



FINAL DECISION AND RESPONSE TO COMMENTS

OCCIDENTAL CHEMICAL CORPORATION FACILITY

NEW CASTLE, DELAWARE

December 2011

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

FINAL DECISION AND RESPONSE TO COMMENTS

Purpose

The United States Environmental Protection Agency (EPA) is issuing this Final Decision and Response to Comments (Final Decision) under the authority of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. Sections 6901 to 6939(e), for the Occidental Chemical Corporation (OxyChem) facility located at 1657 River Road in New Castle County, New Castle, Delaware (hereinafter the Facility or the Site).

On September 26, 2011, EPA issued a Statement of Basis (SB) which described the information gathered during the environmental investigation at the Facility, and the Proposed Remedy for the Facility. The SB is hereby incorporated into this Final Decision by reference and made a part hereof as Attachment A.

Final Decision

The selected remedy for the Facility emphasizes source removal and source control through excavation, consolidation and capping of soils and sediments with concentrations of contaminants above Cleanup Levels. The primary sources of groundwater contamination are being and will continue to be controlled by barrier walls and free product removal, and targeted in-situ treatment will be used to address areas outside of the barrier wall containment areas and thereby restore groundwater to drinking water standards, or Maximum Concentration Levels (MCLs) promulgated by EPA pursuant to the Safe Drinking Water Act, 42 U.S.C. § 300g-1, et seq., and codified at 40 CFR Part 141. In addition, institutional controls (ICs) will be implemented to prevent current and potential future exposure to contamination.

The selected remedy consists of a soil component, a sediment component, a groundwater component, and facility wide non-engineering controls or ICs.

(1) Soil

The final remedy for soil consists of hot spot excavation, consolidation on-Site at the former cell building portion of the process area (AOC 5), and capping. Excavation will occur at locations in the Process Area (AOC 5), the Tributary (AOC 8), the Former Lay Down Area (AOC 10), and Outfall 003 (SWMU 6). The final remedy for soil will utilize EPA's Area of Contamination (AOC) policy (see Management of Remediation Waste under RCRA, EPA 530-F-98-026, October 1998) to facilitate implementation of the remedy. Some portions of the Stormwater Drainage Pond (SWMU 6) and the Former Lay Down Area (AOC 10) will be capped/covered. The former landfills and waste lakes are capped/covered and no additional remedies are required. In addition, Site-wide ICs will be implemented to provide non-engineering controls to prevent

potential future exposure and to prevent activities which could interfere with the integrity and protectiveness of the remedy.

(2) Groundwater

Final remedies for groundwater consist of the existing barrier walls and extraction and treatment systems at the Process Area (AOC 5) and Waste Lake 1 (SWMU 1). Dense non-aqueous phase liquid (DNAPL) will be addressed through periodic removal or extraction from existing recovery wells. Groundwater outside the barrier walls (AOC 7 and AOC 9) will be addressed with active remedies as detailed below. Groundwater remedies will be performed with the short-term goal of protection of surface water in the Tributary and with the long-term goal of achieving MCLs.

IMs will be continued as part of the final remedy for groundwater. Groundwater extraction and treatment inside the barrier walls will continue to be implemented to create a neutral or inward gradient, which will control the migration of contaminated groundwater. DNAPL recovery will continue until data is provided to demonstrate that it can no longer be extracted, or until less than one inch per month of free-phase DNAPL accumulates in all four recovery wells, whichever occurs first.

For AOC 7, In-Situ Enhanced Bioremediation (ISEB) at the Source Area & Air Sparge Treatment Curtain at the Tributary has been selected as the final remedy. The In-Situ air sparge curtain will treat volatile organic groundwater contaminants and manganese prior to discharge to the Tributary (AOC 8). Groundwater extraction and treatment will be implemented as a contingency remedy if the in-situ remedy is determined to not be effective in meeting the cleanup objectives and cleanup levels for AOC 7.

For AOC 9, In-Situ Redox Management (ISRM) has been selected as the final remedy. ISRM will be designed to precipitate mercury in an innocuous essentially insoluble form and treat the chlorinated solvents including tetrachloroethene and carbon tetrachloride at the same time. Groundwater extraction and treatment will be implemented as a contingency remedy if the in-situ remedy is determined not to be effective in meeting the cleanup objectives and cleanup levels for AOC 9.

