JOHN DEERE WATERLOO

(Waterloo, Iowa)

GENERAL DESCRIPTION

The 290-acre site is located in Sections 22 and 23, T89N, R13W, Black Hawk County, Iowa, near the center of Waterloo, Iowa. Black Hawk Creek bisects the site. The site is owned by Deere & Company and was entered on the Registry in November 1990.

SITE CLASSIFICATION

The site is classified "b" in accordance with 455B.427.3. Hazardous substances have been disposed of at the site, posing a significant threat to the environment.

TYPE AND QUANTITY OF HAZARDOUS WASTE

Manufacturing and disposal operations have been conducted on site since 1909. On-site waste disposal has occurred through landfilling, land treatment processes, drum burial. The amount of waste disposal is unknown. The types of hazardous wastes include paint sludge, electroplating wastes, baghouse dust, caustic paint stripper, solvents, cyanide and chromium plating sludge wastes, and petroleum products.

In July 1991, the EPA issued the facility a RCRA hazardous waste operating permit for the treatment and storage of hazardous wastes on the east side of the facility. As a condition of the permit, John Deere was required to conduct a RCRA Facility Investigation (RFI) of the potential impact of past and present solid waste management areas.

Groundwater monitoring has shown contamination in areas on both sides of Black Hawk Creek. The contaminants included several chlorinated solvents, petroleum hydrocarbon, PCBs, and dioxin. The PCBs (660 ug/L) and dioxin (0.036 ug/L) were found in one well on the east side of Black Hawk Creek near the Cedar River. This well also had floating free product, as motor oil that contained 670 ppm of PCBs. The highest concentrations of chlorinated solvents were found on the west side of the site. This included chloroethane (900 ug/L), 1,1-dichloroethane (840 ug/L), 1,2-dichloroethylene (420 ug/L), 1,1,1-trichloroethane (190 ug/L), and lesser amounts of trichloroethylene and tetrachloroethylene.

SUMMARY OF PUBLIC HEALTH AND ENVIRONMENTAL CONCERNS

- **The primary public health concern for this site is potential contamination of surface water and public drinking water.**

The John Deere Waterloo site is located near the center of Waterloo, Iowa. The site is bordered on the north by the Cedar River and is bisected by Black Hawk Creek. Both of these surface water bodies are used for fishing and recreational purposes. There are two city parks located just north and south of the site. The city of Waterloo has five municipal well fields located within two miles of the site. The Cedar Bend wells are located in the alluvial aquifer. The other four well fields are completed in bedrock.

SUMMARY OF ASSESSMENT, MONITORING OR REMEDIAL ACTIONS

The EPA is the lead agency for this site, which is being regulated under the federal RCRA program. As a condition of the hazardous waste operating permit issued in 1991, the facility was required to conduct a RCRA Facility Assessment (RFA). The purpose of the RFA was to identify past disposal activities that may require corrective action. As a result of the RFA a RCRA Facility Investigation (RFI) was initiated in June 1992 and completed in June 1994. A supplemental Corrective Measures Study (CMS) was completed in 1998 and the environmental measures identified in the study are being implemented. A Supplemental RCRA Facility Investigation (RFI) report was submitted in 2001.

2003: The U.S. Environmental Protection Agency (USEPA) is currently finalizing its review of all on site environmental data collected by the facility to date, relative to the RCRA solid waste management units (SWMUs) that have been identified at the facility. The purpose of this review is to determine whether the environmental assessments performed at the facility have characterized the nature and extent of contamination in soil and groundwater sufficiently to provide adequate information for the assessment of both human and ecological risk, and to determine the need for corrective action.

2004: The EPA completed review of all available on-site environmental data and then submitted written comments summarizing this review to John Deere representatives. Currently, John Deere is drafting a comprehensive response summary to EPA's comments. Once this response summary has been completed and submitted to the EPA, the EPA and John Deere will begin working to develop a work plan to guide data collection to complete the environmental assessment at the facility. A corrective action remedy for the facility will be determined from this assessment.

2005: John Deere - Waterloo Works (Deere) responded to the comprehensive review of existing environmental data performed by the EPA by submitting a written response summary to the EPA. While the EPA was in the process of reviewing these responses, Deere elected to proceed with redevelopment of portions of the site for Deere's own use, and also with an environmental assessment for a portion of the site for which Deere plans to transfer ownership. The EPA has been working with Deere to ensure that adequate environmental assessment has been achieved in these areas of the site slated for reuse and redevelopment. Once this has been completed, Deere and the EPA will develop a work plan to fully complete environmental contamination assessment across the remainder of the site property.

