Mcpherson, Benjamin J (DEC)

From: Bridge Clean Air <bridge@cacwny.org>
Sent: Friday, March 29, 2024 3:33 PM
To: Mcpherson, Benjamin J (DEC)
Subject: Site 109 Operable Unit 02 Amended Remedy Comment

Categories: BMC - To Do

Hi Ben,
Great presentation last week, I really appreciated the info shared. Here are the comments I was asked to share from our technical team about the Amended Remedy for Site 109 Operable Unit 02. The general gist as I understand it is that folks are concerned how this Amended Remedy will impact work at the sites adjacent, and vice versa, and that they'd like an extension of the comment period for further evaluation -

> "1) The ROD is premature since the groundwater investigations at Tonawanda Coke and Allied are not yet complete, suggesting that contamination can enter the site from those sources and the proposed amendment does not consider this.
> 2) While excavation is proposed for ecological SCOs, there is essentially no remedy proposed for soils to be left in place that exceed commercial SCOs except for covering them up. If that's the case, why does DEC even have commercial SCOs?
> 3) Explain how the remedy can contemplate moving contaminated soil to site 110 when the investigation at that site is not complete and cannot anticipate receiving materials from Site 109. Further, this suggests a violation of Laws regarding the operations of licensed disposal sites. In summary, the proposed remedy in the ROD Amendment is premature and should only be considered when other studies have been completed and remedies contemplated; remedies should be complementary at a point in time that makes sense.
> 4) We request an extension of the comment to further review the associated reference documents and prepare a more complete response."

Thanks,

Mx. Bridge Rauch, they/them, MRP | Environmental Justice Organizer, Tonawanda Campaigns
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nygeology

Technical Memorandum

Prepared for: The Clean Air Coalition of Western New York
Chris Murawski, Executive Director

Prepared by: Thomas J. Morahan, P.G.
New York State Professional
Geological Services PLLC

Date: 30 April 2024

Review of Proposed Amendment for Public Comment NYSDEC Site No. 915055 TONAWANDA COKE SITE – OPERABLE UNIT 2 (Site 109)

New York State Professional Geological Services PLLC (nygeology) was retained by the Clean Air Coalition of Western New York (Clean Air) to review the February 2024 proposed Amendment to the Record of Decision (Amendment) for the TONAWANDA COKE SITE – OPERABLE UNIT 2 / Town of Tonawanda / Erie County / Registry No. 915055 (Site 109) by the New York State Department of Environmental Conservation (NYSDEC) which is now up for public comment. The proposed Amendment is based on the disposal of hazardous wastes at Site 109 that caused the contamination of various environmental media. While the Amendment presents new information and discusses the reasons for the preferred remedy, among other matters, the Amendment does not recognize the effects of adjacent sites. Our review and proposed recommendations to the Amendment follow.

Background

On March 31, 2008, NYSDEC signed a ROD which selected a remedy for Operable Units (OUs) 1 and 2 of the Tonawanda Coke Site. Since that time, a more comprehensive investigation of Site 109 has been completed that more accurately defines the nature and extent of contamination at the site. The Amendment discussed herein applies only to OU2, also known as Site 109.

Approach

As sites with environmental contamination are discovered, they can enter various regulatory enforcement programs in the State of New York such as Spills, Superfund or Brownfield Cleanup (BCP) programs. Such programs focus on site remediation but mainly rely on present conditions and do not consider the range of former activities conducted at a site that could have impacted the environment. In search of an "Innocent Landowner Defense" under the federal Superfund Amendments Reauthorization Act, a group of report users and environmental professionals developed ASTM E1527 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process that defined All Appropriate Inquiry. By following the standard, bona fide purchasers could qualify for the "Innocent Landowner Defense" under the Comprehensive Environmental Response Compensation and Liability Act. One element of this standard requires the examination of off-site sources of contamination that could impact the "Subject Property"; this was essential, since, under CERCLA, a site could be considered contiguous by definition of a groundwater plume regardless of the various properties it encroached upon. In the case of this amended ROD, the impact of adjacent sites has not been considered. Our examination of the proposed Amendment considers what we view as an omission, and includes other important observations as presented below.

