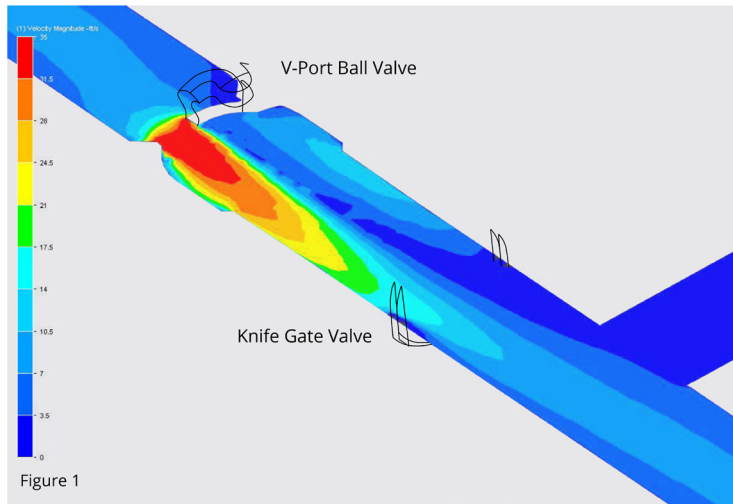


DILUTED FROTH SLURRY APPLICATION

V-PORT BALL VALVE REPLACEMENT

Case Study | **Company B**
Document: MNL20100622A



Inlet Pressure: 155 kPa-g Outlet Pressure: 109 kPa-g
Specific Gravity: 1.0 Flow: 239 m³/hr

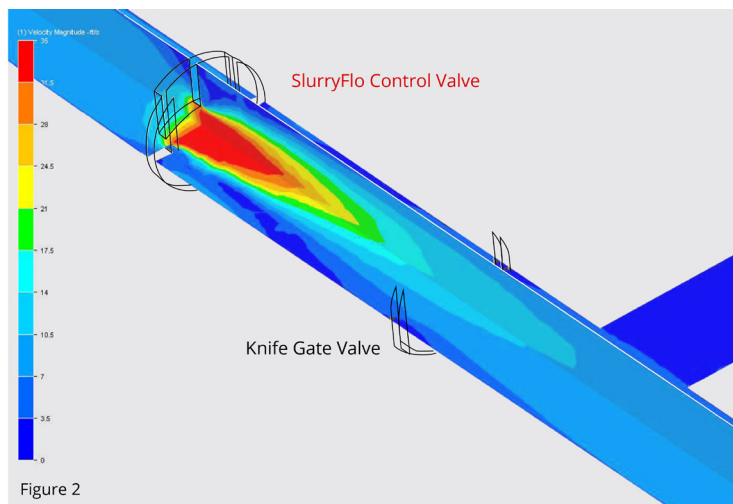
THE PROBLEM

8" V-port Ball Valve

The client had installed several v-port ball valves to modulate the flow of diluted froth slurry. Upon 4-5 months in service, the ball valves were severely eroded and the piping required rotation (or replacement). Isolation knife gate valves were also installed downstream to provide tight shut-off, however they too were damaged by the flow.

To visually explain the situation, SlurryFlo engineers recreated the piping system (as a 3D model), and simulated the exact process flow conditions via CFD. The results show high-velocity flow being projected to one side of the ball valve, downstream piping and knife gate valve (see Fig 1). This was consistent with the wear patterns observed at site.

SERVICE LIFE: LESS THAN 6 MONTHS



Inlet Pressure: 155 kPa-g Outlet Pressure: 109 kPa-g
Specific Gravity: 1.0 Flow: 239 m³/hr

THE SOLUTION

8" SlurryFlo Control Valve

We then introduced a SlurryFlo control valve into the 3D model, with identical piping layout, downstream knife gate valve and flow parameters (see Fig 2). A side-by-side comparison of the two flow models depicts very different scenarios; SlurryFlo's patented trim design acts as variable orifice, centering the abrasive froth slurry within the pipe.

Based on this data, the client ordered and installed a SlurryFlo control valve where a previous v-port ball valve had failed. As predicted by our engineers, the valve trim experienced very little wear after 4 months. The downstream piping was in excellent condition and the knife gate valve maintained its critical shut-off capability.

SERVICE LIFE: GREATER THAN 3 YEARS

Due to SlurryFlo's patented design, only the trim components are exposed to erosive flow. Once they do eventually wear out, the parts can be replaced on site, resetting the service life clock. A quick trim replacement essentially provides the client with a new valve at a fraction of the cost.