

Thompson Creek Mine Water Management

Operational water management at the mine is intended to control and recycle mine water whenever possible. Drainage from the waste rock facilities, open pit, and the tailings storage facility is collected in sumps and ponds and typically recycled through pipelines to be treated and used in the mill (blue lines). Wastewater from the mill or tailings dam underdrains is disposed of in the tailings storage facility (red lines). Excess drainage from the waste rock facilities and mine roads (red lines) is released to Thompson Creek or Squaw Creek (primarily during periods of high precipitation or snowmelt) through permitted and monitored discharge points (numbered red arrows). Currently, no water is discharged to the Salmon River at 005 or to Squaw Creek at 004. At the end of operations, these mine water management systems will be maintained to route the collected water to the water treatment plant at the mill and subsequently release treated water through the established discharge points. Additional information on each discharge point is listed below.

001 – Discharge consists of seepage and runoff from the Buckskin waste rock facility, which overlies Buckskin Creek. The wastewater is collected in a sediment pond at the base of the waste rock facility, with overflow discharged to Buckskin Creek. Buckskin Creek enters Thompson Creek approximately 6.5 miles upstream from the confluence of Thompson Creek and the Salmon River. The average flow rate at 001 (based on data from 1995-2000) is 1.2 cubic feet per second (cfs). However, the creek is often dry during summer months. Due to selenium limits, when flow in Thompson Creek is less than 7 cfs, water is not discharged through 001. Instead, it is collected in the Thompson Creek pipeline and transported to the water treatment plant.

002 – Discharge consists of runoff from upper Pat Hughes Creek and the Pat Hughes waste rock facility, which overlies Pat Hughes Creek. Water flowing from beneath the waste rock facility is collected and transported through the Thompson Creek pipeline to the water treatment plant. Runoff and the diverted flow of upper Pat Hughes Creek is collected in the sediment pond, with overflow discharged to Pat Hughes Creek. Pat Hughes Creek enters Thompson Creek approximately 2.5 miles downstream of 001 and 4.0 miles upstream of the confluence of Thompson Creek and the Salmon River. The average flow rate at 002 (based on data from 1995-2000) is 0.7 cfs. However, the creek is dry during much of the year.

003 – Discharge consists of storm water runoff from the mill and mine roads. The storm water is collected in sediment ponds located in lower Bruno Creek. Overflow is discharge to Bruno Creek just above the confluence with Squaw Creek. The discharge peaks during May – July, with continuous low flow during the remainder of the year. The average flow rate at 003 (based on data from 1995-2000) is 1.1 cfs.

004 – Discharge will consist of seepage from the tailings impoundment that is currently collected and pumped back to the impoundment or to the mill for reuse. During normal milling operations and normal precipitation, there will be no discharge at 004. During temporary shutdowns, at the end of operation, or abnormally wet water years, water accumulates in the pond and must be discharge to maintain stability of the tailings impoundment dam.

005 – Discharge will consists of the same source as describe for 004 (tailings impoundment seepage) as well as wastewater from the open pit and effluent from outfalls 001 and/or 002. Water will be discharged directly to the Salmon River, just below the confluence with Thompson Creek. Discharge through 005 would reduce selenium concerns in Thompson Creek related to discharge from the Buckskin waste rock dump.