Comment 1: Potential Impact of Adjacent Sites on Site 109

The Site 109 Amendment can be considered premature. Several adjacent sites have the potential to change conditions at Site 109 over time and could affect the remedies proposed in the Amendment. Such adjacent sites include:

- The Tonawanda Coke Brownfield Cleanup Parcel (Tonawanda Coke BCP Site) designated as C915353 by the NYSDEC; and

- The former Allied Chemical facility (Allied BCP Site) designated as C915003 by the NYSDEC.

The impact of each of these adjacent sites Site 109 is discussed separately below.

Comment 2: Potential Future Impact of the Tonawanda Coke BCP Site on Site 109 Operable Unit 2

The BCP Site is currently under investigation by Riverview Technology and Innovation Campus, Inc. Studies at the Tonawanda Coke BCP Site have not been completed, but nygeology is closely following the work being performed at the site. While we agree that the hydrogeologic studies presented for Site 109 are complete in terms of the characterization and monitoring for any contamination originating from Site 109, we are concerned with the

contamination expected to enter Site 109 from the Tonawanda Coke BCP Site in the future. Our concerns are summarized below.

The 1993 USDOE Remedial Investigation Report for a Tonawanda Site discussed in the August 2020 ESA as detailed by nygeology and submitted as part of the Tonawanda Coke BCP Site public comments, shows a Camillus Formation upper bedrock aquifer at the Tonawanda Coke sites. Of particular interest, we noted the "two heads of bedrock valleys seen in the 520-ft elevation contour, one approaching the 110-BCP Property from the south, the other from the north." These features would favor southward flow in the aquifer beneath the southern part of the Property with the western part of the aquifer beneath Sites 108 and 109 flowing westward toward the river. This is exactly the flow regime that was measured by Inventum in the October 2021 Draft Remedial Investigation Report (RIR.)

The RIR presented a series of "contour" maps, more correctly known as potentiometric surface maps, which present groundwater flow across the site. While we rely on the information presented in the RIR, comments in this document are in no way meant to be interpreted as to comment on the adequacy or quality of that work. These flow maps, presented below, show that shallow groundwater in the fill flows west toward Site 109 from Site 110. Although the clay unit below was arbitrarily divided into two units, they act as essentially one hydrogeologic unit as can be seen from the flow direction and measured horizontal gradients. Presumed to be an aquitard, groundwater flows in the fill, both on top of and in the clay, to the southwest from the highly contaminated production area directly toward Site 109. As predicted in the USDOE report above, not only is a southward component of flow present, but also the westward component of flow in bedrock beneath the western part of the Tonawanda Coke BCP Site is also present; notwithstanding, it must be noted that there are no bedrock wells to the south to confirm any flow to the south or southwest at this time..

Following the path from the major contaminant source locations in the production areas at the Tonawanda Coke BCP Site and noting the relatively high level of the contamination of the fill in these areas, the presence of contaminants in the clay water-bearing zone was examined to uncover whether the clay zone has been contaminated. In particular, some of the exceedances of class GA groundwater standards in the upper clay included:

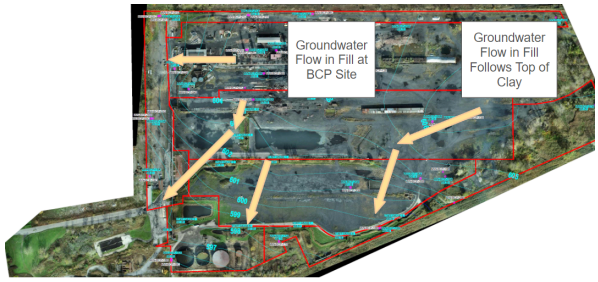
- AOI-1 Phenol, Chromium, and Arsenic
- AOI-2 Chromium, and Arsenic
- AOI-4 Volatile and Semivolatile Organic Compounds, Chromium, Arsenic and Mercury
- AOI-5 Volatile and Semivolatile Organic Compounds, Chromium, Arsenic and Ammonia
- AOI-7 Volatile and Semivolatile Organic Compounds

Volatile Organic Compounds included Benzene, a known carcinogen, as well as other aromatics typical of coking byproduct management operations. Semivolatile Organic Compounds included Polyaromatic Hydrocarbons also typically associated with such operations.

