Seneca Companies

The Complete Solution

April 19, 2010

Mr. David Young
Aurora Elevator
415 Woodruff Street
Aurora, IA 50607

Subject: Site Assessment Work Plan
Aurora Elevator
Aurora, IA

Dear Dave,
In accordance with the letter from the Iowa Department of Natural Resources dated March 26, 2010, Seneca Environmental Services submits this Site Assessment Work Plan to address agricultural chemical contamination identified at the above referenced site.

If the plan is acceptable to you, please forward it to:

Mr. Jim Kacer
Environmental Specialist
Contaminated Sites Section
Iowa Department of Natural Resources
502 East 9th Street
Des Moines, IA 50319-0034

jim.kacer@dnr.iowa.gov

If you have any questions regarding this plan, please contact us at 563-332-8000.

Sincerely,
SENECA ENVIRONMENTAL SERVICES

Neil P. DeRynck
Senior Project Manager

Attachments: Site Assessment Work Plan

SITE ASSESSMENT WORK PLAN

Aurora Elevator
415 Woodruff Street
Aurora, Iowa

PREPARED FOR:

AURORA ELEVATOR, INC.
Attn: Dave Young
415 Woodruff Street
Aurora, Iowa 50607

PREPARED BY:

SENECA ENVIRONMENTAL SERVICES
7241 Gaines Street Court
Davenport, Iowa 52806

PROJECT NO. 6353161

April 19, 2010

Introduction

Previous work at the Aurora Elevator site discovered the presence of three agricultural chemicals in a soil sample at concentrations exceeding their respective statewide standards. The sample containing the chemicals was retrieved from beneath a wooden floor in a structure, the chemical storage building (CSB), used to store and transfer agricultural chemicals.

As required by 4567 IAC 133 and a letter from the Iowa Department of Natural resources dated March 26, 2010, Aurora Elevator has formulated a Site Assessment Work Plan (SAWP). The SAWP includes:

- A method to be used in identifying the vertical and horizontal extent in soil and groundwater of pesticides and other constituents that may have been released from historic site operations;
- A survey of receptors that could be impacted by contaminants from the facility; and
- An investigation of the site hydrogeology including regional aquifer characteristics, regional geological characteristics, local groundwater flow direction, hydraulic conductivity, groundwater gradient and static groundwater level.

Method in Identifying Extent of Contamination

The method to be used to identify the vertical and horizontal extent of contamination includes advancement of soil borings, installation of monitoring wells and sampling and analysis of soil and groundwater samples.

Soil Borings:

Soil borings will be drilled using hollow-stem auger under the supervision of a Seneca environmental technician. The location of the soil borings will be based on the presumed direction of groundwater flow (topography) and site conditions observed prior to the initiation of the site assessment. Site conditions include topography, presumed groundwater flow direction, depth of groundwater, potential migration pathways and site accessibility. For the proposed approximate locations of the three borings, please refer to the Site Map in Attachment A.

Monitoring Wells:

Monitoring wells will be installed in the three previously described borings. These wells will be installed to determine whether contaminants in groundwater are in exceedance of the statewide standards at that location. The wells will also be utilized to determine groundwater flow direction and gradient and hydraulic conductivity.

Groundwater wells will be installed using hollow-stem auger. The wells will be constructed of two-inch polyvinyl chloride (PVC) casing, and slotted PVC well screens. All monitoring wells installed at the site will be constructed with a PVC casing and screen attached to each other with flush threads sealed by an o-ring. The utilization of PVC material is to provide a non-reactive material to the chemicals for which testing is conducted.

The well annulus will be backfilled with a sand filterpack to a level of one to two feet above the screened section. A one to two foot layer of bentonite will be backfilled around the well casing as an annular sealant above the filterpack material. A watertight steel cover shall be placed over the well casing and cemented in place. The ground surface and the top of the casing are to be surveyed after installation and tied in to a local relative elevation.

To prevent cross-contamination of the encountered water bearing materials, the well will be constructed in the interior space of the hollow stem augers prior to the auger removal from the boring. The well filter-pack material will be added as the augers are removed. Bentonite will be added in the interior of the auger until a sufficient seal is created. After auger removal, the remaining annular space will be filled with bentonite.

