B General Description [40 CFR 270.14(b)(1)]

The UCC Woodbine facility is a 4,045-acre parcel of a former manufacturing facility located approximately 11.5 miles due east of the town of Woodbine in Camden County, in the southeastern corner of Georgia (Figure 1). North of the facility are the Satilla River and Todd Creek; Floyd Creek and the former Bayer CropScience (Bayer) property are southeast of the facility.

The facility address is 5954 Union Carbide Road, Woodbine, Georgia, 31569. The facility is privately owned by UCC, and the UCC contact information is listed as follows:

Meredith Harris
2301 Brazosport Blvd B-122
Freeport, Texas 77541
+1 (936) 548-9341

B.1 General Requirements [40 CFR 270.14]

B.1.1 Facility History

Industrial use of the overall property began with Thiokol Corporation (Thiokol) in 1963. Thiokol, which operated the facility until 1976, manufactured and tested solid rocket motors, illuminating ordnance devices, riot control agents (tear gas), and assorted chemicals under toll processing agreements with other companies (Law Engineering and Environmental Services 1998). Before UCC's acquisition of the facility, Thiokol manufactured the pesticide aldicarb (trade name TEMIK) for UCC. UCC manufactured and formulated pesticides at the facility from 1976 to 1986. In December 1986, UCC sold the manufacturing plant and some adjacent land to Rhone Poulenc, Inc., which was later renamed Aventis CropScience. In 2001, Bayer bought Aventis CropScience and operated the plant. Operations at the Bayer plant have ceased, and several structures previously associated with operations have been demolished. Bayer sold the property in 2022. The manufacturing and production operations were located on the property formerly owned by Bayer and are not on the current UCC facility subject to this permit.

UCC retained ownership of approximately 4,045 acres of the facility. This acreage is based on a survey conducted in 2017. Previous information indicated that UCC retained ownership of approximately 4,012 acres, but the source of this information is unsubstantiated. UCC has not obtained additional property and UCC is relying on the 2017 survey as the correct acreage. The UCC facility legal boundaries are shown on Figures 1 and 2.

B.1.2 Current Facility Operations

Currently, no Resource Conservation and Recovery Act (RCRA)-permitted units are operating at the facility. The regulated unit consists of a closed landfill (Solid Waste Management Unit [SWMU] 1) that is in post-closure care. UCC operates an In Situ Submerged Oxygen Curtain (iSOC) system that injects oxygen into the aquifer (further described in Section E.9d.2). Several SWMUs at the facility are in various stages of investigation, remediation, and closure (Section J.1).

The UCC property north of Todd Creek remains undeveloped and unused. No commercial, industrial, or agricultural activities occur on the property.

B.1.3 Activities that Require a Post-Closure Care Permit

The closed landfill (SWMU 1) is in post-closure care. A description of this unit is provided in Section J.1, and post-closure care requirements are described in detail in Sections I.2 and F.2a.

B.2 Facility Information

B.2a Topographic Map [40 CFR 270.14(b)(19)]

As shown on the facility location map (Figure 1), the UCC facility is located along the Georgia coast, approximately 45 miles north of Jacksonville, Florida. Figure 1 shows the topography of the area, extending 1 mile from the UCC facility boundaries, and Figure 3 shows the topography within the UCC closed landfill (SWMU 1), as well as monitoring wells, oxygen diffusion wells, access roads, and the security fence and gate.

40 CFR 270.14(b)(19) requires a topographic map showing a distance of 1,000 feet around the facility shown at scale of 1 inch equals 200 feet for the facility. In lieu of that, UCC provided multiple figures with various scales to better display the area and features of interest given that the facility borders tidal creeks and agricultural land with no existing industrial operations and generally flat topography. The scales and topographic contours are sufficient to show the surface water drainage and flow patterns at and near the facility and the closed landfill. The following subsections provide additional information required by 40 CFR 270.14(b)(19)(i-xi). The requirements of 40 CFR 270.14(b)(19)(xii) do not apply because no operating units are at the site.

