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# EXPLANATION OF SIGNIFICANT DIFFERENCE

## BUFFALO COLOR CORPORATION AREA D SITE

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City of Buffalo / Erie County / Site No. 915012 / September 2015

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Prepared by the New York State Department of Environmental Conservation  
Division of Environmental Remediation

### 1.0 INTRODUCTION

The purpose of this notice is to describe the progress of the cleanup at the Buffalo Color Corporation (BCC) Area D Site (Site) and to inform you about a change in the Site remedy. The Site is located in a mixed residential/industrial area in the South Buffalo section of the City of Buffalo, NY (see Figure 1). The Site is approximately 19 acres in size and occupies an entire peninsula situated along the upper industrial reach of the Buffalo River. In November 1991, the New York State Department of Environmental Conservation (the Department) issued a Record of Decision which selected a remedy to clean up the Site. The selected remedy consisted of the following:

- containment of waste by a soil bentonite vertical hydraulic barrier wall and engineered cap system;
- extraction and treatment of contaminated groundwater;
- removal of near shore contaminated sediments from the Buffalo River; and
- protection of the river bank from erosion.

During the course of the remedial construction, an extensive amount of waste material was discovered outside the boundary limits of the cap and perimeter vertical hydraulic barrier wall, near a section of river bank along the southwest section of the Site. The waste material consisted of fill and grossly contaminated material (GCM) typically found throughout the Site, and a majority of this GCM along the riverbank was removed. However, due to the technical difficulties of bracing the vertical hydraulic barrier wall necessary to excavate all GCM outside of the limits of the wall, a section of GCM along the river bank was only partially removed.

This Explanation of Significant Difference (ESD) will become part of the Administrative Record for this Site. The information here is a summary of what can be found in greater detail in documents that have been placed in the following repositories:

<p><b>Erie County Public Library Main Branch 1 Lafayette Square Buffalo, New York 14203 (716) 858-8900 <a href="http://www.buffalolib.org">http://www.buffalolib.org</a> Monday: 8:30 a.m. – 6:00 p.m. Tuesday: 8:30 a.m. - 6:00 p.m. Wednesday: 8:30 p.m. - 6:00 p.m. Thursday: 8:30 a.m. – 8:00 p.m. Friday: 8:30 a.m. - 6:00 p.m. Saturday: 8:30 a.m. - 6:00 p.m. Sunday: 12:00 a.m. - 5:00 p.m.</b></p>	<p><b>NYSDEC Region 9 Office Division of Environmental Remediation 270 Michigan Avenue, 3rd Floor Buffalo, New York 14203-2915 Monday - Friday: 8:30 a.m. - 3:30 p.m. Contact: Eugene Melnyk (716) 851-7220 <a href="mailto:eugene.melnik@dec.ny.gov">eugene.melnik@dec.ny.gov</a> By Appointment Only</b></p>
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Although this is not a request for comments, interested persons are invited to contact the Department's Project Manager for this Site (see Section 5) to obtain more information or have questions answered.

## 2.0 SITE DESCRIPTION AND ORIGINAL REMEDY

### 2.1 Site History, Contamination, and Selected Remedy

- This Site, known as Area D, is part of the former Buffalo Color Corporation (BCC) chemical/dye plant, which contained other areas designated as Areas A through H. These areas of the BCC plant were developed and operated during various periods through the decades of chemical production at the Site. The BCC Area D Site is located in a mixed residential/commercial/industrial area in the South Buffalo section of the City of Buffalo, NY. The Site occupies an entire peninsula situated along the upper industrial use reach of the Buffalo River. The Site consists of a 19 acre parcel of vacant, open land. No structures are currently situated on the Site. Area D is bounded by the Buffalo River along the eastern and southwestern property limits, an active rail line along the west, and an abandoned railroad right-of-way and the former BCC Area A plant site to the north.
- The BCC plant had been used for the production of dyestuff, organic chemicals and intermediate chemicals for more than one hundred years until the remaining plant operations ceased in 2003. During operation of the Site, spills from chemical processing and on-site process waste management resulted in contamination of soil and groundwater on the Site. Contaminant sources included iron oxide lagoons which were used to manage iron oxide sludge wastes and a metal sludge weathering area which was used for the management of triphenylmethane dyes.
- A Consent Agreement between BCC and the Department was signed in 1982. A Remedial Investigation / Feasibility Study (RI/FS) was finalized in 1991. Portions of Area D that were a concern included:
  - the “weathering area” located at the tip of the peninsula which was utilized for the storage of metal oxide sludges for weathering before shipment to metal recyclers (1916-1976);
  - the “iron oxide sludge lagoons” which were used for storage of iron oxide sludge from the manufacture of dyes and intermediates (1916-1976);
  - tank farm areas used for the bulk storage of petroleum products and process chemicals; and

- an area on the eastern side of the peninsula formerly occupied by open burn pits (1922-1954) and later by an incinerator (1954-1972).

