Monitoring Locations

Monitoring locations, frequency, and parameters are summarized in **Error! Reference source not found.** for Doris and Table 1-1 for Madrid.

Table 1-1: Water Monitoring at Doris site

Station	Description	Phase	Monitoring Parameters	Frequency during Care and Maintenance prior to any deposit of Tailings to the TIA	Frequency during Operations and any time after initial deposit of Tailings to the TIA
TL-1	TIA at the Reclaim Pipeline	Operation, Care and Maintenance, Closure, Post Closure (for up to nine (9) years after cessation of mining)	G, N1, N2, MT and TDS, Cl, Free CN, Total CN, T-Ag, T-Ca, T-Cd, T-Cr,T-Hg, T-K, T-Mo, T-Mg, T-Na, T-Se, T-Tl, HC, FC	Three times per week for one (1) week prior to discharge and two times per week for two (2) weeks after discharge commences, then reducing to once per week during remainder of annual discharge period	Monthly during Operations, Closure and Post Closure. Annually during Care and Maintenance.
			Dissolved Oxygen and Redox Potential	Every second month	Annually
			Acute Lethality	Once prior to discharge	Annually during Post-Closure
			B	Daily during periods of discharge	Annually
TL-2	Doris Outflow Creek - upstream (at the flow monitoring station adjacent to the bridge)	Closure, Post Closure (for up to nine (9) years after cessation of mining)	G, N1, N2, MT and TDS, Cl, Free CN, Total CN, T-Ag, T-Ca, T-Cd, T-Cr, T-Hg, T-K, T-Mo, T-Mg, T-Na, T-Se, T-Tl, Oil and Grease	One duplicate sample collected prior to discharge; single samples collected twice per week for two(2) weeks after discharge commences, then reducing to once per week during the remainder of	Annually during Care and Maintenance Annually for 2 years prior to Post-Closure, and during Post-Closure, Increase to three times per year (under ice, freshet, and pre-freeze up), two

				annual discharge period	years prior to breach of the North Dam.
		Operation	D	Daily during periods of discharge from Tail Lake	Daily upon commencement of mining in or beneath the Doris Lake Talik.
TL3	Doris Outflow Creek (~80m downstream of the base of the waterfall)	Care and Maintenance, prior to any deposit of tailings to the TIA	G, N1, N2, MT and TDS, Cl, Free CN, Total CN, T-Ag, T-Ca, T-Cd, T-Cr, T-Hg, T-K, T-Mo, T-Mg, TNa, T-Se, T-Tl,Total Oil and Grease	One duplicate sample collected prior to discharge; single samples collected twice per week for two(2) weeks after discharge commences, then reducing to once per week during the remainder of annual discharge period	Inactive
			D	Daily during periods of discharge from Tail Lake	
TL-4	TIA Discharge End-of-Pipe	Care and Maintenance, prior to any deposit of tailings to the TIA	G, N1, N2, MT, and TDS, Cl, Free CN, Total CN, T-Ag, T-Ca, T-Cd, T-Cr, T-Hg, T-K, T-Mo, T-Mg, TNa, T-Se, T-Tl, T-Radium 226	Weekly during periods of discharge	Inactive
			Acute Lethality	Once approximately midway through annual discharge	
			B	Monthly	
			D	Daily during periods of discharge from Tail Lake	
TL-5	Effluent from DORIS Process	Operations	G, N1, MT, and Free CN, Total CN,		Monthly