The screened interval will be constructed such that it will intersect the surface of the uppermost unconfined aquifer, with approximately five feet of screen extending above and below the aquifer surface. This configuration will allow for sampling of the surface of the uppermost water bearing materials. The length of screen will allow for sampling of the target materials during fluctuations in the water table depth should additional sampling become necessary.

The wells will be developed, if practical, by bailing approximately two well casings of water from the well and allowing the water levels to recover prior to sampling.

The proposed monitoring well configuration will provide groundwater data from locations upgradient and downgradient of the release area. Any migration of the contaminants, if any exists, from the release area will be detected by one or more of the three wells.

Sampling and Analysis:

Samples will be continuously collected with a split-spoon sampler and each one-foot interval will be screened with a photoionization detector (PID) for the presence of hydrocarbons. If significant PID readings are recorded, the soil sample with the highest PID reading will be selected for analysis. If significant PID readings are not recorded, a near surface soil sample, likely from 1 to 2 feet in depth, will be selected The soil samples selected for analysis will be transferred to a laboratory provided sample container. Different Nitrile gloves will be used for each sample collection to prevent cross contamination of samples. Each

container will be labeled appropriately and placed in an iced cooler for shipment to the laboratory.

The groundwater samples will be collected using clean, disposable bailers with a new rope. The rope and bailer shall be discarded after each use to prevent the possibility of cross-contamination of the wells and samples. A representative sample will be removed, placed in an appropriately labeled vial or sample jar, and placed in iced storage for delivery to the laboratory for analysis.

Soil and groundwater samples will be tested for pesticides, EPA Method 8081, and farm chemicals, EPA Method 8270. The samples will also be tested for petroleum compounds utilizing Iowa Methods OA1 for benzene, toluene, ethylbenzene and total xylenes and OA2 for total extractable hydrocarbons.

Survey of Receptors

Identification and location of potable and community water supply wells will be conducted by utilizing the Iowa Geological Survey Bureau well search website and local personnel and authorities. A pedestrian well survey will also be conducted.

Sources of information for possible confined space receptors include site personnel, site historical documents, local authorities and utility locate companies. All accessible confined spaces in relative proximity to the release area will be checked for the presence of hydrocarbon vapors or explosive vapor conditions utilizing a photo-ionization detector.

Surface water bodies will be identified with the use of topographic maps, air photos and visual inspections. It is not anticipated any surface water bodies are within 200 feet of the release area, but all surface water bodies within 200 feet of the site will be visually surveyed for hydrocarbon impact resulting from the release.

Hydrogeology

A review of scientific publications and maps will be conducted to provide a background on the sensitive water supply geologic materials in general use in the region. Information pertaining to the types and thickness of Pleistocene age materials and soils that may be encountered on-site will also be provided.

If bedrock or other material causing auger advancement refusal is encountered, bedrock will not be penetrated and the hole will be filled with one foot of bentonite prior to construction of a monitoring well.

The use of hollow stem augers for the installation of the soil borings limits the potential of cross-contamination due to the fact the auger prevents vertical flow of water when the auger is in the boring. If two or more water bearing units are encountered during installation, the boring will be backfilled with bentonite from the bottom up while backing out the augers until the desired depth of monitoring well installation is reached.

This method will prevent the vertical flow of water from the potentially contaminated water-bearing unit into an underlying unit.

If a water-bearing unit is encountered, the hydraulic conductivity will be determined by conducting a drawdown recovery test using the Bower and Rice Method analytical method.

Static water table elevation will be determined after the wells have stabilized. The vertical distance from the edge of the well casing to the water table will be measured using a Solinst water level meter with an accuracy of 0.01 feet. The measured depth will be subtracted from the relative known casing elevation to determine the water table elevation above sea level. The established water table elevations will be analyzed to determine the flow direction at the site. All down-hole instruments will be decontaminated after each use by washing with de-ionized water.