The RI revealed widespread and variable contamination throughout Area D. Contamination was found at virtually every location of the Site that was investigated.

- The Record of Decision (ROD), signed in 1991, selected a remedy for Area D consisting of:
  - containment of waste by a soil bentonite vertical hydraulic barrier wall and an engineered cap system;
  - extraction and treatment of contaminated groundwater;
  - removal of contaminated sediments from the Buffalo River; and
  - protection of the river bank from erosion.

Since Allied Chemical (predecessor to Honeywell) maintained environmental liabilities on the Site, Allied Chemical entered into a Consent Order with the Department in 1993 for Site Remedial Design/Remedial Action (RD/RA) and initiated remedial design activities. Remedial construction work, including covering of the remaining GCM outside the limits of the perimeter slurry wall, was initiated in 1997 and was completed in 1998. Final riverbank habitat enhancements were completed in 1999.

### **3.0 CURRENT STATUS**

The Buffalo River submerged riverbank in the vicinity of the existing cover system is situated in an environment where conditions are suitable for capping/covering in-place. The interim remedy (discussed below) has been functioning effectively as a cap, isolating the GCM from the environment. Ongoing monitoring and maintenance is required to ensure that the cap system, which is located outside the navigation channel limits, is not damaged by navigation or another use of the river or dredged as part of future navigation maintenance of the river.

## **4.0 DESCRIPTION OF SIGNIFICANT DIFFERENCE**

### **4.1 New Information**

During the course of the remedial construction, Site conditions varied along the riverbank, and in general, more contaminated sediment and GCM requiring removal was encountered than originally known. In most instances, the additional submerged fill and contaminated sediment were removed. A section of riverbank along the southwest section of the Area D peninsula contained a significant amount of GCM outside the boundary limits of the cap and perimeter vertical hydraulic barrier wall. This section of the riverbank, prior to Site remediation, was known as the “slough area” which was the result of an embankment failure that reportedly occurred in 1937. The characteristics of the soil in the embankment slough area had not been adequately characterized during the RI. During the course of the riverbank work, it became apparent that the sloughed material was similar to GCM and fill found throughout the upland areas of the Site. Field change measures were implemented to remove the GCM from the slough area outside the limits of the vertical hydraulic barrier wall. However, a section of GCM along the river bank could not be completely removed due to technical constraints related to maintaining the structural stability of the recently constructed vertical hydraulic barrier wall. This situation resulted in the need to limit the extent of the excavation of the GCM to the feasible limits that could be achieved without a failure of the slope and barrier wall. This resulted in leaving in-place approximately 4,000 cubic

yards of GCM along approximately 500 linear feet of riverbank between Site riverbank stations 19+00 and 24+00. The interim action taken to address the GCM involved capping this material with a geosynthetic fabric, followed by a sand and rock isolation layer, and an upper riprap layer for erosion protection. This area on the southwest side of the Area D peninsula riverbank was to be restored with unique riverbank habitat enhancements. These habitat restoration enhancements were modified, as the plan originally envisioned could no longer be constructed.

Following the completion of the Site remediation work and placement of the interim cap over the remaining GCM in 1998, several focused investigations and evaluations of the riverbank in this area were conducted to assess the toxicity potential of the capped GCM to the benthic organisms, potential contamination of the surface water, and potential contamination of newly deposited sediments in the Buffalo River. Evaluations of near shore environmental conditions were completed in 2003, 2005, and 2009. The laboratory results of sampled material underlying the riverbank cap confirmed that the GCM below the interim cap was similar in nature to the pre-remediation upland. Toxicity testing of water from the capped in-place area revealed varying levels of toxicity to test organisms. However, the river bottom adjacent to this area is a low energy environment and is depositional in nature (i.e., new sediment from the upstream watershed is continually deposited in this riverbank area further isolating the capped GCM). Additional investigation including coring and sampling of newly deposited sediment in the near-shore riverbank area was completed in 2011 and summarized in a Focused Feasibility Study. The additional investigation confirmed that the isolation of the GCM effectively insulates the remaining GCM from the river environment. There were no indications of contaminant migration through pore water to adjacent sediment. The Focused Feasibility Study concluded that no further action would be necessary, to provide a protective remedy.