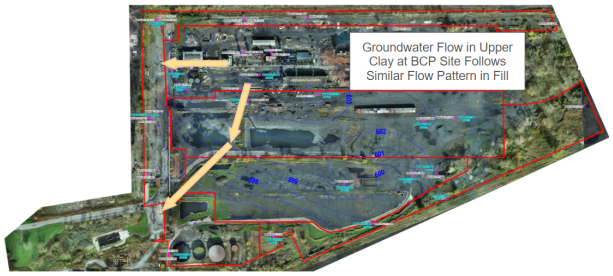
In the RIR, the permeabilities for clay samples in the upper clay unit were measured to be in the range of 10-8 centimeters per second (cm/s), which were somewhat consistent with the results of 10-6 cm/s to 10-8 cm/s reported in the Supplementary Site Investigation (SSI) Report dated July 1990 prepared by Conestoga-Rovers & Associates (CRA, 1990), although the lower end of the permeability of 10-6 by CRA indicates the possibility for a geometric increase in contaminant travel time. The RIR indicated that several core samples retrieved from the upper clay exhibited vertical "desiccation" cracks; it is not uncommon for such cracks to form conduits for vertical migration. So, while the low permeability of the clay would be expected to act as an aquiclude to prevent downward migration of contaminants, the presence of these compounds indicates that this layer is leaky.

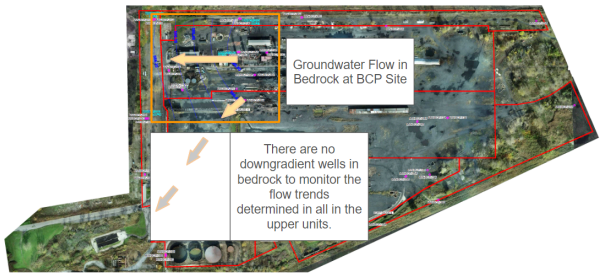
The lack of long term monitoring wells screened at the right locations and depths to monitor the future migration of contaminants flowing onto Site 109 in the future suggests that groundwater contaminant transport has not been completely considered. This possibility can be emphasized by the examination of groundwater gradients as discussed below.

Groundwater flow in the fill generally follows the top of the clay layer reported in the RIR as shown below.



Groundwater flow in the Upper and Lower Clay Units follow the same pattern as shown below.



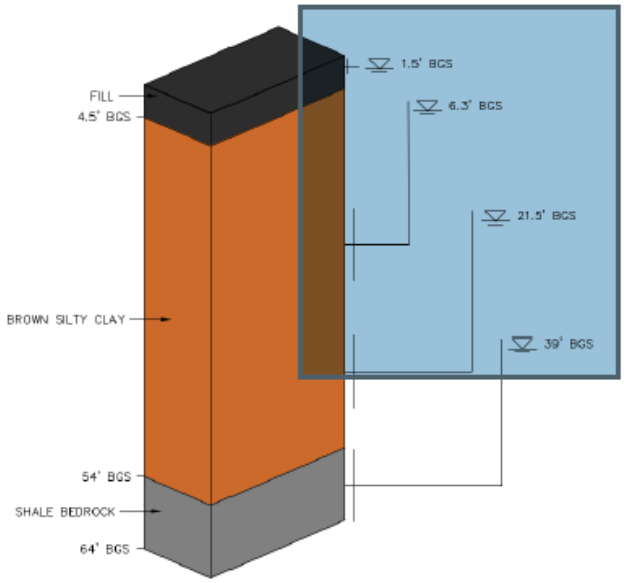


The lack of bedrock wells precludes the measurement for flow in the south and southwest direction as suggested by previous studies.

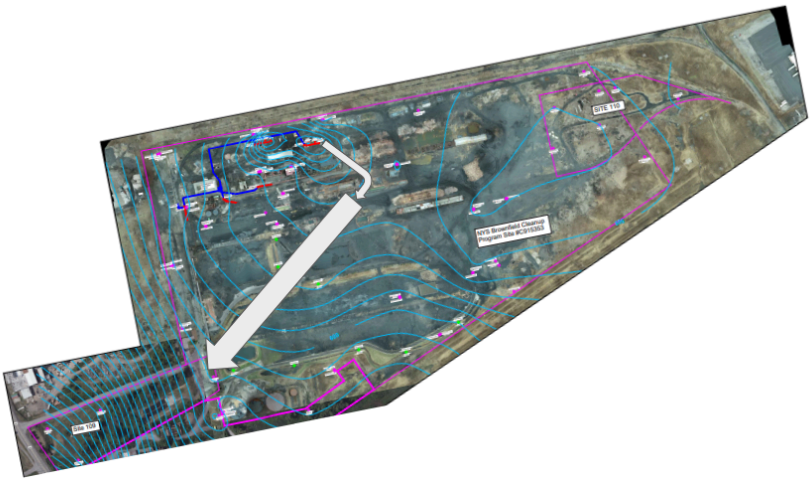
In any event, horizontal flow gradients were measured to determine components of groundwater flow using the above flow maps with the following results:

