

U.S. NAMEPLATE

(Mt. Vernon, Iowa)

GENERAL DESCRIPTION

The site is 4.83 acres in the NW 1/4 of the NW 1/4 of Section 16, T82N, R5W, Linn County, Iowa about one mile west of Mt. Vernon, Iowa. U.S. Nameplate Company, Inc. is located on the property. Since the mid-50s the company has manufactured nameplates and other engraved and embossed items. Until approximately 1984, the company engaged in metal etching of aluminum, brass, and stainless steel. The site was entered on the Registry in 1984.

SITE CLASSIFICATION

The site is classified "b" in accordance with 455B.427.3. The hazardous wastes disposed of at the site pose a significant threat to the environment.

TYPE AND QUANTITY OF HAZARDOUS WASTE

From the mid-1950s to 1979, a sequence of three septic systems was used to dispose of the plant's wastewater. In March 1979 the department found a continuous discharge from the facility which flowed off-site and into a small creek. The discharge had a pH of 2.2 and a fluoride concentration of 390 mg/L, values consistent with the etching process wastes. In 1984 soil and groundwater samples showed high concentrations of trichloroethene (640 to 95,000 mg/kg) and ethylbenzene (120 to 2500 mg/kg) in the lagoon sludge. All the lagoon wastewater samples showed trichloroethene at 140 mg/L. One groundwater sample had a trichloroethene concentration of 4 mg/L.

SUMMARY OF PUBLIC HEALTH AND ENVIRONMENTAL CONCERNS

- **The primary public health concern is for potential exposure to contaminated drinking water.**

The uppermost aquifer beneath the site (till aquifer) contains sufficient water to supply farms and individual residences in the area. Four residences are located 50 feet north of the facility. These residences are within 300 feet of the monitoring well which shows TCE contamination of 2,000 ug/L. The bedrock aquifer is composed of Silurian age dolostone/limestone deposits, which are encountered at the facility at approximately 55 feet below the surface. The Silurian aquifer is used by the city of Mt. Vernon for its drinking water supply. These wells are located within three miles of the site and serve a population of about 3,650 people.

SUMMARY OF ASSESSMENT, MONITORING OR REMEDIAL ACTIONS

U.S. Nameplate obtained a permit and built the treatment lagoon in response to enforcement actions from the department in 1979. By 1981 because of inadequate operation of the system, the wastewater discharged into the lagoon had a pH below 2. The resulting sludge in the lagoon was a hazardous waste for corrosivity and EP toxicity for chromium.

In 1982 the IDNR determined the wastewater lagoon was leaking. A down gradient monitoring well showed fluoride as high as 137 mg/L. Bentonite was applied as a remedial measure to certain areas of the lagoon dike. In 1983 there were still elevated fluoride levels in one of two monitoring wells. Fluoride was used as an indicator of the leaking lagoon.

A RCRA compliance order was issued to U.S. Nameplate ordering them to immediately stop hazardous waste disposal to the lagoon and to submit a complete closure plan for the lagoon and a groundwater assessment plan. The compliance order was appealed to EPA Headquarters and was decided in favor of the company and the order was dismissed in March 1986.

In December 1984 the company submitted a petition to de-list their lagoon sludge as a hazardous waste. In order to evaluate the petition, the EPA obtained samples from the site in August 1985. The sample results showed high concentrations of trichloroethene (640 to 95,000 mg/kg) and ethylbenzene (120 to 2500 mg/kg) in the lagoon sludge. All the lagoon wastewater samples showed trichloroethene at 140 mg/L. One groundwater sample had a trichloroethene concentration of 4 mg/L. The EPA proposed to deny the petition because of the excessive total concentrations of trichloroethene (TCE) in the sludge. The company responded to the denial by reducing the TCE concentrations in the sludge with mechanical aeration and requested the EPA to re-evaluate the retreated waste.

In 1988 the EPA determined the retreated sludge was not hazardous and granted the de-listing petition for a one-time exclusion of the retreated wastewater treatment sludge. However, the EPA also determined the unlined surface impoundment appeared to have caused groundwater contamination. In addition, the surface impoundment will continue to be defined as a hazardous waste management unit because of residues from the retreated sludge that remain hazardous.

