EXPLANATION OF SIGNIFICANT DIFFERENCE
BASF MANUFACTURING PLANT SITE
Operable Unit No. 1

Rensselaer (City) / Rensselaer County / Site No. 4-42-027 / February 2010

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 BASF Manufacturing Plant Site and to inform you about a change in the Site remedy. BASF has proposed an alternative cover for the former lagoon area. This Explanation of Significant Difference (ESD) is required to explain the alternative cover system and the basis for its approval.

The BASF Manufacturing Plant Site is a former industrial plant that is located south and west of the intersection of Routes 9 and 9J in Rensselaer. On September 11, 2003, the New York State Department of Environmental Conservation (NYSDEC) issued a Record of Decision (ROD) document which selected a remedy to cleanup the Site. The NYSDEC has since approved a Remedial Action Work Plan for the Capping of the Lagoon Area at the BASF Manufacturing Plant Site. This Work Plan includes the alternative cover and the explanation of changing from the conventional cap stated in the ROD.

The alternative cover meets all of the substantive requirements (equivalent protection of human health and environment) for the lagoon cap as specified in the September 2003 ROD. The cover also conforms with the ROD implemented institutional controls (groundwater use restriction and restricted future use). The advantages over the conventional cap (utilizing asphalt and existing concrete) with an alternative cover (consisting of multiple fill layers vegetated with native plant species) are several. The alternative cover expands the use of green space, reduces stormwater volume through soil retention, will improve stormwater quality through filtration, and will provide green buffer zones around the property (including use as walkway along the River). The new cover is consistent with NYSDEC-approved Landfill capping remedies used for closure at the BASF Corporation Closed Landfill, Volunteer Site No.V00521.

This 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:

New York State Department of Environmental Conservation
Office of Environmental Quality, Region 4
1130 North Westcott Road
Schenectady, NY 12306
Office hours: Mon-Fri. 8:30-4:45 PM
Project Manager: John R. Strang, P.E. 518-357-2390

Rensselaer Public Library
810 Broadway
Rensselaer, NY 12144
Library hours: M 2-5 PM T, F10-5 PM
W, Th 10-8 PM 518-462-1193

Although this is not a request for comments, interested persons are invited to contact the NYSDEC's Project Manager for this site to obtain more information or have questions answered.

2.0 SITE DESCRIPTION AND ORIGINAL REMEDY

2.1 Site History, Contamination, and Selected Remedy

The North and South Lagoons are located across Riverside Avenue from the BASF Manufacturing Plant Site. Riverside Avenue is the eastern boundary for the Lagoon area. The Hudson River is the boundary for the Lagoon area to the west. A steel bulkhead rises above the River along the western edge of the lagoons. The two Lagoons were constructed end to end of each other and measure 780' by 180' (approximately 3.5 acres). These Lagoons stored the wastewater generated by operations at the BASF Manufacturing Plant. Components of the September 2003 ROD in regards to the closure of the Lagoons are:
1 - excavate the sludge from both lagoons and dispose off-site at an approved facility, and
2 - install a low permeability cap, utilizing asphalt and existing concrete, over those areas with residual soil contamination not currently covered by competent pavement or buildings.
3 - Once completed, the inspection and annual certification, maintenance, and repair of the conventional cap would be required.

3.0 CURRENT STATUS

The remediation of the North and South Lagoons was done in three phases.
1. Under an interim remedial measure (IRM), 12,000 tons of soil highly contaminated with arsenic was removed on the east side of the North Lagoon. This work was completed by August 2003.
2. In both the North and South Lagoons, the remediation consisted of: draining standing water, removal and processing of accumulated sludge, off-site disposal of 14,000 tons of lagoon sludge, removal and disposal of 900 feet of lagoon process piping, sampling and discharge of 6.3 million gallons of construction wastewater, and processing (cleaning) of lagoon rip-rap and reuse of the rip-rap as lagoon fill material. This cleaning of the Lagoons was completed as of June 2005.
3. The Lagoons then remained open, as BASF had an in-situ sulfide injection program done to address arsenic groundwater contamination. Three injections were done, in May 2005, August 2006 and June 2008.