- 0.0025 Horizontal Gradient in Fill
- 0.011 Horizontal Gradient in Upper Clay
- 0.011 Horizontal Gradient in Lower Clay
- 0.00025 Horizontal Gradient in Bedrock

The results suggest that the lowest horizontal gradients are present in the fill and that horizontal gradients are one to two orders of magnitude higher in the combined clay unit. Data showing vertical heads in hydrogeological units at the Tonawanda Coke BCP Site were provided in the following figure in the RIR:



The vertical gradient across the clay was calculated from the above figure to be 0.758 in the downward direction, orders of magnitude greater than any horizontal gradients measured at the site. Using the thickness reported above, this results in a flow of 0.79 feet per year in a downward direction. Given the approximate dates of likely releases during facility operations, and, given the current contaminant distribution in the clay unit, contaminants could be expected to enter the bedrock flow regime at some point in the future. In summary, contaminant transport could look like this:



Recommendation: Place additional nested wells upgradient at Site 109 into clay and bedrock units to monitor for the transgression of groundwater contamination onto the site from the Tonawanda Coke BCP Site. Add the installation and monitoring into the remedy as well as the Site Management Plan and include monitoring for the same suite of compounds analyzed at theTonawanda Coke BCP Site.

Comment 3: Potential Future Impact of the Allied BCP Site on Site 109

The Allied BCP Site is currently under investigation by Inventum Engineering on behalf of the responsible parties. Initial work plans submitted with the BCP application relied on three previous studies in NYSDEC files, but did not perform an ASTM-style ESA; therefore no concerted effort was made to ascertain the industrial history of the property. Comments on the Allied BCP Application were submitted under separate cover, some of which are reiterated herein. The work plan for the Allied BCP Site was based on a general site investigation approach and was not targeted at historical operations that could have released petroleum or hazardous substances to the environment. While the BCP application assumed that the Allied facility produced plastics using ethylene as a raw product, a preliminary examination of historical documents in accordance with ASTM E1527 by nygeology revealed that the ethylene tank used to manufacture the polyethylene, located to the south on the parcel, was not present for much of the site manufacturing operations, as it was installed later in the evolution of manufacturing operations at the site.

Research has revealed that coking byproducts were commonly used as the original feedstocks for plastics operation and were typically located near coking facilities. Additional information discovered during the review revealed that off-gasses, produced as a byproduct of the Tonawanda Coke coking operations, were piped to the Allied parcel for processing. Comments submitted previously on the Tonawanda Coke BCP Work Plan detailed some six dozen byproduct operations, included here by reference, that generated listed K Wastes and other wastes. Several operations consistent with coke byproduct processing were noted at the Allied BCP Site on historic fire insurance maps and aerial photos, including:

1.) a building labeled the 'Coke Building' adjacent to the pipeline from Tonawanda Coke where some of the off-gas byproducts were treated and stored;

2.) a group of elongated above-ground tanks (ASTs) in saddles on the north side of the property likely used to store the light oil byproduct mix including benzene and other aromatics; and

3.) a gas holder and likely gas purification boxes to remove cyanide.

Please contact Clean Air if additional information is needed on these maps or aerial photos.

The future impact to Site 109 concerns contaminated groundwater entering the site from the Allied BCP Site. ASTM E1527 requires that a Recognized Environmental Condition be identified by the Environmental Professional when known hydrogeologic/geologic conditions may indicate a high probability of hazardous substances or petroleum products may migrate onto a property. Specifically, although the hydraulic gradient in groundwater toward the Niagara River measured at Site 109 suggest that any on-site contamination would indeed flow to the river, the rules of contaminant transport hydrogeology dictate that compounds from a point source that spread downgradient are subject to the forces of advection and dispersion. In effect, this means that any groundwater contamination originating from the adjacent ASTs and the former Coke Building could spread onto Site 109.

Recommendation: Place additional nested wells side-gradient relative to the Allied BCP Site. Well should be placed to the south at Site 109 into shallow and deeper units to monitor for the transgression of groundwater contamination onto the site from the Allied BCP Site.