B.2a.1 Scale and Date [40 CFR 270.14(b)(19)(i)]

Each figure includes the scale and references to the sources of data shown.

B.2a.2 The 100-Year Floodplain Area [40 CFR 270.14(b)(19)(ii)]

The 100-year floodplain area is depicted on the Federal Emergency Management Agency map on Figure 4. As shown on Figure 4, the UCC closed landfill (SWMU 1) does not lie within the 100-year floodplain area.

B.2a.3 Surface Waters [40 CFR 270.14(b)(19)(iii)]

Figure 5 shows the locations of known surface water at the UCC facility and 1,000 feet surrounding the facility. The surrounding land is mainly undeveloped tidal marshland, with some minor timber production occurring in the sparse areas of higher land that surround the facility. The Satilla River and Todd Creek lie to the north, and Floyd Creek is southeast of the facility (Figure 5).

B.2a.4 Surrounding Land Uses [40 CFR 270.14(b)(19)(iv)]

Figure 6 shows the land uses for the facility and 1,000 feet surrounding the facility. No residential use is within 1,000 feet surrounding the facility.

B.2a.5 Wind Rose [40 CFR 270.14(b)(19)(v)]

Figure 7 is a wind rose for Brunswick, Georgia, which is approximately 12 miles north of the UCC facility.

B.2a.6 Map Orientation [40 CFR 270.14(b)(19)(vi)]

A north arrow is provided on applicable figures within this document.

B.2a.7 Legal Boundaries [40 CFR 270.14(b)(19)(vii)]

Figure 2 shows the property boundary of the facility and the boundary of the closed landfill (SWMU 1).

B.2a.8 Access Control [40 CFR 270.14(b)(19)(viii)]

The entire UCC facility and adjacent former Bayer property are jointly enclosed by fencing except at the creek and river boundaries. The UCC property is accessible from the public roadway by a vehicle entrance that is secured by a locked gate (southernmost access gate shown on Figure 2). Several other access gates are along the property boundary, which are only accessible by private roads located on the former Bayer property. Additionally, the closed landfill (SWMU 1) is enclosed by a chain-link steel fence that extends 6 feet above grade and is buried 2 feet below grade to limit burrowing animals. Two locked gates are on the fence line surrounding the landfill (Figure 2). Warning signs have been placed at the locked gate of the landfill fence and at approximately 300-foot intervals along the fence.

B.2a.9 Injection and Withdrawal Wells [40 CFR 270.14(b)(19)(ix)]

Withdrawal wells located within a 0.25-mile radius of the facility boundary are shown on Figure 2. Table 1 summarizes the withdrawal well information obtained from the U.S. Geological Survey.

The UCC facility operates an iSOC system that injects oxygen into the aquifer. Figure 8 shows the locations of the 15 oxygen diffusion wells associated with the iSOC system.

B.2a.10 Buildings and Other Structures [40 CFR 270.14(b)(19)(x)]

The only structures at the facility are a former bunker, former pump house, and the remains of the historic Anchor House (Figure 2). A temporary metal shed located within the fenced-in closed landfill houses the iSOC system.

B.2a.11 Drainage and Flood Control Barriers [40 CFR 270.14(b)(19)(xi)]

The UCC facility includes no sewer lines, developed stormwater drainage pathways, nor flood control barriers. Figure 3 shows drainage swales located along the western and northern perimeters of the landfill.

B.2b Additional Information on Topographic Map for Land Disposal Facilities [40 CFR 270.14I(3)]

The topographic map for the closed landfill (Figure 3) shows the SWMU 1 boundary, monitoring wells, oxygen diffusion wells, drainage features, and access road. The following subsections provide additional required information.

B.2b.1 Uppermost Aquifer and Hydraulically Connected Aquifers Beneath Facility Property [40 CFR 270.14I(2)]

Regional and site geology and hydrogeology are discussed in Section E.3. Figures 9 and 10 show groundwater flow direction within the surficial aquifer. Cross-sections showing site geology are included as Figures 11 and 12.

