspection Photographs – April 21, 2020

Photo 23 - View of east side of cap

Photo 24 - View of OMW-5 east of Site

Photo 25 - View of OMW4-81 east of Site

Photo 26 - View of MH A-9 east of Site

Site Inspection Photographs – April 21, 2020

Photo 27 - View of interior of MH A-9 east of Site

Photo 28 - View of concrete area east of Site with monitoring wells

Site Inspection Photographs – April 21, 2020

Photo 29 - View of concrete area east of Site with monitoring wells

Photo 30 - View of concrete area east of Site with monitoring wells

Site Inspection Photographs – April 21, 2020

Appendix D
December 17, 2018 Monitoring Well Redevelopment Summary

Memorandum

April 1, 2019

To:	Mr. James J. Smith, Saint-Gobain Corporation	Ref. No.:	11192675-01
From:	Margaret A. Popek/adh/1	Tel:	716-205-1973
cc:	Dennis Hoyt, GHD		
Subject:	**Monitoring Well Redevelopment, Saint-Gobain Abrasives, Niagara Falls, New York**		

1. Introduction

In accordance with GHD's proposal to Saint-Gobain Corporation (SGC, Client) dated September 26, 2018, GHD redeveloped monitoring wells OW4-81 and OW5-81 at the Saint-Gobain Abrasives facility located at 6600 Walmore Road in Niagara Falls, New York (Site) on December 17, 2018. The objectives of the redevelopment were as follows:

- To increase the well yields
- To decrease the time required for the wells to recharge after purging
- To produce sufficient volume to fill sampling jars during routine monitoring events

Based on information provided to GHD by the Client, it is GHD's understanding that OW4-81 and OW5-81 are screened just above the overburden-bedrock contact, in silt and clay. Each well is 2 inches in diameter.

2. Well Redevelopment and Water Level Monitoring

2.1 Well Redevelopment

GHD redeveloped wells OW4-81 and OW5-81 on December 17, 2018. The static water levels in the wells prior to redevelopment were approximately 9.93 feet below top of riser (BTOR) in OW4-81 and approximately 14.01 feet BTOR in OW5-81. The well depths were approximately 19.10 feet BTOR in OW4-81 and approximately 17.56 feet BTOR in OW5-81.

Following measurement of initial static water levels and well depths, each well was redeveloped using a dedicated section of 5/8-inch diameter rigid poly tubing fitted with a foot valve. GHD attempted to use a 2-inch diameter surge block for the redevelopment, but the surge block would not fit through bends in the risers that were encountered at less than 1 foot below the ground surface in each well. Each well was surged manually using the tubing-foot valve assembly, and sediment-laden water was removed through the tubing until the well was dry. Approximately 1.5 gallons of potable water were then added to the well, and the surging repeated until the well was dry. This process was repeated until the water purged from each well was clear. Approximately 4.5 gallons of potable water were added to each well.

Water purged from OW4-81 and OW5-81 was discharged to the Site's sanitary sewer system, as directed by Site personnel. In total, approximately 6 gallons of water were purged from OW4-81 and approximately 4.75 gallons of water were purged from OW5-81. Static water levels immediately following redevelopment were approximately 18.66 feet BTOR in OW4-81 and approximately 17.13 feet BTOR in OW5-81. Well depths following redevelopment were approximately 19.06 feet BTOR in OW4-81 and approximately 17.53 feet BTOR in OW5-81. Refer to Table 2.2 for a summary of the well redevelopment activities.

2.2 Post-Redevelopment Water Level Monitoring

Following completion of well redevelopment, static water levels were measured in OW4-81 and OW5-81 on December 17, 20, and 24, 2018, and on January 2, 2019, to monitor the wells' recoveries for use in evaluating well performance. As OW4-81 had fully recovered by December 24, 2018, additional static water level measurements were not collected at this well. A summary of data collected during the water level monitoring activities is included in Table 2.2 below.

