



Minnesota  
Pollution  
Control  
Agency

# Valentine Clark State Superfund Site – Bridal Veil Open Space Recommended Contamination Response

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**T**his fact sheet, prepared by Minnesota Pollution Control Agency (MPCA), describes the current status of the site investigation and corrective action for the Valentine Clark State Superfund Site, located upstream from Bridal Veil Open Space plan in the city of Minneapolis, Hennepin County, Minnesota. Recommended response actions for Bridal Veil Open Space are being presented in this fact sheet for public review and comment by August 27, 2007.

## Background

The facility onsite, called the Bridal Veil Open Space Operable Unit, once operated as a wood-treatment facility which utilized creosote and pentachlorophenol (PCP).

The site is a 6.6-acre undeveloped parcel of land owned by the city of Minneapolis and located on the border between Hennepin and Ramsey counties. It is bordered by Kasota Avenue to the south, a Burlington Northern Railroad line to the north and industrial properties to the east and west.

Bridal Veil Creek currently flows through the site and into Bridal Veil Pond, which is located within the open space. The pond was created in 1970 by the city of Minneapolis to serve as a storm water detention pond for Bridal Veil Creek. It was constructed within a former natural wetland area, and currently captures runoff from the adjacent properties and from the north (across the railroad tracks) via the former Bridal Veil Creek channel and storm sewer. A portion of the runoff north

of the tracks originates from the Valentine Clark Superfund Site.

## Site Contamination

Soil, sediments and surface water in Bridal Veil Open Space have all been found to be significantly affected by a variety of chemical contaminants including: polynuclear aromatic hydrocarbons (PAHs); pentachlorophenol (PCP); several metals; and polychlorinated dibenzo-p-dioxins/polychlorinated dibenzofurans (PCDD/PCDF). The Valentine Clark Superfund Site is believed to be the source of most of these contaminants. The former Elm Street Ash Dump occupied part of the site and also may have contributed to the contamination.

Chemical contamination in surface soil (0-0.5 feet), accessible soil (0-4 feet) and subsurface soil (below 4 feet) was detected in samples collected throughout Bridal Veil Open Space. These have been found to exceed MPCA's Tier 2 Recreational Soil Reference Values for the above contaminants of concern. If allowed to remain in its present condition, this contamination could result in significant health risks to individuals visiting the Site.

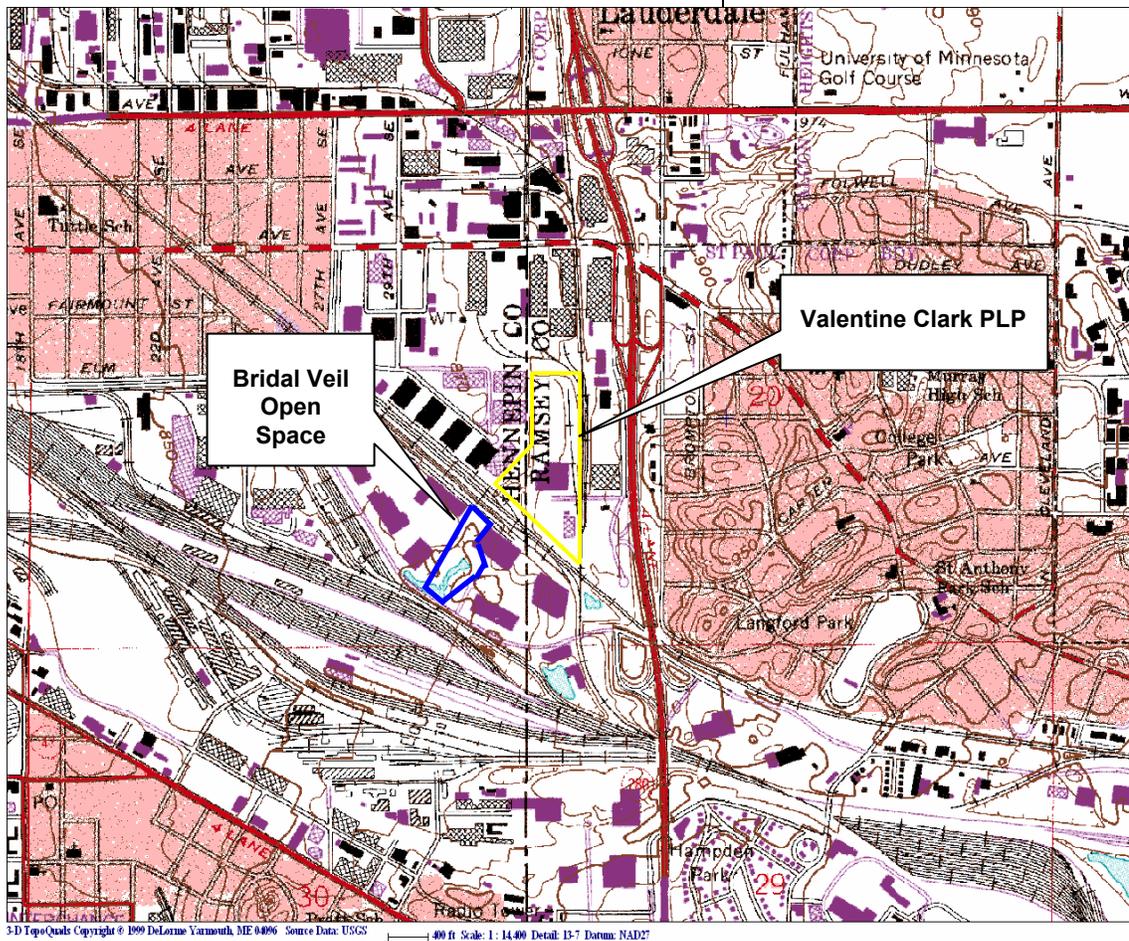
Sediment samples collected at various locations within Bridal Veil Pond exhibited contaminant levels exceeding MPCA's Level II Sediment Quality Targets for PAHs and lead. Sediment samples collected in Bridal Veil Creek from within the Site also exceeded MPCA's standards in a few localized areas.

