

TSF Emergency Levels

WARNING LEVEL	EMERGENCY CONDITION	REQUIRED ACTIONS
1	Water Levels in the TSF, sediment pond and/or seepage collection pond rising but still under normal operating level.	<ul style="list-style-type: none"> Monitor water levels daily.
	Minor surface erosion on embankment crest/slopes and/or pond slopes.	<ul style="list-style-type: none"> Repair as necessary. Determine the cause of the erosion.
	Unusually high piezometer reading(s)	<ul style="list-style-type: none"> Re-check the reading again. Continue monitoring daily until readings return to normal. Otherwise see Level 3 Response.
2	Water Levels in the TSF, sediment pond and/or seepage collection pond near normal operating level and rising steadily.	<ul style="list-style-type: none"> Monitor water levels daily (or more). Open additional manhole inlets to facilitate drainage of the sediment ponds. Prepare to increase pumping capacity of the reclaim and/or seepage recycle pumps. Ensure portable pumps are available.
	Major erosion of on downstream slope or crest. Sediment build-up at the toe of the embankment from erosion.	<ul style="list-style-type: none"> Contact Design Engineer. Prepare to carry out corrective repairs.
	Soft toe condition or seepage at the downstream slope or toe.	<ul style="list-style-type: none"> Determine if water source is natural or from the tailings pond. Contact the Design Engineer. Commission a field investigation program. Prepare to carry out corrective repairs.
	Cracks developing at the embankment crest or slope	<ul style="list-style-type: none"> Conduct embankment walkovers daily until the problem is understood and addressed. Contact the Design Engineer. Monitor crack development (e.g. crack size, extent, etc.). Prepare to carry out corrective repairs
	High turbidity in seepage collection flow	<ul style="list-style-type: none"> Conduct embankment walkovers daily until the problem is understood and addressed. Take water samples for suspended solids determination twice a week. Contact the Design Engineer. Prepare to carry out corrective repairs.
	Failure of Reclaim and/or Seepage Recycle Pumps	<ul style="list-style-type: none"> Monitor water levels daily. Ensure portable pumps are available. Repair or replace failed pumps ASAP.
	Tailings Pipeline blocked (and/or T2 Dropbox filled with tailings)	<ul style="list-style-type: none"> Stop tailings discharge. Flush pipeline with water to clear obstruction. Inspect the pipeline for damages or leaks. Clean out the dropbox. Determine the cause or reason for blockage.
	Slope inclinometer and/or surface movement monument readings indicate significant deviation	<ul style="list-style-type: none"> Re-check readings/measurements. Contact the Design Engineer. Check for embankment deformations following Level 3 recommendations.
	Any other situations which may lead to a potential emergency	<ul style="list-style-type: none"> Discuss with the Tailings Co-ordinator. Seek advice from the Design Engineer. Check for Level 3 conditions.
3	Failure or suspected imminent failure of a dam (any reason)	<ul style="list-style-type: none"> Initiate chain of communications and ensure safety of people. Stop tailings discharge into the TSF. Monitor water levels every 3 hours if safe to do so. Lower pond by any practical means approved by the Design Engineer. Mobilize pumps and earthmoving equipment. Contact the Design Engineer. Construct confinement berms downstream of the embankment and ponds where feasible. Contact the Ministry of Energy and Mines.
	Water Levels in the TSF, sediment pond and/or seepage collection pond near maximum operating level.	<ul style="list-style-type: none"> Follow procedures in shaded box above. Conduct a detailed inspection of the TSF and ponds after pond levels have decreased.
	Unusually high piezometer reading(s) maintained over a few days.	<ul style="list-style-type: none"> Re-check readings. Continue daily readings. Contact the Design Engineer.
	Slumping, sliding, or bulging of a dam slope or adjacent ground	<ul style="list-style-type: none"> Follow procedures in shaded box above. Do not attempt construction of a stabilizing berm until the Design Engineer is on site
	Boils observed d/s of dam	<ul style="list-style-type: none"> Follow procedures in shaded box above. Place granular filter buttress over the boils, if approved by the Design Engineer.
	Water vortex within the pool	<ul style="list-style-type: none"> Follow procedures in shaded box above. Check d/s of the dam area for increased and/or turbid seepage discharge. Place granular filter buttress against any such areas, if approved by the Design Engineer.
	Large earthquake and significant loss of freeboard	<ul style="list-style-type: none"> Follow procedures in shaded box above. Carry out detailed post-earthquake inspection of the dam with the assistance of the Design Engineer. Restore dam as directed by the Design Engineer.
	Rupture of the tailings pipeline	<ul style="list-style-type: none"> Stop pumping tailings. Check for erosion on the tailings embankment. Build confinement berms as necessary to contain the tailings. Clean up tailings. Determine cause of rupture.