Comment 4: Use of Ecological SCOs

In Section 7.4 Proposed Changes to the Original Remedy, a summary of the changes to the original ROD are shown. The remedy changes include (1) Excavation of soil exceeding the protection of ecological resources soil cleanup objectives (SCOs) in the on-site drainage ditch corridor; and (2) Use of a cover system over exposed soils that exceed the commercial use SCOs. It is likely that ecological SCOs were chosen to protect the river ecology. We agree with these proposed changes presented here in the summary, but it is unclear why the remedies are different until they are noted in Section 8.2 Evaluation Criteria.

Recommendation: The document could be strengthened in this table by clarifying the reason ecological SCOs were chosen over commercial SCOs.

Comment 5: Section 9 Proposed Amended Remedy 5. Site Management Plan

Soil from the drainage ditch corridor will be removed. Soil that exceeds 500 ppm total PAHs will either be disposed of off-site at a permitted landfill or placed on Operable Unit 01 (Site 110) if the soil can be beneficially used and such placement is allowed by the remedy selected for Operable Unit 01. This seems premature but we recognize the benefit of concentrating the management of contaminants on site. While this Operable Unit remedy can be considered as part of the entire site, the Site Management Plan presented in subsection 5 seems to relate only to OU2; whereas waste from OU1 could be placed as part of an Operable Unit that has not yet been designed or presented.

Recommendation: The document could be strengthened by explaining how management of OU2 will be handled in a future OU1 ROD.

Respectfully Submitted,

Thomas J. Morahan. P.G.
PG: NY001199

References

Clean Air Coalition of Western New York. Comments on Allied Plastics BCP Application, March 2023.

INVENTUM ENGINEERING, PC. DRAFT Remedial Investigation Report - Riverview Innovation & Technology Campus Brownfield Cleanup Program Site No. C915353 Tonawanda, New York, August 2023

NYSDEC REGION 9. FACT SHEET - Tonawanda Coke - State Superfund Program SITE No. 915055*, February 2024*

New York State Department of Environmental Conservation Division of Environmental Remediation. PROPOSED RECORD OF DECISION AMENDMENT, TONAWANDA COKE SITE – OPERABLE UNIT 2 - Registry No. 915055*, February 2024*

New York State Professional Geological Services PLLC. Phase I Environmental Site Assessment: Tonawanda Coke and Related Parcels, Tonawanda, NY, August 2020

From: Bridge Clean Air
To: Mcpherson, Benjamin J (DEC)
Cc: Thomas Morahan
Subject: Site 109 Comments Addendum
Date: Wednesday, May 1, 2024 1:52:03 PM

Hi Ben,

We have one addendum to the Site 109 comments we submitted yesterday, related to the TENORM document recently uploaded to Infolocator for the BCP site 915353.

Regarding the following language in Section 1.2 of the MJW report developed for Inventum Engineering and the Riverview Innovation and Technology Campus:

"In addition to the work described herein, MJW has conducted work and is preparing work plans for three properties around the BCP Site" including "Site 108 – 3800 River Road, a portion of the Tonawanda Coke Corporation (TCC) State Superfund Site, NYSDEC #915055."

Note that the above work does not address Site 109 (OU-2) or Site 110 (OU-1.) Further, Section 1.4 (GPS-Enhanced Gamma Walkover Survey of the RITC Site) contains the following language:

"Attachment 2 is titled Gamma Walkover Survey Report for the Riverview Innovation & Technology Campus, Inc. 3875 River Road, Tonawanda, New York 14150 BCP SITE No. C915353. The results of the gamma walkover survey performed in June of 2023 show an elevated area of gamma activity in the central/western portion of the site approximately 20 meters (m) wide by 200 m long."

Note that the central/western part of the BCP site where the gamma hotspot was located is very close to Site 102 (OU-2) and runoff from this area, for at least the six decades prior to the emplacement of the new stormwater control system moved from the northwest portion of the property to its current location, would have drained to Site 109.

This should be considered during site remediation at Site 109 (OU-2.) It is likely that the proposed remedies will be sufficient for soil left on-site, however 1.) this should be confirmed before or during site remediation; and 2.) any material to be removed for disposal elsewhere should be confirmed to pass TENORM disposal criteria, especially if any of the waste is directed to Site 110 (OU-1).

Thanks,

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