In August and September 1989 the EPA conducted a site investigation. This included the installation and sampling of four ground water monitoring wells. The results showed TCE groundwater contamination as high as 2,000 ug/L.

The EPA issued an Administrative Order to the company in June 1990. This order requires the company to conduct a Removal Action, a RCRA Facility Investigation (RFI), and a Corrective Measures Study (CMS) at the Facility. Some investigation and removal activities have been conducted, but these activities have not been in compliance with the order.

In September 1993, the EPA conducted a level D multimedia inspection of the facility. This included full compliance inspections for the RCRA, CWA/NPDES, EPCRA, and UIC programs. Screening inspections were conducted for the Drinking Water and Wetlands programs.

A groundwater remediation work plan with serious deficiencies was submitted in March 1993. A summary proposal for a more acceptable work plan was submitted in October 1995. The EPA requested the company to convert the summary outline to a more detailed plan and submit it for review and approval. As of October 1998, U.S Nameplate has failed to submit the requested work plan.

EPA is planning on initiating a Monitored Natural Attenuation (MNA) with deed restrictions program for this site. MNA actions planned include the installation of additional monitoring wells and annual groundwater monitoring along with stream sampling. Also being considered is a deed restriction to alert future owners of the environmental conditions to include to a prohibition on installing drinking water wells.

An investigation by EPA has determined that groundwater contamination (TCE) has migrated south from the facility across Highway 30 to the southern edge of the property to an intermittent stream where low levels of TCE have been detected. An Environmental Risk Assessment was performed by EPA and it was determined that no risk existed.

The primary source of groundwater contamination has been removed through a soil removal. Adjacent down gradient monitoring wells (two) at various depths show low TCE contamination. There are indications of biological and physical natural attenuation.

2008: Ongoing monitoring of ground water with collection of ground water samples from surrounding domestic supply wells for analysis for metals (arsenic, chromium), and volatile organic compounds. No contaminants were detected at levels of concern.