In summary, the remaining GCM is being effectively contained beneath the cap. Ongoing deposition of upstream sediment continues to accrete in this area, further isolating the remaining material from erosion and diffusion into the riverine environment. The level of contaminants in the GCM will not likely diminish over time, but the GCM is immobilized and isolated by the constructed cap system and natural depositional process that further isolates this material. This conclusion is supported by the results of several investigations and evaluations over a period of 13 years.

## **4.2 Comparison of Changes with the 1991 ROD Remedy**

The 1991 ROD for the Site called for containment of waste by a vertical hydraulic barrier wall and an engineered cap system; extraction and treatment of contaminated groundwater; removal of contaminated sediments from the Buffalo River; and protection of the river bank from erosion. Each of these remedial elements has been implemented, with the exception of the area of GCM outside of the limits of the containment wall, and the associated area of habitat enhancement. A field revision of the remediation plan for this section of the Area D riverbank was required during the construction phase of the project. The revised remediation measures resulted in the removal of most of this material, but because complete removal of the GCM could have compromised the integrity of the recently constructed wall along a 500 foot section of riverbank, as discussed below, a decision was made to leave the material in place.

Various options were evaluated and the Responsible Party elected to isolate in-place approximately 4,000 cubic yards of GCM with a cap consisting of a geotextile fabric overlain by

a sand/rock layer for isolation, and covering the sand layer with riprap armoring for erosion protection. This measure resulted in leaving GCM in-place along a riverine riparian embankment under an isolation cap and eliminating a planned riverbank habitat restoration feature. The GCM has been managed in-place since that time.

This ESD acknowledges the ROD required remedial elements already in place, and calls for the acceptance of the installed cap system for the affected area of river sediments, with appropriate site management (e.g., inspection, maintenance), as the final remedy for this area. The Site Management Plan includes additional measures to monitor and maintain the in-river cap system. Site management obligations are acknowledged in an institutional control, in the form of an environmental easement, which was executed and recorded in 2014.

## **5.0 SCHEDULE AND MORE INFORMATION**

The revised riverbank remediation and restoration efforts have been in-place since 1998. No further remediation efforts are deemed necessary. The Site, including the riverbank environment is under ongoing, routine maintenance and monitoring with periodic reporting of conditions of the remediation measures and effectiveness of the engineering controls.

If you have questions or need additional information you may contact any of the following:

For Technical Questions about the Explanation of Significant Differences, Contact:

Eugene Melnyk, P.E., Project Manager  
New York State Department of Environmental Conservation  
Division of Environmental Remediation  
270 Michigan Avenue  
Buffalo, New York 14203-2915  
(716) 851-7220 Email: [eugene.melnik@dec.ny.gov](mailto:eugene.melnik@dec.ny.gov)




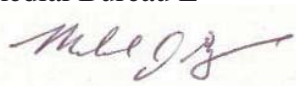

For Site-Related Health Questions about the Explanation of Significant Differences, Contact:

Jacquelyn Nealon  
New York State Department of Health,  
Bureau of Environmental Exposure Investigation  
Empire State Plaza  
Corning Tower, Room 1787  
Albany, New York 12237  
(518) 402-7860  
Email: [bee@health.ny.gov](mailto:bee@health.ny.gov)

## **6.0 DECLARATION**

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

## 6.0 ESD REMEDY SIGNATURE PAGE

<u>9/21/2015</u> Date	 _____ Eugene Mienyk, Project Manager Region 9
<u>9/21/2015</u> Date	 _____ Chad Staniszewski, KHWKE Region 9
<u>9/30/2015</u> Date	 _____ Michael Cruden, Director Remedial Bureau E
<u>9/30/2015</u> Date	 _____ Michael J. Ryan, Assistant Director Division of Environmental Remediation
<u>9/30/2015</u> Date	 _____ Robert W. Schick, Director Division of Environmental Remediation





