
Work Plan

Gorham Street Investigation Work Plan

**Former Hampshire Chemical Corp Facility
Waterloo, New York**

February 2010

RECEIVED
NYSDEC

MAR 02 2010

Bureau of Hazardous Materials &
Radiation Management
Division of Solid & Hazardous Waste

CH2MHILL

Introduction

This document presents additional soil sampling activities on Gorham Street for the former Hampshire Chemical Corp (HCC) facility located in Waterloo, New York (site). The site is regulated under 6 New York Code Rules and Regulations (NYCRR) Part 373 and the Resource Conservation and Recovery Act (RCRA) with the New York State Department of Environmental Conservation (NYSDEC) as the lead agency. RCRA facility investigation (RFI) efforts have been performed at the facility since 1993 to determine the nature and extent of releases to the environment. The RFI is being conducted pursuant to an Amended Administrative Consent Order (ACO) executed between HCC and NYSDEC (Index Number 8-20000218-3281, June 1, 2004).

In response to the *Gorham Street IRM [Interim Remedial Measures] Work Plan* (CH2M HILL 2008a), NYSDEC requested further investigation on the quality of soil on the eastern side of Gorham Street, adjacent to the employee parking lot (NYSDEC 2008). Based on this NYSDEC request, the *Gorham Street IRM Work Plan Addendum* (CH2M HILL 2009a) was submitted to and approved by NYSDEC (NYSDEC 2009). In a letter dated May 5, 2009, NYSDEC and the New York State Department of Health (NYSDOH) (collectively referred to herein as "the agencies") indicated that the *Gorham Street IRM Work Plan Addendum* (CH2M HILL 2009a) would be considered an investigation work plan instead of a work plan for an IRM (NYSDEC 2009). In May 2009, NYSDEC requested via e-mail communication that further delineation of cadmium also was required in the proposed sampling area on the eastern side of Gorham Street, adjacent to the employee parking lot. This work plan is presented to the agencies as an attachment to the Gorham Street investigation report, which documents the results of the May 2009 sampling event.

This work plan is an addendum to the *Gorham Street IRM Work Plan* (CH2M HILL 2008a), and the *Gorham Street IRM Work Plan Addendum* (CH2M HILL 2009a). Field activities corresponding to both work plans were completed in 2009.

This work plan addendum describes the proposed sampling and analysis of offsite soil, southwest of the Gorham Street employee parking lot of the former HCC facility. The field activities included in this work plan will be performed in accordance with the procedures provided in the quality assurance project plan (QAPP; CH2M HILL 2009b) and health, safety, and environmental plan (HASP; CH2M HILL 2009c).

Objective

The objective of this investigation is to further delineate arsenic contamination in soil identified on the east side of Gorham Street during the August 2007 and May 2009 sampling events. The results from this investigation will be used to develop remedial activities for the arsenic- and cadmium-impacted onsite soil.

Site Background

In the August 2007 sampling event, soil samples collected from two locations, SS-19 and SS-20 (Figure 1), adjacent to the employee parking lot on Gorham Street (CH2M HILL

2008b) contained arsenic that exceeded the NYSDEC (2006) Restricted Use Soil Cleanup Objectives (RUSCO): Protection of Public Health, Residential (6 NYCRR Part 375-6.8(b)) of 16 milligrams per kilogram (mg/kg). At each soil sample location, two samples were collected from depth intervals of 0 to 2 inches below ground surface (bgs) and 2 to 12 inches bgs. Measured arsenic ranged from 17 mg/kg at SS-20A to 33.4 mg/kg at SS-20B. At SS-19B, arsenic exceeded the RUSCO residential criteria in the deeper sample (2 to 12 inches bgs). At SS-20, the RUSCO residential criteria exceedances were seen in both sample depths, with the higher concentration seen in the deeper sample.

In the May 2009 sampling event, soil collected from four locations (DE-01, DE-02, DE-03, and DE-04) (Figure 1), adjacent to the employee parking lot on Gorham Street were analyzed for arsenic and cadmium. At each soil sample location, three samples were collected from depth intervals of 0 to 2 inches bgs (A), 2 to 6 inches bgs (B), and 6 to 12 inches bgs (C). At location DE-01, two additional samples (12 to 24 inches bgs [D] and 24 to 36 inches bgs [E]) were collected, while at location DE-03 samples also were collected from 12 to 24 inches bgs (D) and 24 to 29 inches bgs (E).

The soil samples contained arsenic that exceeded the RUSCO residential screening criteria up to a depth of 36 inches bgs, which was the maximum depth sampled at location DE-01. Exceedances of the RUSCO residential screening criteria for arsenic ranged from 16.7 mg/kg at DE-01C to 55.4 mg/kg at DE-04C. Cadmium was identified in exceedance of the RUSCO residential screening criteria of 2.5 mg/kg up to 29 inches bgs at location DE-03, which was the maximum depth sampled at this location. Exceedances of the RUSCO residential screening criteria for cadmium ranged from 5.12 mg/kg at DE-03D to 12.5 mg/kg at DE-03E.