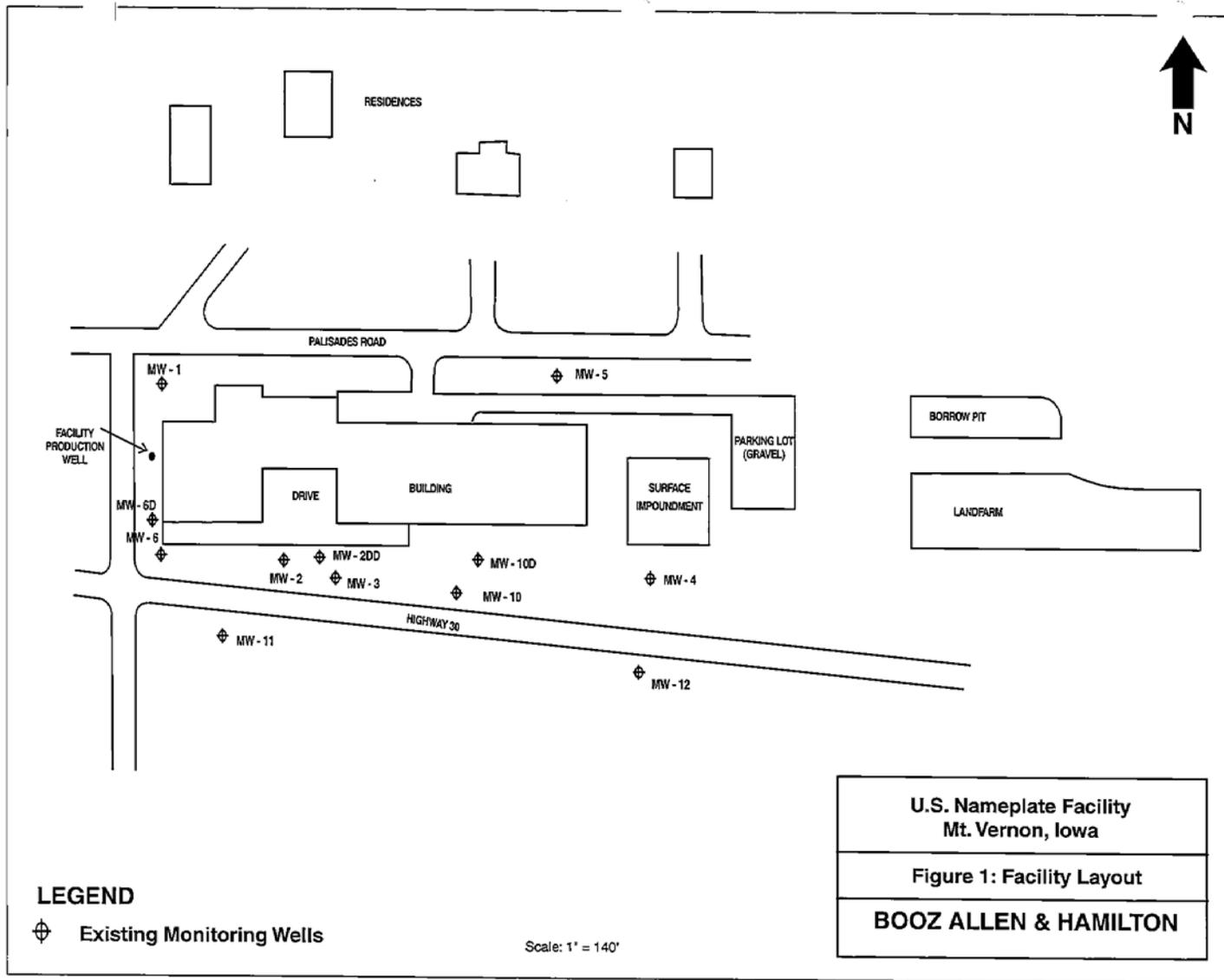
2013: The EPA conducted a site-wide monitoring event in December 2013 to evaluate groundwater conditions both on and off-site at the U.S. Nameplate facility. All facility monitoring and water supply wells were sampled as well as domestic wells in the vicinity of the facility. Surface water samples were collected from the drainage to the south of the facility. The results will be used to evaluate current conditions in groundwater at and around the facility and will be evaluated relative to the proposed realignment of US Highway 30.

2014: A comprehensive groundwater monitoring report summarizing monitoring data conducted in December 2013 was issued in 2014. The intent of the monitoring was to obtain adequate data to evaluate whether historical or current facility practices have resulted in environmental contamination. The EPA is the lead agency and will continue to investigate and evaluate this site under the RCRA program. The IDNR will continue to coordinate with the EPA to insure proper assessment and cleanup if warranted.