In June 2008, the NYSDEC received this alternative cover proposal. The work to install the cover at the North and South Lagoons began in February 2009. The work consisted of filling the dewatered lagoons with approved soil (soil meeting the lower of 6 NYCRR Part 375 Soil Cleanup Objectives for commercial use or protection of groundwater) and placement of a stone biota barrier (to prevent burrowing animals from contacting underlying lagoon area soil) around the outside of each lagoon. The alternative cover is an engineered approach to minimize rainwater/snow from percolating past residual arsenic in the underlying soils. The thickness of the cover is up to 10-feet thick within the former North and South Lagoons to bring the lagoon voids up to the proposed topographic elevations. Cross sections of the North and South Lagoons are attached.

Twelve inches of NYSDEC-approved topsoil has been placed on top and seeded as the final cover. The topsoil layer is designed to provide sufficient temporary water storage during storm events to limit infiltration. The former South Lagoon also includes a lined (40 mil high density polyethylene) stormwater detention basin. The Lagoon area cover will be completed in Spring 2010 with planting of trees and shrubs. The alternative cover meets all of the substantive requirements (equivalent protection of human health and environment) for the lagoon cap as specified in the September 2003 ROD.

4.0 Description of Significant Difference

4.1 New Information

An equivalency analysis was performed to demonstrate that the ROD capping objectives will be met with the alternative cover design (consisting of a cover with multiple fill layers vegetated with native plant species) for the Lagoon Area. The institutional controls in the ROD (groundwater use restriction and restricted for commercial/industrial future use) are unchanged with the alternative cover.

The risks to human health and the environment associated with the Lagoon Area soil will be mitigated or eliminated through the following key design elements (see attached Figures 1 and 2):

1. The cover and biota barrier will eliminate direct human health and wildlife exposure to underlying soil.
2. The combination of grading improvements, enhanced evapotranspiration and water storage in the soil and the detention basin will reduce recharge/infiltration in the Lagoon Area, thereby minimizing groundwater flow through the Lagoon Area to the Hudson River.
3. The Lagoon Area will be vegetated with a variety of grasses, trees and shrubs which will provide erosion protection for the Lagoon Area soils through root zone stabilization mechanisms.
4. Positive grading toward the Hudson River will help reduce infiltration.
5. Stormwater quality improvement will occur via filtration through the cover vegetation.

4.2 Comparison of Changes with Original Remedy

Drainage and Erosion Control

A significant advantage of the alternative cover design (multiple fill layers vegetated with native plant species) over the original ROD conventional impermeable cap (asphalt and concrete) is reduction in stormwater runoff and improvement in the quality of the stormwater. The proposed cover has been designed to reduce stormwater runoff volumes and mitigate the erosive properties of significant storm events via the incorporation of mild slopes, dense vegetation cover, and an integrated stormwater detention basin sized to accommodate a 10-year, 24-hour storm event. There are no additional impacts to groundwater with this change to an alternative cover from the conventional cap.

Long-Term Maintenance

In contrast to the performance of asphalt and concrete caps, which can deteriorate with time due to differential settling, freeze-thaw cracking and desiccation cracking, the performance of the proposed vegetated cover is expected to improve with time due to root and plant development and increased water holding capacity as the soil horizons develop and incorporate natural organic matter into the soil. The long-term maintenance requirements of the alternative cover are expected to decrease with time, as opposed to increased maintenance requirements with time for the conventional cap. Under the 2003 ROD, inspection and annual certification, maintenance, and repair of the alternative cover would continue to be required.

The alternative cover provides protection of human health and the environment and compliance with Standards, Criteria and Guidance equivalent to the original conventional cap stated in the September 2003 ROD. The institutional controls in the ROD (groundwater use restriction and restricted for commercial/industrial future use) are unchanged with the alternative cover.

5.0 Schedule and More Information

The NYSDEC is issuing this ESD as a notice that a change in remedy has been made. Formal amendment of the decision document is not necessary because the NYSDEC is not reconsidering the overall remedy.

The change from an asphalt and concrete (conventional) cap to a vegetated (alternative) cover for the BASF North and South Lagoons is not considered to be a fundamental change to the remedy.

The ESD is placed in the document repository and a fact sheet will be issued to the site contact/email list. If there is significant public interest, a public availability session may be conducted to answer questions and further explain this change to the remedy.