Table 2.2 Summary of 2018 Well Redevelopment and Water Level Monitoring

Monitoring Well	OW4-81	OW5-81
December 17, 2018 - Date of Redevelopment		
Initial Static Water Level	9.93 feet BTOR	14.01 feet BTOR
Final Static Water Level	18.66 feet BTOR (10:56 a.m.)	17.13 feet BTOR (11:29 a.m.)
Initial Sounded Well Depth	19.10 feet BTOR	17.56 feet BTOR
Final Sounded Well Depth	19.06 feet BTOR	17.53 feet BTOR
Volume Potable Water Added to Well	4.5 gallons	4.5 gallons
Volume Water Purged from Well	6 gallons	4.75 gallons
Post-Development Static Water Level Measurements		
December 17, 2018	18.21 feet BTOR (11:36 a.m.)	17.11 feet BTOR (11:41 a.m.)
December 20, 2018	9.73 feet BTOR (9:00 a.m.)	16.96 feet BTOR (9:07 a.m.)
December 24, 2018	9.16 feet BTOR (8:04 a.m.)	16.95 feet BTOR (8:11 a.m.)
January 2, 2019	Not measured	16.50 feet BTOR (8:15 a.m.)
Notes:		
BTOR - Below top of riser		

3. Analysis

To better assess the performance of wells OW4-81 and OW5-81 following redevelopment, the recoveries of these wells following redevelopment were compared to their recoveries following being purged dry on July 31, 2017, during a routine sampling event conducted by Frontier Technical Associates, Inc. (FTA). FTA subsequently measured water levels 1 week following purging in anticipation of the wells having had

produced enough recharge volume to fill the sample bottles. Purge records are located in FTA's report[1]. A summary of relevant data presented by FTA collected during the sampling event is included in Table 3.1 below.

Table 3.1 Water Levels Collected During July 2017 Sampling Event

Monitoring Well	OW4-81	OW5-81
December 17, 2018 – Date of Redevelopment		
Initial Static Water Level	10.36 feet BTOR	12.02 feet BTOR
Final Static Water Level	Well is dry (10:59 a.m.)	Well is dry (11:12 a.m.)
Well Depth (previously measured)	19.38 feet BTOR	18.23 feet BTOR
Post-Purging Static Water Level Measurement		
August 7, 2017	14.03 feet BTOR (9:59 a.m.)	Well is dry (10:15 a.m.)
Notes:		
BTOR - Below top of riser		

Tables 3.2 and 3.3 present the water level recoveries in wells OW4-81 and OW5-81, respectively, following being purged dry or nearly dry during the July 2017 sampling event and during the December 2018 redevelopment. The water level recoveries were calculated as the percentage of the initial drop in water level following purging that had recovered by the date of the subsequent static water level measurement, plotted as a function of time since completion of purging. The recoveries are also presented graphically. As indicated in Table 3.2 and associated graph, the water level in OW4-81 had fully recovered to its initial pre-purge value within 2.92 days after purging following the December 2018 well redevelopment, whereas the water level had only recovered to approximately 59 percent of its initial value within 6.96 days after purging following the July 2017 sampling event. As such, greater yields were observed in OW4-81 following redevelopment when compared to the 2017 historical data.

In contrast, as indicated in Table 3.3 and associated graph, the water level in OW5-81 had only recovered to approximately 5 percent of its initial value within 2.90 days and approximately 20 percent within 15.87 days after purging following the December 2018 well redevelopment. This is encouraging and may represent a slight improvement in well yield, as the well was still dry 6.96 days after purging during the July 2017 sampling event. However, since static water levels for this well following the sampling event are not available, it is unknown if the 2018 redevelopment significantly improved the yields in this well when compared to the 2017 historical data.

[1] "Groundwater Sampling and Analysis, Landfill Area, Saint-Gobain Abrasives, Inc.", prepared by Frontier Technical Associates Inc. for Saint-Gobain Abrasives, Inc., dated December 11, 2017. FTA Report ET-703-17.

Table 3.2 Water Level Recovery in OW4-81 Following Purging

Date and Time	Static Water Level	Time Since End of Purging	Percent Recovery
December 2018 Well Redevelopment			
12/17/2018 10:56 a.m.	18.66 feet BTOR	0 day	0
12/17/2018 11:36 a.m.	18.21 feet BTOR	0.028 day	5.15
12/20/2018 9:00 a.m.	9.73 feet BTOR	2.92 days	102.29
12/24/2018 8:04 a.m.	9.16 feet BTOR	6.88 days	108.82
July 2017 Sampling Event			
7/31/2017 10:59 a.m.	19.38 feet BTOR*	0 day	0
8/7/2017 9:59 a.m.	14.03 feet BTOR	6.96 days	59.31
Notes:			
BTOR - Below top of riser			
* - Well was dry. Measured well depth used as static water level.			