2007: Approximately 40 acres of the John Deere Waterloo site was transferred to Cedar Valley Tech Works, Inc. for redevelopment as a biotechnology education and research center.

2008: A joint EPA site visit conducted in October. An easement request was approved by IDNR and EPA for construction of service roads that did not affect the solid waste management units.

2010: John Deere and the EPA continue to work toward attaining a final remedy decision for the entire John Deere Waterloo Works site. Environmental fieldwork remaining to be done in support of a remedy decision includes John Deere will soon be performing comprehensive, facility-wide groundwater sampling and analysis in order to provide current information regarding groundwater quality.

2012: EPA/RCRA program has reviewed and commented on the Addendum to Corrective Measures Work Plan for SWMU 19A and AOC#1for property being transferred to Tech-Works

2013: John Deere, performed extensive soil sampling in an effort to complete site-wide soil assessment to support corrective action decisions. Representatives from John Deere and the U.S. Environmental Protection Agency held meeting 2013 to discuss remaining site issues, and to develop a possible final remedy in 2014. During 2014, John Deere will be developing proposals to address remaining data gaps, perform a human health baseline risk assessment, and complete a corrective measures study in order to support a final remedy decision.

2014: Data Gaps Investigation Report for Soil and Buried Waste Materials approved by EPA. Groundwater Contamination and Hydraulic Containment Assessment Work Plan" and "Quality Assurance Project Plan" were submitted in August 15, 2014 and approved with modifications by EPA.

2015: EPA approval of the Risk Assessment Work Plan Addendum and site Sampling and Analysis Plan for Supplemental Investigation of Groundwater Conditions and QAPP addendum.

2016: EPA provided conditional approval of the 2016 Groundwater Monitoring report. Based on the detections of vapor forming constituents at the facility, a Vapor Intrusion assessment work plan was developed and approved. Additionally, a Monitored Natural Attenuation evaluation was conducted to evaluate this remedial option at the facility. As part of the RCRA Facilities Investigation Remedy Selection Track (FIRST) process, an initial meeting was held to identify the level of effort needed during the Corrective Measures Study, potential remedial options and to begin development of the corrective action objectives.

2017 The following activities were completed:

A renewed hazardous waste operating permit for corrective action was issued effective October 21, 2017 and will run for 10 years.

The first phase of vapor intrusion assessment at SWMU-14 and the former C-2 building was conducted. Based on the results of the initial assessment, additional vapor intrusion assessment is necessary and is ongoing.

A work plan for additional monitoring well installation was approved in order to complete the monitoring well network for ongoing MNA sampling.

2018: The following activities were completed

EPA approved the GW-37 Groundwater Sampling report
EPA approved the October 2017 monitoring report
EPA approved the Inspection and Sampling report of Excavated Material from Building T10 Expansion
EPA approved the Focused Groundwater Investigation report
EPA approved the Vapor Intrusion Assessment Report

2019: The following activities were completed

1.) Environmental Covenant an EC was completed in May 2019 between EPA and JD with the following use limitations to address contamination on site.

a.) No Residential Land Use: The Property shall not be used for residential purposes, which for purposes of this Covenant include but are not limited to: single family homes, duplexes, multiplexes, apartments, condominiums, schools, dormitories, retirement or senior/child-care centers, or any land use where persons can be expected to reside.

b. No drinking water wells shall be installed on the John Deer Property

2.) Final Record of Decision:
In October, 2019, the EPA Region 7 has determined that the corrective actions being implemented at the John Deere Waterloo Works -Drivetrain Operations, Waterloo, Iowa Facility, as specified in the Statement of Basis, are appropriate and will be protective of human health and the environment.

Activities completed in 2020

- **Partial property transfer from Cedar Valley Tech Works to Lincoln Savings Bank and ongoing development for the Lincoln Savings Bank (building renovation and parking lot structure construction)**
- **Final Remedy Decision and Permit modification for SWMU-14; excavation of source mass contamination at Solid Waste Management Unit-14 and disposal**
- **Approval of the Corrective Measures Work Plan, Groundwater Remedy Implementation Plan and Soil Management Plan**
- **Ongoing vapor intrusion assessment at Buildings A, R, C-2, Z, Steel Shed**
- **Initial groundwater monitoring event scheduled for first week of December 2020**
- **EPA Long-term stewardship assessment of controls**

- **Potential partial property transfer from Cedar Valley Tech Works to City**

(John Deere Waterloo)