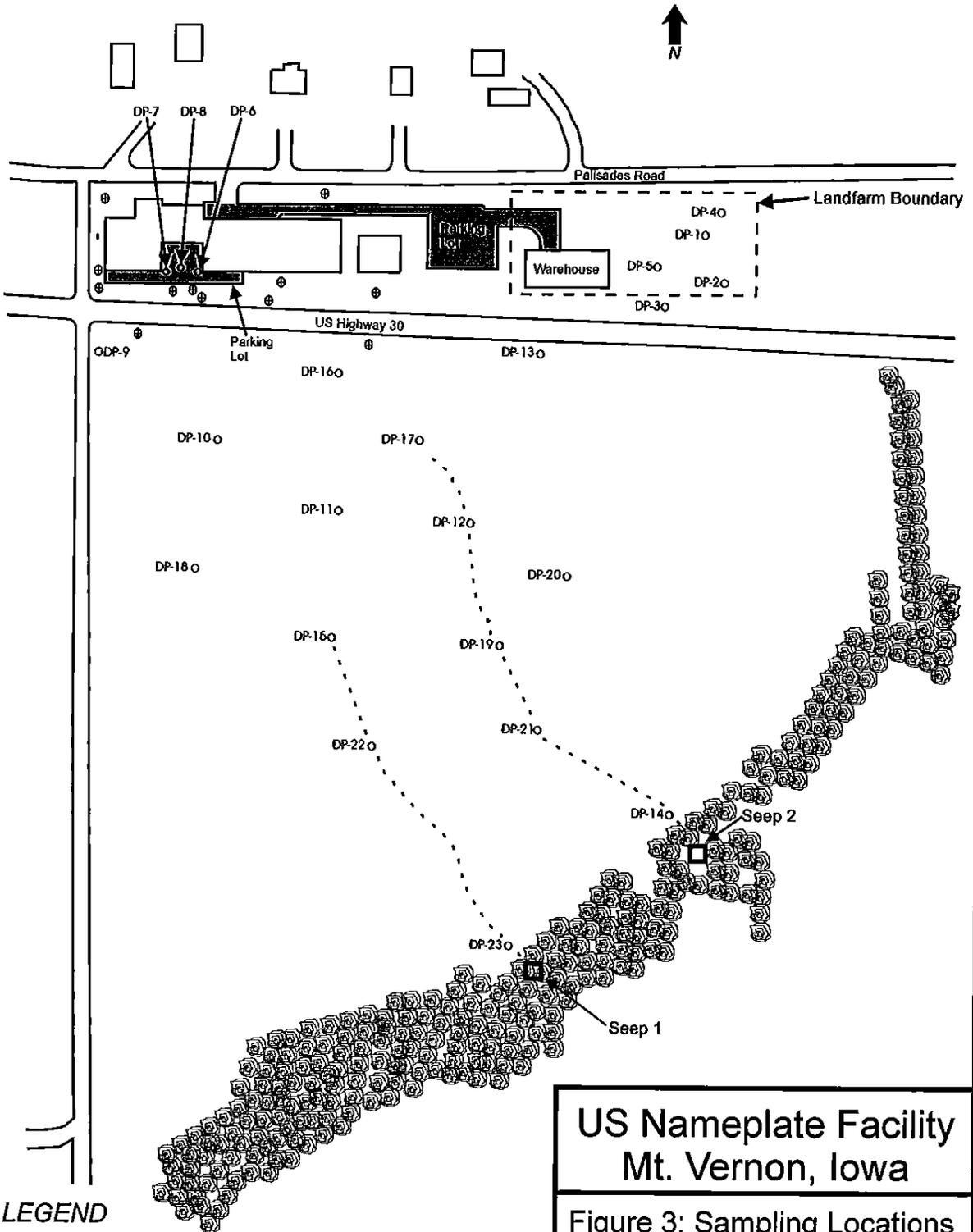
2015: The facility is working with the EPA to resolve two consent orders which include further evaluation of the integrity of the deep bedrock aquifer. In June, 2015 the facility was determined to be in compliance with requirements regarding their public water supply, storm water, and wastewater systems.

2016: EPA and the US Nameplate agreed that

- **An additional round of groundwater sampling will be conducted at all on-site monitoring wells and adjacent residential wells to the north of the site.**
- **The integrity of bedrock monitoring well MW-2DD will be evaluated to determine the source of increasing VOC.**
- **Previous surface water and newly discovered surface seeps locations along unnamed creek will be sampled downgradient of the facility. This work was conducted in the spring of 2016.**
- **A final sampling report has been submitted to the EPA and is currently in review to determine if further investigative work is necessary.**