B.2b.2 Point of Compliance and Groundwater Flow Direction [40 CFR 270.14I(3)]

Point of compliance (POC) wells (MW-6, MW-7, MW-8, MW-34, MW-38, and MW-39) are designated in the current permit and are screened in the shallow zone of the surficial aquifer. They are located between the landfill and Todd Creek (Figure 13).

B.2b.3 Waste Management Area(s) (i.e., Regulated Unit) [40 CFR 270.14I(3)]

Figure 3 shows the boundary and topography of the closed landfill (SWMU 1) as well as monitoring wells, oxygen diffusion wells, access roads, and the security fence and gates. Figure 13 shows the locations of the closed hazardous waste cells.

B.2b.4 Property Boundaries [40 CFR 270.14I(3)]

Figure 2 shows the property boundary of the facility and the boundary of the closed landfill (SWMU 1). The property boundary also is shown on other figures that extend to show this feature.

B.2b.5 Direction of Groundwater Flow and Location of Monitoring Wells [40 CFR 270.14I(3)]

Figure 3 shows the groundwater monitoring wells located near and within the closed landfill (SWMU 1). The groundwater flow direction within the surficial aquifer is to the north, as shown on Figures 9 and 10 for the shallow and deep zones of the surficial aquifer, respectively. Section E.6 contains additional information regarding the groundwater monitoring network.

B.2b.6 Extent of Any Groundwater Contaminant Plume [40 CFR 270.14I(4)(i)]

Figures 14 through 25 provide groundwater plume maps for the facility. Section E.5 contains additional details regarding the extent of constituents of concern (COCs).

B.3 Facility Location Information [40 CFR 270.14(b)(11); 264.18]

Figure 1 shows the facility location map. The following subsections provide additional information regarding the facility location.

B.3a Political Jurisdiction in Which Facility is Located [40 CFR 270.14(b)(11)(i)]

The facility is in Camden County, Georgia, approximately 12 miles east of Woodbine, Georgia. The facility is not located in an area included in 40 CFR 264 Appendix VI; therefore, the seismic standard and 40 CFR 270.14(b)(11)(ii) are not applicable.

B.3b Floodplain Requirements [40 CFR 270.14(b)(11)(iii),(iv); 264.18(b)]

The regulated unit (closed landfill) is not located within the 100-year floodplain, as shown on the floodplain map (Figure 4); therefore, the requirements of 40 CFR 270.14(b)(11)(iv) and 264.18(b) are not applicable.

B.3b.1 Copy of Federal Insurance Administration or Other Flood Map [40 CFR 270.14(b)(11)(iii)]

The 100-year floodplain area is depicted on the Federal Emergency Management Agency map (Figure 4). As shown on Figure 4, the UCC regulated unit (closed landfill) does not lie within the 100-year floodplain area.

B.3b.2 Concentration of Hazardous Constituents Remaining in the Unit that Would Potentially Affect Surface Waters as a Result of Washout [40 CFR 270.14(b)(11); 264.18(b)(ii)(B)]

This section is not applicable because the regulated unit (closed landfill) is not located within the 100-year floodplain.

B.3b.3 Impact of Such Concentration on Current or Potential Uses of, and Water Quality Standards Established for, the Affected Surface Waters [40 CFR 270.14(b)(11); 264.18(b)(ii)(C)]

This section is not applicable because the regulated unit (closed landfill) is not located within the 100-year floodplain.

B.3b.4 Impact of Hazardous Constituents on the Sediments of Affected Surface Waters, or the Soils of the 100-Year Floodplain, that Could Result from Washout [40 CFR 270.14(b)(11); 264.18(b)(ii)(D)]

This section is not applicable because the regulated unit (closed landfill) is not located within the 100-year floodplain.

B.3b.5 Plan and Schedule for Future Compliance [40 CFR 270.14(b)(11)(v)]

This section is not applicable because the regulated unit (closed landfill) is not located within the 100-year floodplain.