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

NYSDEC Project Manager John R. Strang, P.E., Environmental Engineer 2 (518) 357-2390
Office of Environmental Quality, Region 4, 1130 North Westcott Road, Schenectady, NY 12306

NYSDOH Project Manager Maureen E. Schuck, Public Health Specialist (518) 402-7860
Center for Environmental Health, 547 River Street, Troy, NY 12180

2/02/10
Date

John R Strang
John Strang, Project Manager
Office of Environmental Quality, Region 4

2/02/10
Date

Keith Goertz, Region 4 Hazardous Waste Remediation Engineer
Office of Environmental Quality, Region 4

5/06/10
Date

Robert Cozzy, Acting Director
Remedial Bureau B

5/20/10
Date

Sal Ervolina, Assistant Director
Division of Environmental Remediation

5/21/10
Date

Dale Desnoyers, Director
Division of Environmental Remediation

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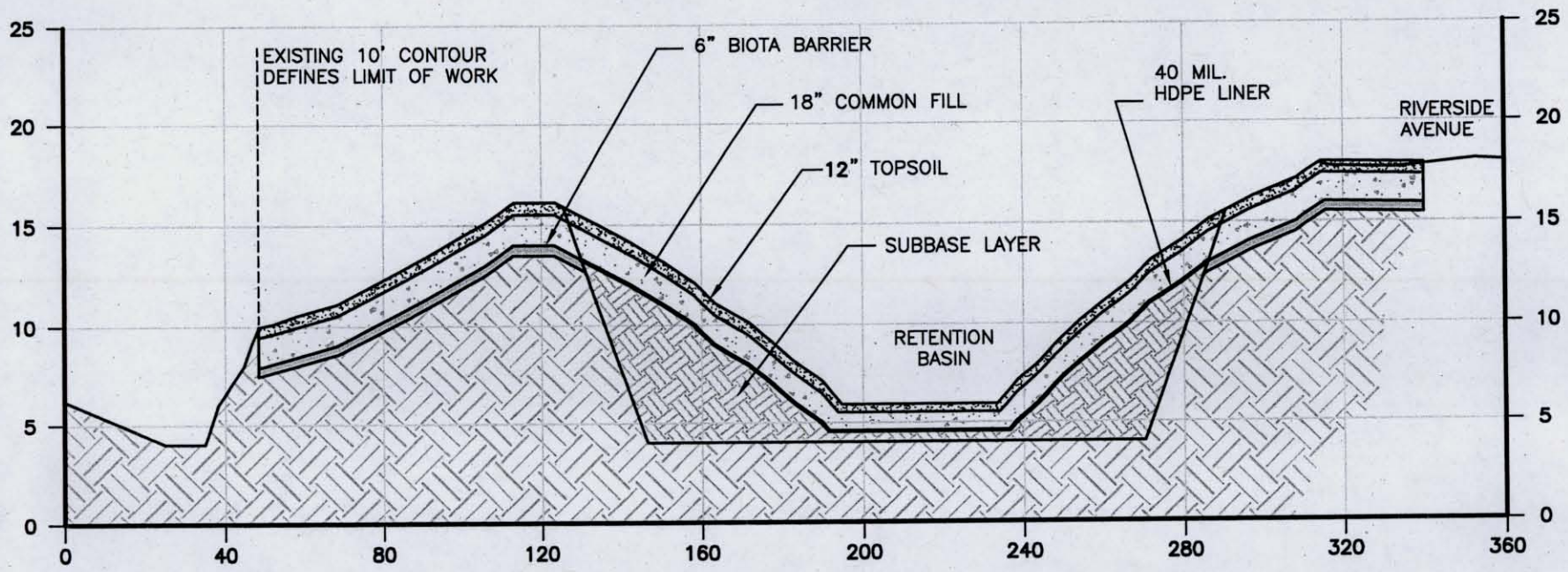

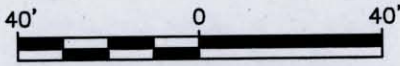

Title:

BASF RENSSELAER LAGOON AREA CROSS SECTION SOUTHERN LAGOON

Prepared For:

