STATEMENT OF BASIS

SALT LAKE CITY DEPARTMENT OF AIRPORTS

GROUND WATER DISCHARGE PERMIT

Permit No. UGW350005

Introduction

Ground Water Discharge Permit UGW35005 for the Salt Lake City Department of Airports deicing operations storm water detention ponds and land application operation is being renewed for another 5-year term. The detention pond is located one mile north of I-80 and east of the new runway and the land application site is located at the northwest end of the airport property.

Facility Description

Ground Water Discharge Permit UGW35005 for the Salt Lake City Department of Airports deicing operations storm water detention ponds and land application operation was originally issued in 1993. The original permit covered evaporation ponds 1.4 acres in size that were discontinued and closed in 1998. Since 1998, this permit covers the recycling facility and current land application. The detention pond facility is located at 2175 North 4325 West, Salt Lake City, Utah. The facility is comprised of three cells with a holding capacity of 10 million gallons. It is part of the glycol recycling plant. The ponds have a composite liner consisting of a clay sub liner overlain by a 30-mil geomembrane liner and covered by a 36 mil geomembrane liner. The runoff from the airplane deicing areas is captured and diverted into the detention ponds where it is contained and recycled. The runoff may contain high concentrations of the deicing chemical propylene glycol. Propylene glycol is rapidly degraded in all environmental media, and bio gradation is most important transformation process in water and soil. The half-life of propylene glycol in water is expected to be one to four days under aerobic conditions, and three to five days under anaerobic conditions. The half-life in soil is expected to be equal to or less than that for water (ATSDR, 2008). This was confirmed by a land application pilot project that was conducted during the 2001-2002 season in which glycol was degraded to non-detect concentrations in soil at a depth of three feet after one week.

In 2016, the Salt Lake Department of Airports completed construction on the forth end of runway deicing pad, this increased the amount of storm water collected. The land application site is 46-acres northwest of the detention ponds. The site consists of four 400-foot radius pivots for a total of 15 million gallons of land applied water. Applications are conveyed through piping stemming from one of three ponds used for recycling glycol for spray irrigation. The application concentration will remain below 1% glycol and applied at a rate no greater than 1.6 inches as measured by a rainfall gauge. Surface runoff from the application area is not permitted. The land application program will cease if it is determined to produce an unacceptable nuisance condition. The source pond will contain the early stream flows that consist primarily of storm water run-off. As the monitored storm water concentration approaches 1% glycol, the flow will be diverted to the other two ponds. Fluids with concentration greater than 1% will be recycled through the plant. The seasonal discharge is 7-9 million gallons.

Ground Water Quality

Ground water at the site is classified as Class IV Saline Ground Water based on total dissolved solids concentrations in excess of 10,000 mg/l. Depth to ground water varies seasonally from four (4) to 10 feet

below ground surface. Based on the naturally high concentration of total dissolved solids, the shallow water table aquifer is not generally suited for domestic or industrial purposes without extensive treatment. No degradation of ground water is likely to occur, as confirmed by ground water and soil sample analytical results collected during and after each application season.

Monitoring Requirements

Ground water quality at the detention pond site is monitored semi-annually using four ground water monitoring wells (MW-1 through MW-4) and ground water quality at the land application site is monitored after each season using two ground water monitoring wells (PZ-1 and PZ-2). In addition, soil samples are collected at the three land application areas to monitor the impact of land application on subsurface soils. Ground water samples are analyzed for pH, conductivity, total dissolved solids, propylene glycol, and total petroleum hydrocarbons. Soil samples are analyzed for propylene glycol.

References

Agency for Toxic Substances and Disease Registry (ATSDR), Division of Toxicology and Environmental Medicine, 2008. Addendum to the Toxicological Profile for Propylene Glycol, December 18, 2008, Atlanta, GA.

U.S. Department of Health and Human Services, 1997. Toxicological Profile for Propylene Glycol, prepared in accordance with guidelines developed by the Agency for Toxic Substances and Disease Registry and the Environmental Protection Agency, September 1997, Atlanta, GA.