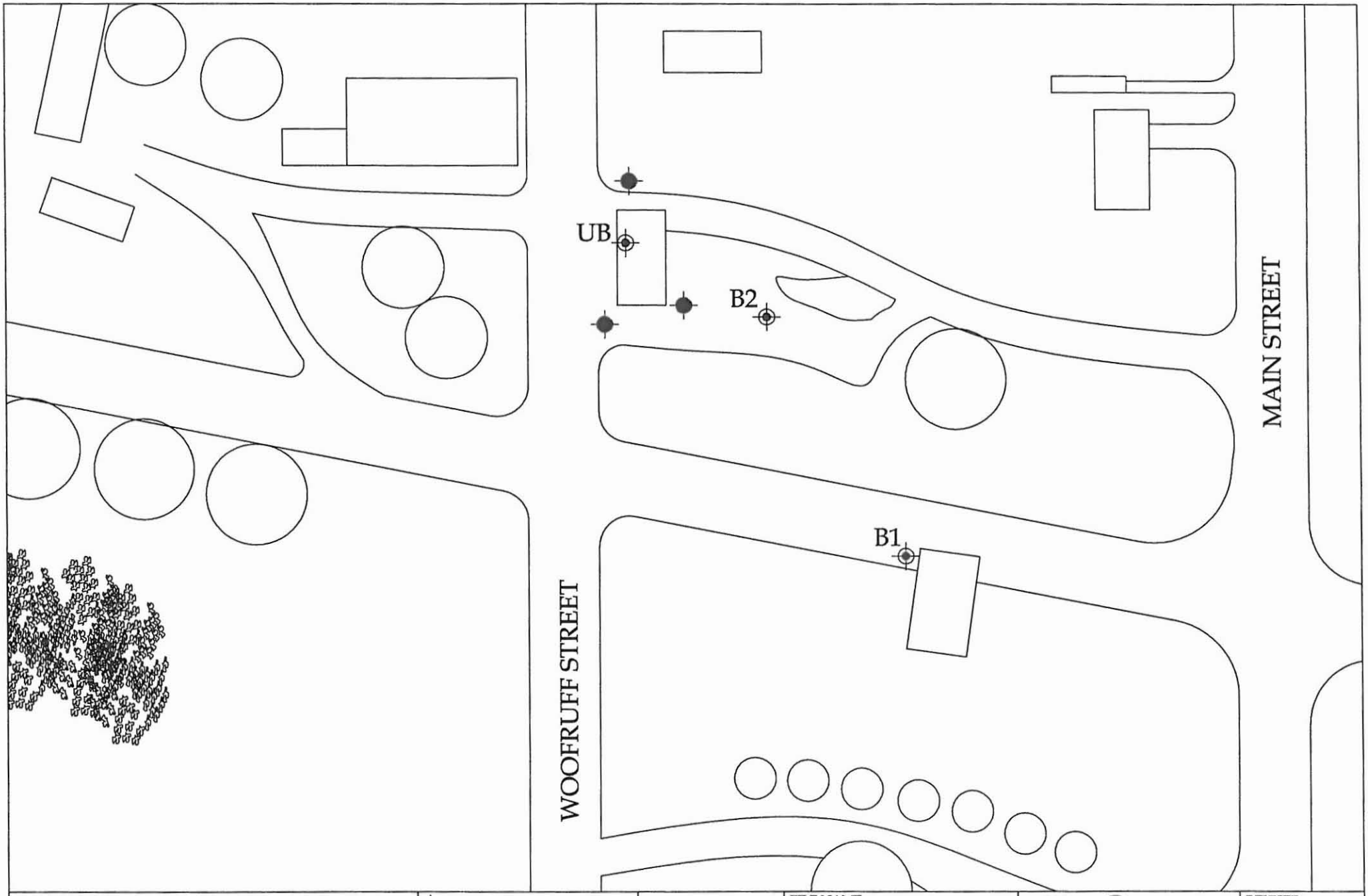
Report

A report including a narrative text describing the methods and results will be prepared and submitted. The report will include all of the pertinent data.

ATTACHMENT A

SITE MAP

PROPOSED BORING / MONITORING WELL LOCATIONS



BORING FROM PREVIOUS PHASE II ASSESSMENT DATED: MARCH 5, 2010

APPROXIMATE LOCATION OF PROPOSED BORING/MONITORING WELL

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W
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S

FILE NAME: AURORA	Seneca Companies Environmental Services		REVISED: 4/19/10
PROJECT NO: 6353159			DATE: 3/3/20
SITE: AURORA ELEVATOR 415 WOODRUFF STREET AURORA, IOWA SITE SKETCH		LUST #: N/A	REVIEWED BY: ND
		SCALE: 1" = 50'	DRAWN BY: RLH