BASF CORPORATION
FLORHAM PARK, NEW JERSEY

ROUX ASSOCIATES, INC.
Environmental Consulting and Management

Compiled by: D.H.	Date: 17NOV09	FIGURE
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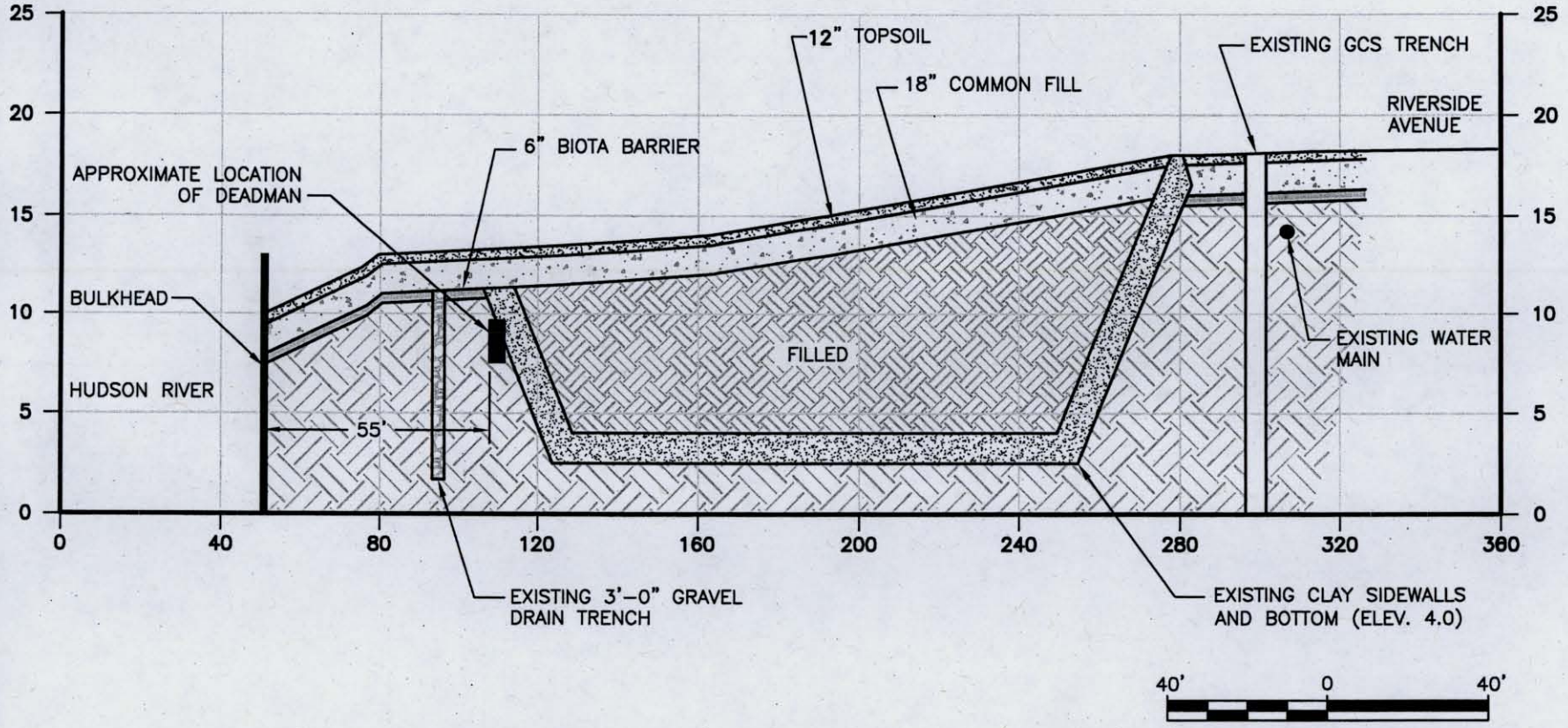

Title:

BASF RENSSELAER LAGOON AREA CROSS SECTION NORTHERN LAGOON

Prepared For:

BASF CORPORATION
FLORHAM PARK, NEW JERSEY

ROUX ASSOCIATES, INC.
Environmental Consulting and Management

Compiled by: D.H.	Date: 17NOV09	FIGURE
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