0 462.5 925 1,850 2,775 3,700 Feet

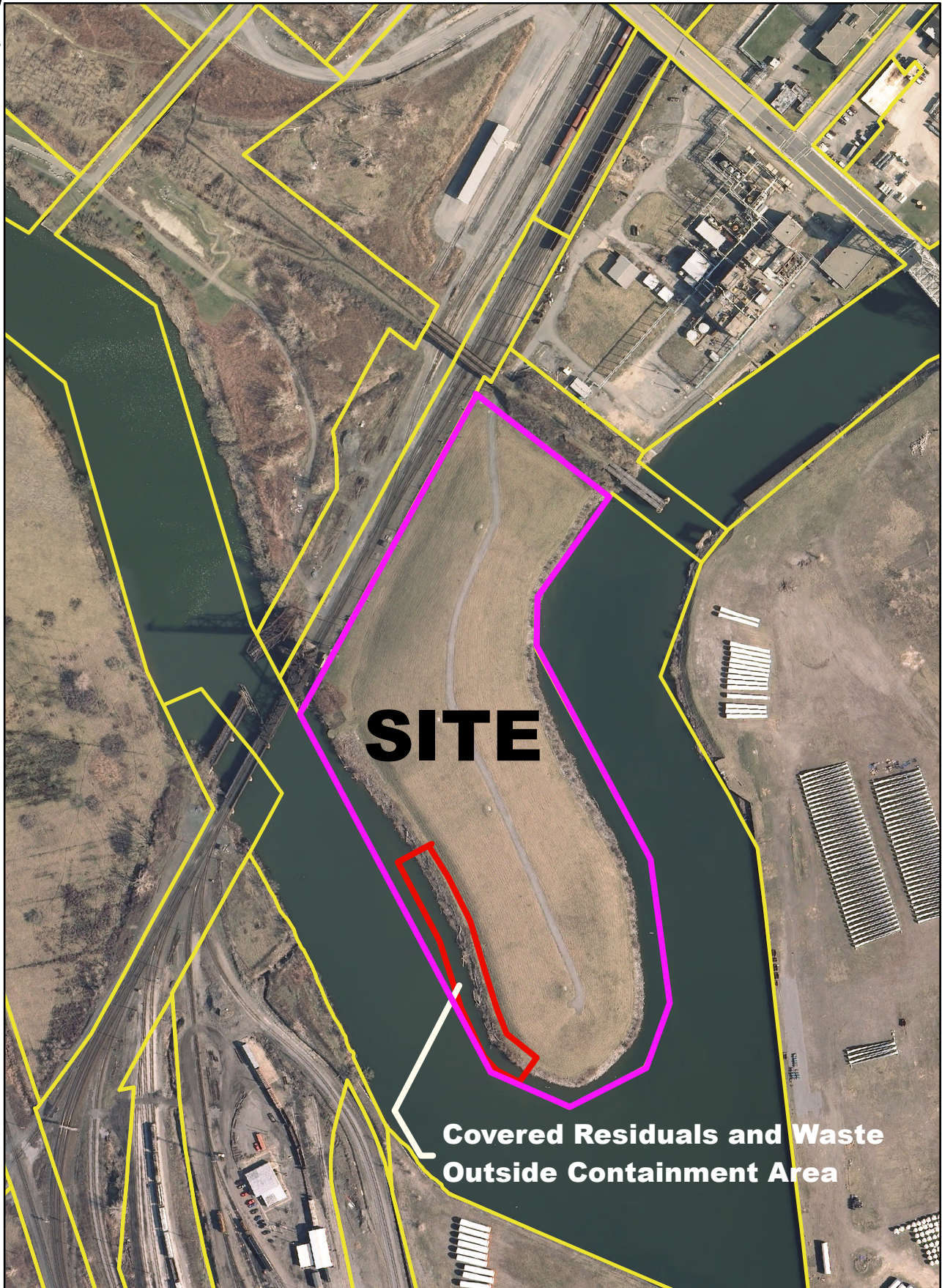


**Buffalo Color Corp. Area D - NYSDEC Site No. 915012**  
**City of Buffalo, Erie Co. SBL: 122.16-1-10** **FIGURE 1**





0 115 230 460 690 920 Feet



**Buffalo Color Corp. Area D - NYSDEC Site No. 915012**  
**City of Buffalo, Erie Co. SBL: 122.16-1-10** **FIGURE 2**