Based on the August 2007 soil sample results, arsenic concentrations in soil have been delineated laterally to the north section of the eastern side of Gorham Street by SS-18 (CH2M HILL 2008b), but the May 2009 analytical data indicate that lateral delineation on the southern section of Gorham Street has not been defined. Cadmium concentrations were delineated laterally during the May 2009 sample event by sample locations DE-01 and DE-04 since the analytical results at these locations did not exceed the RUSCO residential screening criteria.

Scope of Work

Proposed investigation activities will include collecting up to 21 soil samples from sample locations DE-05 through DE-09 (Figure 1) located equidistant (approximately 13 feet) from each other over the length of the investigation area. Samples will be collected from 0 to 2 inches bgs (A), 2 to 6 inches bgs (B), and 6 to 12 inches bgs (C) at all five locations. Two additional samples will be collected from locations DE-05, DE-08, and DE-09 from 12 to 24 inches bgs (D) and 24 to 36 inches bgs (E).

Downhole tools will be decontaminated before and after use at each sample location by scrubbing and washing the tools in an Alconox® and potable water solution, rinsing with potable water, and rinsing with deionized water.

Soil samples will be submitted to Microbac Laboratories Inc. (Microbac) of Marietta, Ohio, which is certified by the New York State Environmental Laboratory Approval Program

(ELAP). Samples will be analyzed for arsenic by U.S. Environmental Protection Agency Method SW-846 6010. After sample collection, the sample location coordinates will be surveyed by CH2M HILL using the global positioning system.

Quality assurance (QA)/quality control (QC) samples for the investigation activities mentioned above will be collected in accordance with the QAPP (CH2M HILL 2009). QA/QC samples will comprise of two duplicate soil samples, two matrix spike/matrix spike duplicate soil samples, and one equipment blank. Following receipt, validation, and assessment of the analytical data, the results will be tabulated, and a technical memorandum of the results, conclusions and recommendations will be prepared and submitted to NYSDEC for review and approval.

Investigation-Derived Waste Management

Contamination of the site and offsite property shall be avoided. Rubbish, personal protective clothing, soil cuttings, decontamination fluids, or other waste material shall be managed and disposed of in accordance with the materials management plan (CH2M HILL 2007b, 2008).

Schedule

Schedule milestones have been established based on the assumption that the work plan is submitted to NYSDEC by February 19, 2010, and that a work permit for field activities will be established with the New York State Canal Corporation 3 weeks after NYSDEC's approval of the work plan. Field activities will not proceed until approval of the work plan is received by NYSDEC and a work permit has been established with the New York State Canal Corporation. In the event of changes in availability of regulatory staff, project approach, or site conditions, a revised schedule will be provided to the agencies at least 2 weeks prior to commencement of the fieldwork. The anticipated schedule milestones are as follows:

Date	Milestone
February 19, 2010	Submit work plan to agency for review (complete)
March 8, 2010	Receive comments and approval from agencies on work plan
March 9 to 30, 2010	Coordination of work permit with NYS Canal Corporation
March 31 to April 18, 2010	Field preparation and subcontracting (dependent on date NYS permit is obtained)
April 19 to 20, 2010	Mobilization; fieldwork (sampling activities, sample shipment); demobilization
April 21 to May 5, 2010	Laboratory analysis of samples
May 6 to May 20, 2010	Data validation/data management
May 21 to June 17, 2010	Preparation of technical memorandum presenting results of the investigation and an IRM work plan proposing remedial activities for the arsenic and cadmium impacted onsite soils on the east side of Gorham Street
June 18, 2010	Submittal technical memorandum and IRM to NYSDEC

References

CH2M HILL. 2007b. *Materials Management Plan, RCRA Corrective Action Program, Hampshire Chemical Corp, Waterloo, New York*. May 2007; revised October 2008.

CH2M HILL. 2008a. *Gorham Street IRM Work Plan, Former Hampshire Chemical Corp Facility, Waterloo, New York*. September.

CH2M HILL. 2008b. *RCRA Facility Investigation Addendum Report, Former Hampshire Chemical Corp, Waterloo, New York*. November.

CH2M HILL. 2009a. *Gorham Street IRM Work Plan Addendum, Former Hampshire Chemical Corp Facility, Waterloo, New York*. April.

CH2M HILL. 2009b. *Quality Assurance Project Plan, RCRA Facility Investigation, Former Hampshire Chemical Corp, Waterloo, New York*. September.

CH2M HILL. 2009c. *Health, Safety and Environmental Plan, RCRA Facility Investigation, Former Hampshire Chemical Corp, Waterloo, New York*. October.

New York State Department of Environmental Conservation (NYSDEC). 2006. *Environmental Remediation Programs. NYSDEC Restricted Use Soil Cleanup Objectives (RUSCO): Protection of Public Health, Residential and Industrial (6 NYCRR Part 375-6.8(b))*. December.