	Plant (tailings slurry/ water)		WAD CN, Sulphate, T-Cd, T-Cr, T-Hg, T-Mo, T-Se, and Total Metals by ICP-MS		
			Cyanate and Thiocyanate		Quarterly
TL-6	Tailings Discharged into TIA (Solid Component) taken from a valve in the mill at the discharge end of the mill tailings pumps	Operations	Tonnage of dry tailings solids		Monthly during periods of discharge
			MT and T-Cd, T-Cr, T-Hg, T-Mo, T-Se, Total Inorganic Carbon and Total Metals by ICP-MS (must include Sulphur)		Sampled on a weekly basis with analyses carried out monthly on a composite sample of the TL-6 weekly samples
TL-7	Detoxified tailings sent underground as backfill	Operations	Dry tonnage of detoxified tailings sent underground; WAD CN, Total Inorganic Carbon, Total Metals by ICP-MS (including Sulphur), Moisture content of backfill trucked underground,		Monthly
			~~Cyanate and Thiocyanate~~	-	~~Quarterly~~
~~TL-8~~ - - - - - -	~~Reclaim water pumped from TIA to Mill Process water tank taken from a valve at the discharge end of the reclaim water pump~~	~~Inactive~~ - - - - - -	- - - - - - -	- - - - - - -	~~Inactive~~ - - - - - -

TL-8	Filtrate from TL-7 (Detoxified tailings sent underground as backfill)	Operations	Cyanate and Thiocyanate		Quarterly
TL-9	Detox tailings reactor tank (650-TK-565)	Monitoring and reporting is captured within the Water Management Plan.			Monitoring and reporting is captured within the Water Management Plan.
TL-10	Water Column in deepest portion of Tail Lake and at a location away from the TIA Reclaim water floating pump house, sampled at surface, mid-depth and near bottom.	Inactive			Inactive
TL-11	Seepage from DORIS underground backfilled stopes	Operations	Visual inspection for seepage. If seepage present parameters to be monitored include N1 and pH, EC, Trace metals by ICP-MS, Alkalinity, Acidity, Sulphate, Total and WAD CN		Survey Twice annually
TL-12	DORIS Mine Water Discharge Point	Operations during continuous pumping	Chloride, TDS and nitrate:		Weekly
			Total Ammonia, Nitrate, Nitrite, pH, EC, ICPMS		Monthly

			Metals, alkalinity, sulphate, TSS, major ions and Total and WAD Cyanide		
			D		daily during periods of discharge
ST-1	DORIS Sedimentation Pond	Construction, Operation, Care and Maintenance, Closure	G, N1, MT and Total Sulphate, Total CN, Total Oil and Grease, Alkalinity, Chloride, and Total Metals by ICP-MS	Annually	Annually
ST-2	DORIS Pollution Control Pond	Construction, Operation, Care and Maintenance, Closure	G, N1, MT and Total Sulphate, Total CN, Total Oil and Grease, Alkalinity, Chloride, and Total Metals by ICP-MS	Annually	Annually
ST-3	Discharge from Non-hazardous Landfill pollution control sump	Construction, Care and Maintenance, Operation, Closure	G, MT and Total Ammonia-N, Total Sulphate, Total and Free CN, Total Oil and Grease,	Once before any discharge, daily when discharging onto the tundra	Annually. Once prior to every discharge onto the tundra
			D	Daily during periods of discharge	Daily during periods of discharge
ST-4	Discharge from Landfarm sump	Construction, Operation, Care and	G, HC, total Ammonium, total Lead	Once before any discharge, daily when discharging onto the tundra	Annually. Once prior to every discharge onto the tundra.
		Maintenance, Closure	D	Daily during periods of discharge	Daily during periods of discharge
ST-5	Discharge from DORIS Plant Site Fuel	Construction, Operation, Care and	G, HC, Total Pb	Once before any discharge, daily when discharging onto	Annually. Once prior to every discharge onto the tundra

	Storage and Containment Area Sump	Maintenance, Closure		the tundra	
			D	Daily during periods of discharge	Daily during periods of discharge
ST-6a And ST-6b ST-6c	Discharge from the Roberts Bay Fuel Storage and Containment Area Sumps	Construction, Operation, Care and Maintenance, Closure	G, HC, Total Pb	Once before any discharge, daily when discharging onto the tundra	Annually. Once prior to every discharge onto the tundra
			D	Daily during periods of discharge	Daily during periods of discharge
ST-7	Freshwater pumped from Doris Lake	Construction, Operation, Care and Maintenance, and Closure	G, N1, N2, MT and Free CN, Total CN, T-Ag, T-Cd, T-Cr, T-Hg, T-Mo, T-Se, T-Tl, and Total Oil and Grease, Cl		Monthly during periods pumping
			D		Monthly during periods of pumping
			Cl-a		Annually
ST-7a	Freshwater pumped from the Windy Lake freshwater intake	Construction, Operation, Care and Maintenance. Closure	G, N1, N2, MT and, T-Ag, T-Cd, T-Cr, T-Hg, T-Mo, T-Se, T-Tl, Tca, and Total Oil and Grease		Monthly during periods of pumping
			B		
			D		
ST-8	Discharge from DORIS Wastewater Treatment Plant bio-membrane	Construction, Operation, Care and Maintenance, Closure	G, B, and Total Oil and Grease		Monthly when discharge to the Tundra, Annually when discharge to the TIA
			Location of discharge		Monthly during periods of Discharge
			D		