Not to Scale



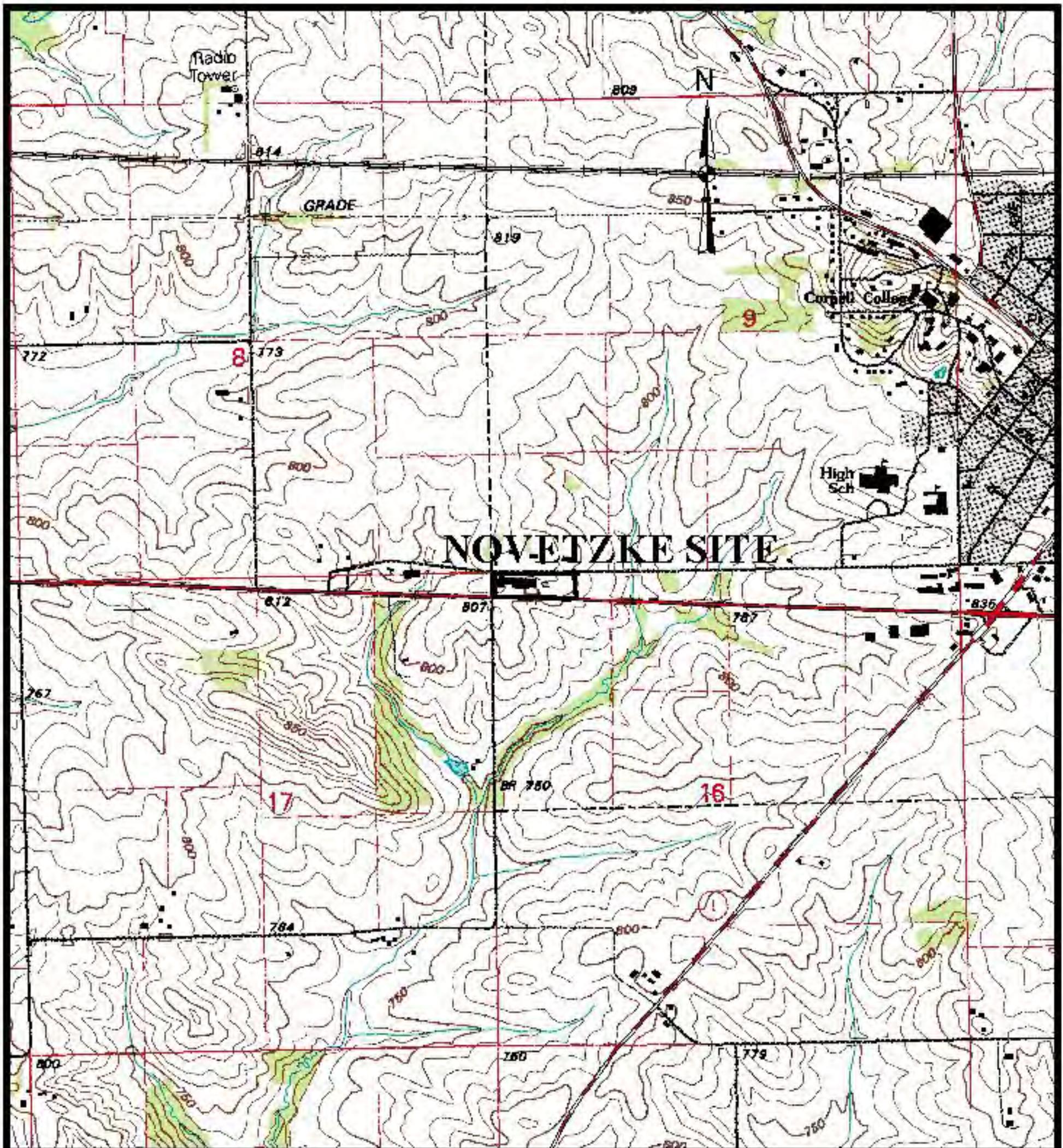
LEGEND

- ⊕ Existing Monitoring Wells
- Sampling Locations

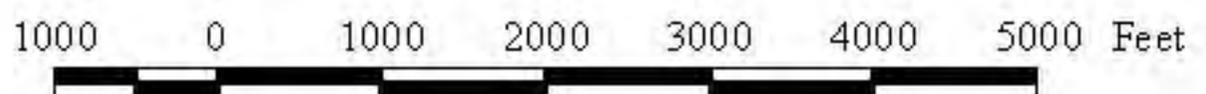
**US Nameplate Facility
Mt. Vernon, Iowa**