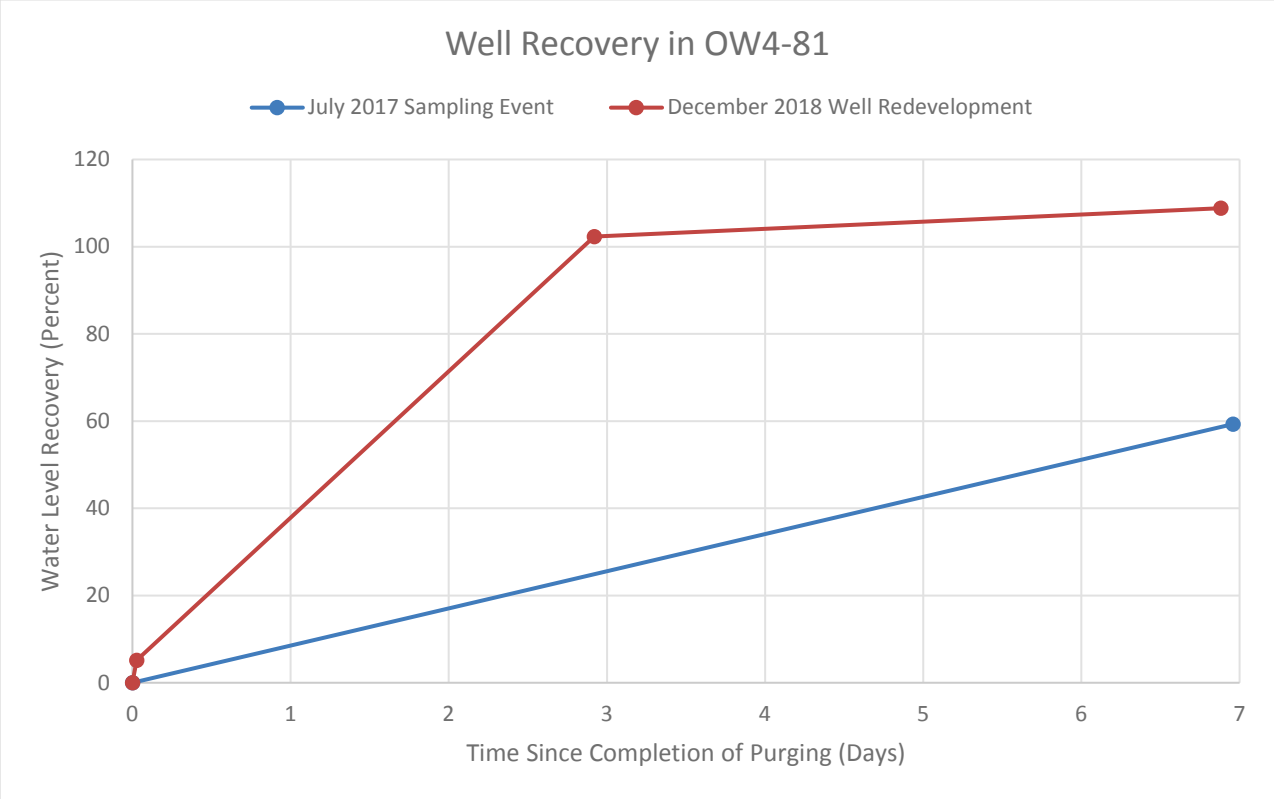
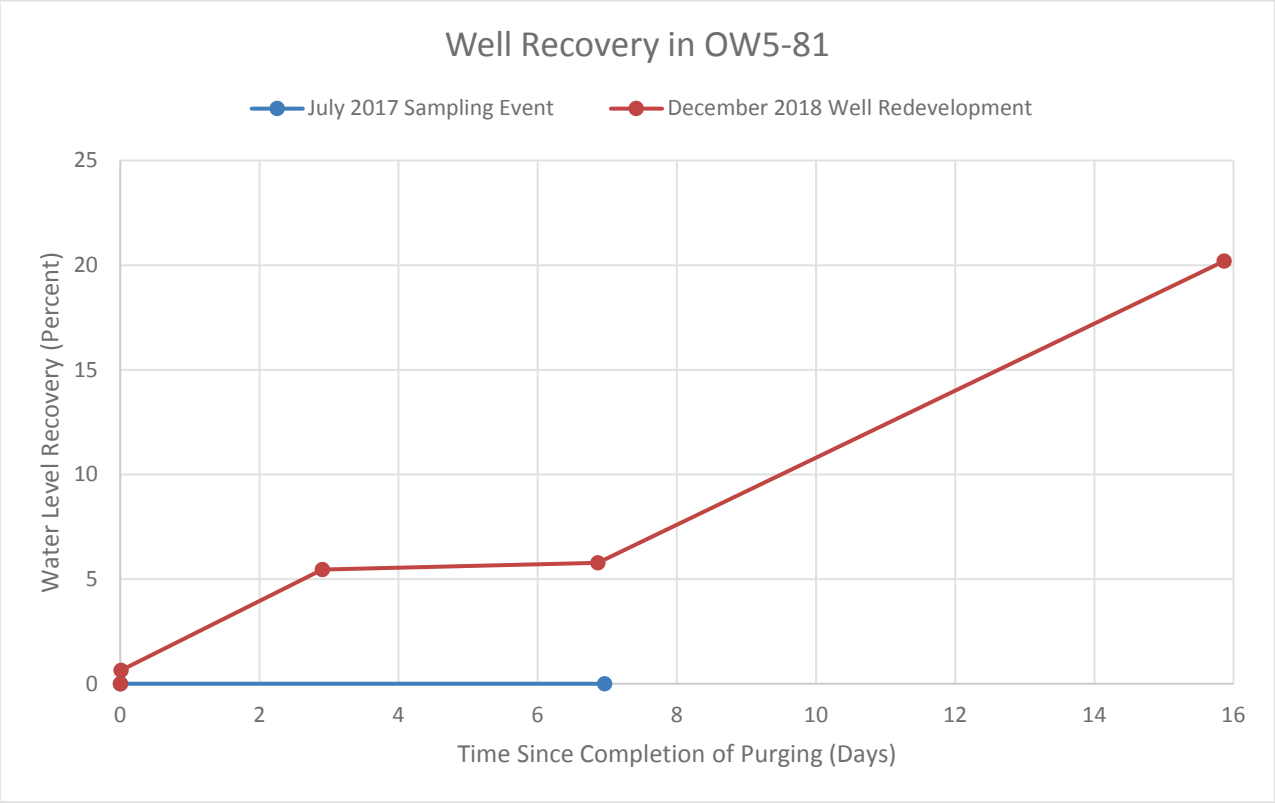


Table 3.3 Water Level Recovery in OW5-81 Following Purging

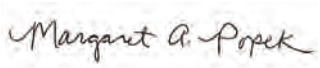
Date and Time	Static Water Level	Time Since End of Purging	Percent Recovery
December 2018 Well Redevelopment			
12/17/2018 11:29 a.m.	17.13 feet BTOR	0 day	0
12/17/2018 11:41 a.m.	17.11 feet BTOR	0.008 day	0.64
12/20/2018 9:07 a.m.	16.96 feet BTOR	2.90 days	5.45
12/24/2018 8:11 a.m.	16.95 feet BTOR	6.86 days	5.77
1/2/2019 8:15 a.m.	16.50 feet BTOR	15.87 days	20.19
July 2017 Sampling Event			
7/31/2017 11:12 a.m.	18.23 feet BTOR*	0 day	0
8/7/2017 10:15 a.m.	18.23 feet BTOR*	6.96 days	0
Notes:			
BTOR - Below top of riser			
* - Well was dry. Measured well depth used as static water level.			



Thank you for allowing us the opportunity to serve you. Please do not hesitate to reach out if you have any questions or concerns, or if we can be of further service.

Sincerely,

GHD



Margaret A. Popek

Geologist

MAP/adh/1

about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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