Surface water samples collected from Bridal Veil Creek, Bridal Veil Pond and the storm sewer entering the Site at the north end of the property exhibit contamination that

exceeds MPCA's Class 2B surface Water Quality Standards for PCP.

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**Figure 1: Bridal Veil Open Space Site Location Map**



- Eliminate unacceptable human exposure risk due to the existing contamination in the open space, and
- Maintain the property as open space available to the public for recreational use and for use by local wildlife.

**Soils**

Because of the significant contamination of surface soil and accessible soil by PAHs, PCDD/PCDF, PCP, copper, lead and thallium, public exposure must be mitigated. Site grading will remove some of the contamination, but the main recommended remedy is the application of a minimum of four feet

of clean soil throughout the site. Four feet of clean soil cover will not only minimize public exposure to the existing contamination on the property, but will also allow the property to be reconstructed into a more aesthetically pleasing natural conservation area. The site will be graded to match existing grades. The addition of the fill will modify the existing site configuration.

A deed restriction on the property will be required with this response to notify any potential future owners of the property of the existence of the buried soil contamination on the site. It will also serve to alert future subsurface site workers (such as utility line installers) of the contamination.

**Sediments**

MPCA proposes to eliminate the open channel of Bridal Veil Creek on the Site. The recommended response action is to pipe the creek from the existing storm sewer outlet, located beneath the railroad tracks at the north end of the property, to Bridal Veil Pond. During pipe installation, areas of significant sediment contamination

**Recommended Response Actions**

The significant environmental contamination identified on this property mandates the MPCA to evaluate and mitigate the potential human health and environmental risks associated with such contamination. The Valentine Clark Site has been in the state's Superfund Program, and response actions have now been taken on the Valentine Clark property to mitigate direct contact issues. However, groundwater impacts still remain and are believed to continue to affect surface water in the Bridal Veil Open Space.

Currently no response actions have been taken for Bridal Veil Open Space. However, the site investigation has been completed and the MPCA has proposed response actions for the site. A Focused Feasibility Study (FFS) was completed to identify various possible response actions. The local community has stated it wishes to maintain this area as a natural asset. Proposed response actions have been developed with two main goals in mind:

in the creek will be removed and disposed of off-site, and the pipe covered with clean fill. Public exposure to the sediments in the Creek will thus be eliminated.

A limited amount of contaminated sediments will also be removed from Bridal Veil Pond and disposed of off site. The pond will then be filled with clean material to eliminate direct exposure to the existing sediments. Organic soils will be placed over the fill to create a wetland where the pond now exists. The newly created wetland will be planted with native wetland plants and aquatic flora. The wetland basin will serve as a natural setting and stormwater detention area for Bridal Veil Creek.

Sediment collection systems will be installed to mitigate the sediment collection in Bridal Veil Pond from the newly constructed pipe. One collection system will be installed on the Valentine Clark site to minimize sediment discharge to the storm sewer off this property. A second collection system will be installed, before the creek discharges to the wetland, to reduce sediment accumulation that could damage the vegetation. A maintenance program will be required to remove sediment from these structures as it accumulates.

### **Surface Water**

The concentration of PCP in surface water exceeds MPCA's Class 2B Water Quality Standards. The PCP is believed to originate from the Valentine Clark site. Groundwater, impacted by PCP, infiltrates the existing storm sewer below the Burlington Northern railroad tracks. The FFS considered ways to eliminate the groundwater infiltration, however, it is not feasible to eliminate it at the present time. Reducing contact with the surface water and passive treatment of the surface water to reduce PCP concentrations are recommended.

Piping the creek from the storm sewer outfall to the wetland will eliminate surface water exposure along the length of Bridal Veil Creek. The creek will enter a flow diverter prior to discharging to the wetland. Flood waters will be allowed to discharge to the wetlands while the base flow (lowest flow volume) of the creek will be directed to a portion of the wetland with a shallow gravel

filled stream. The conditions in this stream will promote natural microbial degradation and allow sunlight to break down and reduce the PCP concentrations. Constructing this streambed within the wetland will maintain flowing water in the open space, as requested by the local community group.

Public contact with surface water will be minimized by dense wetland vegetation and other passive design barriers.

MPCA invites the public to send in their comments on these recommended response actions by August 27, 2007. Please contact the MPCA project manager, Gary Krueger, at 651/296-6139 or [gary.krueger@pca.state.mn.us](mailto:gary.krueger@pca.state.mn.us) with any questions you may have or to provide comments on these recommendations.

### **Glossary of Terms**

**Creosote** - an oily liquid having a burning taste and a penetrating odor, obtained by the distillation of coal and wood tar, used mainly as a preservative for wood and as an antiseptic

**FFS** - Focused Feasibility Study – a study done to determine the feasibility and effectiveness of response actions

**PCP** - pentachlorophenol – A chemical compound containing carbon, chlorine, oxygen, and hydrogen, is a contaminant used in feed stock material and chemical manufacturing.

**PAHs** - polynuclear aromatic hydrocarbons  
pentachlorophenol - A chemical compound that contains more than one benzene ring. They are commonly found in petroleum fuels, coal products, and tar.

**PCDD** - polychlorinated dibenzo-p-dioxins

**PCDF** - polychlorinated dibenzofurans