SILVER LAKE STORMWATER TREATMENT SYSTEM OPERATIONAL

By: Bill Alms – Project Engineer

Construction was completed earlier this summer on the Silver Lake Stormwater Treatment System in Salo Park, just north of 39th Avenue in St. Anthony Village. The underground treatment system, located along the bank of the north pond, was constructed in order to help the City achieve its required discharge reduction of phosphorus into Silver Lake. Operational testing began in August 2015 and is planned to continue through the end of the month.

Once the system is put into operation next spring, the City plans to reduce the yearly phosphorous runoff into Silver Lake by 26 pounds. This reduction will be accomplished by drawing water from the Salo Ponds and injecting a chemical that will bind to phosphorous in the water, causing the phosphorous to settle out in large underground tanks. The treated water will then be sent back into Salo Ponds, improving the water quality that flows to Silver Lake.

The ponds receive stormwater runoff from approximately 52 acres of the Apache Major subwatershed. The underground treatment system was designed to increase the total phosphorus removal efficiency from the two Salo Ponds to approximately 90%. Initial laboratory testing results obtained this week indicate that a 91% reduction in Total Phosphorus is being achieved (Figure 1). Sludge from the pollutants, which is collected in the bottom of the treatment system's settling tanks, is discharged to the sanitary sewer (Figure 2).

Figure 1 – Initial Testing Samples: Intake Pond Water on left, Treated Water returned to the pond on the right.

Figure 2 – Dissolved Phosphorus sludge collected from the bottom of the settling tanks.