(3) Sediment

The final remedies selected for Tributary (AOC 8) sediment consist of placing a reactive cap or mat over the east Tributary, dredging and backfilling the west Tributary and ICs. No sediment remedy is required for Red Lion Creek (AOC 3).

(4) Institutional Controls

Certain ICs have been developed and already implemented to support the corrective measures at the Site. The existing ICs include:

- Heavy industrial zoning prohibiting residential development.

- An Excavation Procedure and Health & Safety Plan that guides how workers handle materials encountered during subsurface work at the Facility.
- Restrictions on potable use of groundwater at the Facility. An existing IC for groundwater is currently in place. The Site is located in a Groundwater Management Zone (GMZ) that restricts installation of potable drinking water supply wells. The Delaware Department of Natural Resources and Environmental Control (DNREC) established the GMZ on April 10, 2008.
- DNREC well permitting program with regard to the installation of monitoring and supply wells.

Additional ICs will be developed and used to support the corrective measures to be implemented at the Site. Given the extent and nature of impacted media left in place, more than one IC is necessary to prevent activities which could interfere with the integrity and protectiveness of the remedy. The ICs will be implemented by an enforceable document such as an order and/or an Environmental Covenant recorded in a manner consistent with the Delaware Uniform Environmental Covenants Act (UECA), Title 7 of the Delaware Code, Chapter 29, Subchapter II. Accordingly, EPA's selected remedy includes the following additional ICs to ensure the short and long-term effectiveness of the remedy:

- Restrictions on the property deed to prevent conversion to residential use.
- Restrictions on the property deed to prevent potable use of groundwater at the Site.
- Restrictions for land disturbance at the Site.
- A Materials Management Plan, including an Excavation Procedure and Health & Safety Plan that will guide how future workers will handle materials encountered during future subsurface work at the Facility.
- Inspections and reporting to DNREC regarding compliance with the Environmental Covenant.
- Future development at the Site will include vapor barriers beneath buildings to eliminate the vapor pathway.

For convenience of reference, OxyChem in this document refers to the Site, Facility or Facility owner/operator, and Glenn Springs Holdings (GSH) refers to an affiliate company of OxyChem with responsibility for managing historic environmental matters at the Facility. GSH will be required by EPA to submit biennial review reports on the effectiveness of the ICs in meeting the human health and environmental protection objectives. This review may include, but not be limited to, review of: GSH's compliance with the Environmental Covenant requirements; groundwater and land uses within 0.5 miles of the Facility; and zoning maps or planning documents that may affect future land use in the impacted area. Additionally, GSH will be required to submit five-year review reports on the progress of the remedial measures and of meeting the Cleanup Levels and/or Corrective Action Objectives (CAOs) defined in the SB.

EPA and DNREC will review the progress of the remedy activities to confirm that Cleanup Levels and CAOs have been met. If EPA and/or DNREC determine that GSH is not achieving Cleanup Levels and/or CAOs, EPA may require GSH to perform additional studies and/or to modify the existing corrective measures. If new contamination is discovered or if the selected remedy cannot adequately mitigate risk to human health or the environment, additional

corrective measures will be developed and implemented. In the event that EPA requires the performance of additional studies and/or modification of the corrective measures selected in this Final Decision, an opportunity for public comment will be provided prior to the initiation of changes to the existing corrective measures, as necessary or appropriate.

Response to Comments

On September 26, 2011, this matter was publicly noticed in the Delaware News Journal, Wilmington, Delaware newspaper. The thirty day comment period ended on October 26, 2011. No comments or requests for a public meeting were received by EPA. EPA's decision is unchanged from that proposed in the SB.

Declaration

Based on the Administrative Record compiled for the corrective action at the Occidental Chemical Corporation Facility, EPA has determined that the Final Remedy as set forth in this Final Decision and Response to Comments is appropriate and protective of human health and the environment.

Date: 12/8/11


Abraham Ferdas, Director
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U.S. Environmental Protection Agency, Region III

Attachment A: Statement of Basis, September 12, 2011