New York State Department of Environmental Conservation (NYSDEC). 2008. *Letter from NYSDEC, re: Gorham Street Interim Remedial Measures Work Plan, Hampshire Chemical Corp Facility, Seneca County, Town of Waterloo, New York*. December 9.

New York State Department of Environmental Conservation (NYSDEC). 2009. *Letter from NYSDEC, re: Gorham Street Interim Remedial Measures Work Plan Addendum, Hampshire Chemical Corp Facility, Waterloo, New York*. May 5.

New York State Department of Environmental Conservation (NYSDEC). 2010. *Letter from NYSDEC, RE: RCRA Facility Investigation Report Addendum, Former Hampshire Chemical Corporation Facility, Waterloo, New York, November 2008*. January 7.

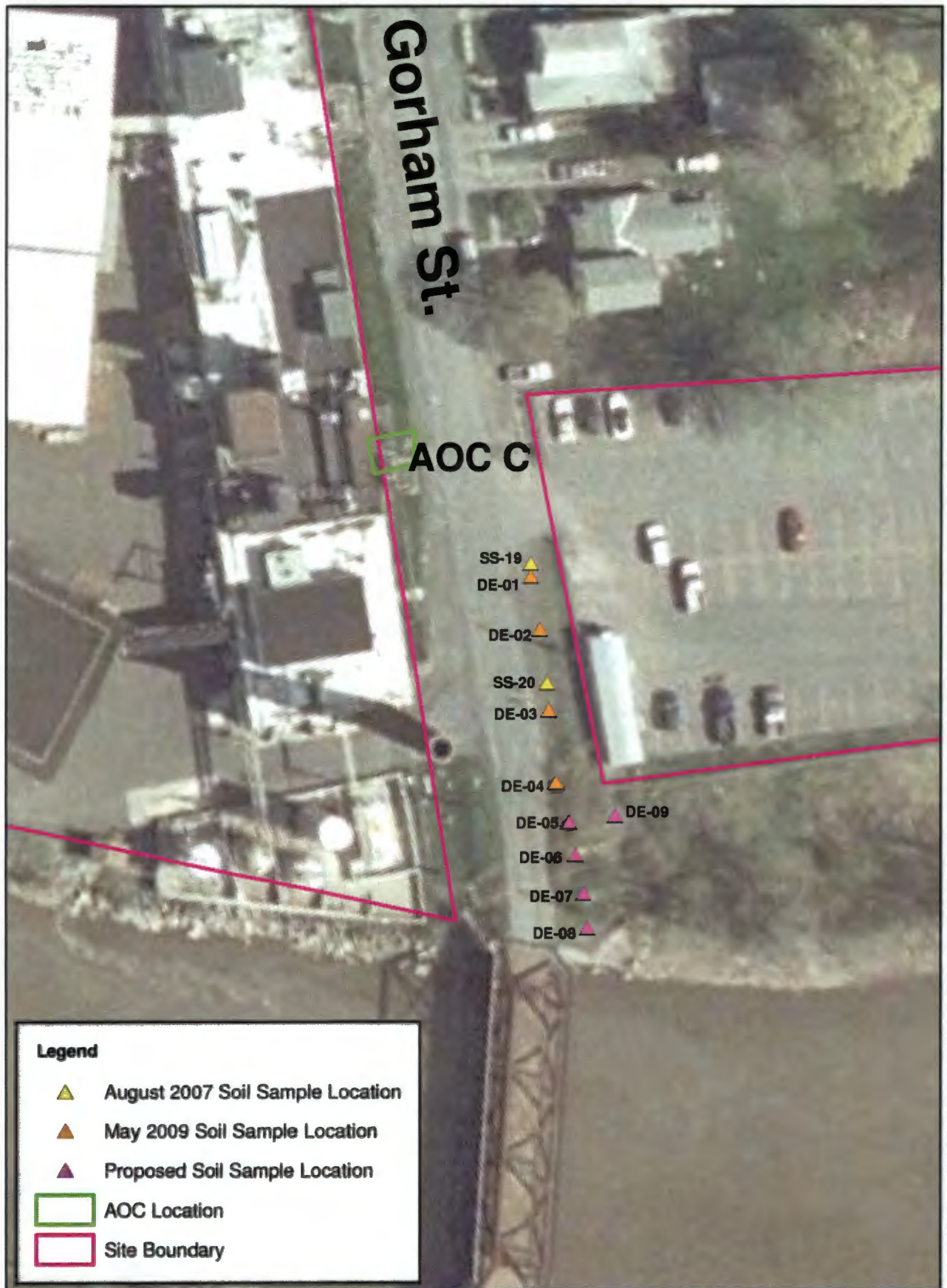


Figure 1
Gorham Street Investigation Work Plan Addendum
Offsite Proposed Sampling Locations
Former Hampshire Chemical Corp Facility
Waterloo, New York