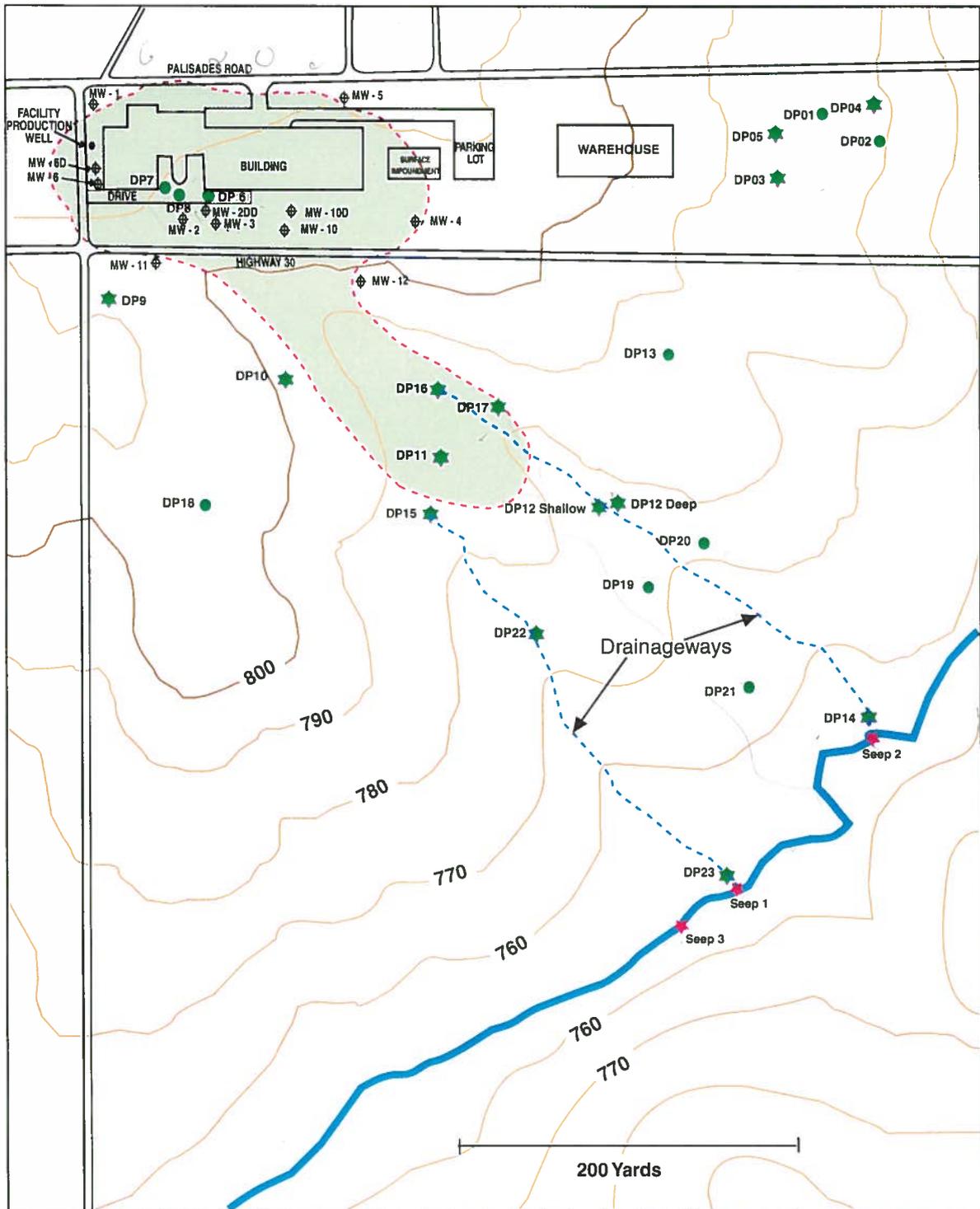
Figure 3: Sampling Locations

Booz | Allen | Hamilton



Contour Interval 10 Feet





LEGEND

- Existing Monitoring Wells
- Direct Push Locations
- Seeps
- Piezometers



U.S. Nameplate Facility
Mt. Vernon, Iowa

Figure 12: Extent of TCE
in Shallow Aquifer

BOOZ | ALLEN | HAMILTON