					Daily during periods of discharge
ST-9	Runoff from DORIS Wastewater Treatment Plant discharge - downstream of wastewater treatment plant discharge point and just prior to flow entering Doris Lake	Construction, Operation, Care and Maintenance, Closure	G, B, and Total Oil and Grease	Monthly	Monthly when discharged to the tundra
ST-10	DORIS Site Runoff from Sediment Controls	Construction, Operations, Closure	TSS or Turbidity (following development and approval of a site-specific TSS-Turbidity)	Daily during periods of discharge	Daily during periods of discharge
ST-11	Reagent and Cyanide DORIS Storage Facility Sumps. Closure	Construction, Operation, Care and Maintenance,	G, HC , MT, Total Ammonia, Total and Free Cyanide, and D	Annually	Annually
ST-12 (NEW)	Doris Lake	Operation, Closure	Water Level		Monthly
			Ice Thickness		Annually in April
ST-13 (New)	DORIS Pollution Control Pond associated to Pad U	Construction, Operation, Care and Maintenance, Closure	G, N1, MT and Total Sulphate, Total CN, Total Oil and Grease, Alkalinity, Chloride, and Total Metals by ICP-MS	Annually	Annually
Monitoring Strip #1	Shoreline (location provided in S4 DWG T-14 dated	Construction, Operations, Closure	Erosion via bathymetric survey of the underwater section of the monitoring	Annually	Annually

	March 2007)		strip down to the original Tailings Impoundment Area water level of 28.3 m		
Monitoring Strip #2	Shoreline (location provided in S4 DWG T-14 dated March 2007)	Construction, Operations, Closure	Erosion via bathymetric survey of the underwater section of the monitoring strip down to the original Tailings Impoundment Area water level of 28.3 m	Annually	Annually
Monitoring Strip #3	Shoreline	Inactive	Inactive	Inactive	Inactive
Monitoring Strip #4	Shoreline	Inactive	Inactive	Inactive	Inactive
Monitoring Strip #5	Shoreline (location provided in S4 DWG T-14 dated March 2007)	Construction, Operations, Closure	Erosion via bathymetric survey of the underwater section of the monitoring strip down to the original Tailings Impoundment Area water level of 28.3 m	Annually	Annually
Monitoring Strip #6	Shoreline (location provided in S4 DWG T-14 dated March 2007)	Construction, Operations, Closure	Erosion via bathymetric survey of the underwater section of the monitoring strip down to the original Tailings Impoundment Area water level of 28.3 m	Annually	Annually

Table 1-1: Water Monitoring at Madrid sites

Station	Description	Phase
MMS-1	Madrid North Contact Water Pond	construction, operations, care and maintenance
MMS-2	Madrid South Primary Contact Water Pond	construction, operations, care and maintenance, closure
MMS-3	Madrid South Secondary Contact Water Pond	construction, operations, care and maintenance, closure
MMS-4a	Freshwater Intake at Windy Lake North	construction, operations, care and maintenance, closure
MMS-4b	Freshwater Intake at Windy Lake South (Windy Camp)	construction, operations, care and maintenance, closure
MMS-5	Discharge from Madrid South Fuel Storage facility	construction, operations, care and maintenance, closure
MMS-6	Bring Mixing Facility	Operations during continuous pumping
MMS-7	Effluent from Madrid North Concentrator to TIA	Operations
MMS-8	Discharge from Madrid North Fuel Storage facility	construction, operations, care and maintenance, closure
MMS-9	Site runoff from sediment controls during construction	construction
MMS-10	Mine Water Discharge Point	Operations during continuous pumping

