

Elk Vale Sanitary Sewer Extension



Rapid City is a growing community of nearly 70,000 citizens, located on the eastern slopes of the world famous Black Hills in western South Dakota. As a result of increased urban growth, sanitary sewer upgrades were planned to an existing Elk Vale lift station and sewer extension.

Downstream from the lift station, plans for the sewer extension included the use of a Vortex Flow Insert to provide energy dissipation. “As growth in the area continues, it has the potential for high flow,” stated Cody Scheel of Simon Contractors of South Dakota, “and the Vortex Flow Insert would reduce the corrosive elements in the flow.”

PROFILE

PROJECT

Elk Vale Sanitary Trunk
Sewer Extension
Rapid City, SD

ENGINEER

John Van Beek
Ferber Engineering Company

CONTRACTOR

Cody Scheel
Simon Contractors of South Dakota

INSTALLATION

One Vortex Flow Insert
Type: Gravity Sewer
Flow Range: 3.2 – 24.0 MGD
Peak Flow: 19 MGD
VFI Design: 61.5" Top Form,
12.5' Drop

Upon analysis, a flow range of 3.2 to 24.0 MGD was established, a critical element in designing the appropriate size Vortex Flow Insert. The unit was designed with a 61.5" top form and a 12.5' drop to accommodate a peak flow of 19 MGD.

To date, the Vortex Flow Insert installed has been working according to plan. The downstream lift station has been treating odor with Bioxide and is looking into abandoning the system because of the success of the Vortex installation.