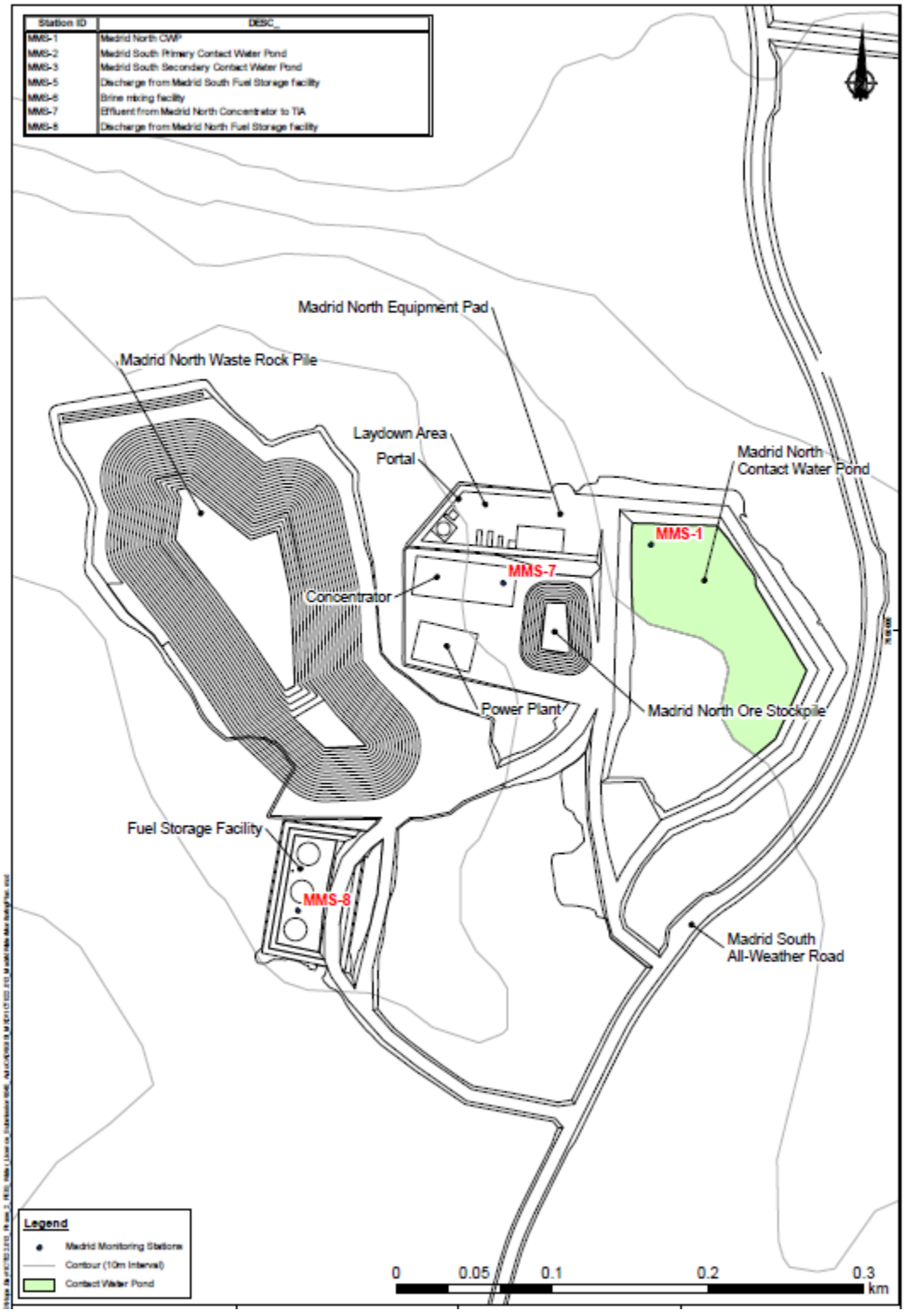

Figure 1: Madrid North Monitoring Locations

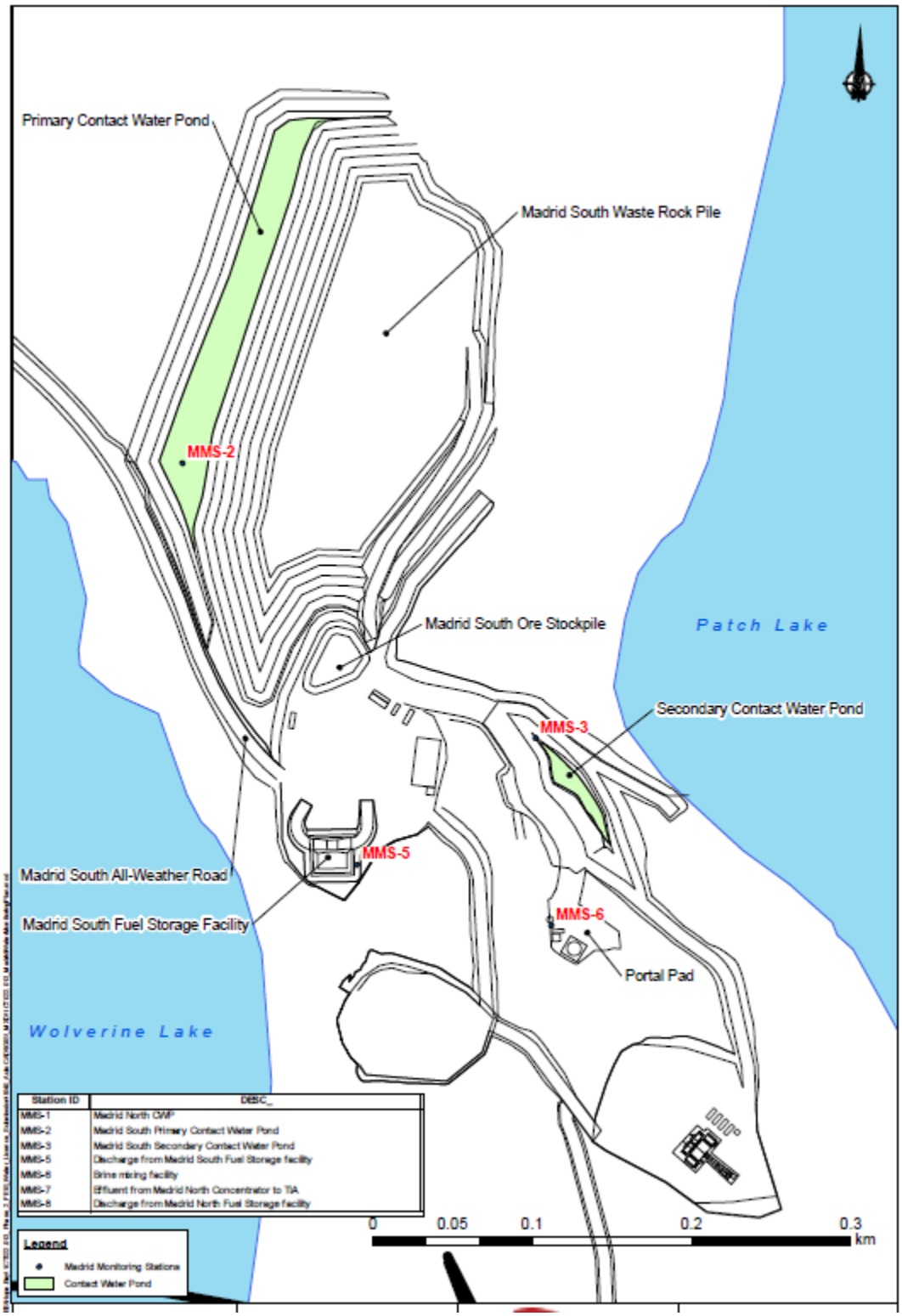

Figure 2: Madrid South Monitoring Locations