

RISK MATRIX (Based on DWS 2015 publication: Section 21 c and I water use Risk Assessment Protocol)

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Risk to be scored for construction and operational phases of the project. MUST BE COMPLETED BY SACNASP PROFESSIONAL MEMBER REGISTERED IN AN APPROPRIATE FIELD OF EXPERTISE.

Flow regime	Physico and Chem	Habitat (geomorph + Veg)	Biota	Severity	Spatial scale	Duration	Consequence	Frequency of activity	Frequency of impact	Legal Issues	Detection	Likelihood	Significance	Risk Rating	Confidence level	Borderline LOW MODERATE Rating Classes
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No.	Phases	Activity	Aspect	Impact	Severity				Severity	Spatial scale	Duration	Consequence	Frequency of activity	Frequency of impact	Legal Issues	Detection	Likelihood	Significance	Risk Rating	Confidence level	Borderline LOW MODERATE Rating Classes
					Flow Regime	Physico & Chemical (Water Quality)	Habitat (Geomorph + Vegetation)	Biota													
Proposed oxidation ponds and outfall system	Construction phase	Construction activities including clearance of vegetation and changes to hydrology due to development within the regulated area of a watercourse.	Drainage patterns change due to establishment of infrastructure	Impeding and diverting the flow of water. Siltation of water course.	1	1	2	2	1,5	1	2	4,5	1	2	5	2	10	45	Low	95	N/A
			Clearing of vegetation in the regulated area of a watercourse and exposing soils	Vegetation will be cleared within the regulated area of a watercourse which will result in erosion, and some loss of wetland functions.	1	1	2	2	1,5	1	2	4,5	1	2	5	1	9	40,5	Low	95	N/A
			Soil disturbance due to excavation activities	Siltation of water course and bank erosion of the river.	1	2	1	1	1,25	1	2	4,25	4	2	5	2	13	55,25	Low	95	N/A
			Changes in hydrology due to trenching through a river and wetland	Impeding and diverting the flow of water. Siltation of water course.	1	2	1	1	1,25	1	2	4,25	4	2	5	2	13	55,25	Low	95	N/A
	Handling waste, general- and hazardous material on the site during construction.	Storage of material, waste, spoil and construction equipment on or in stormwater drainage or in watercourses areas	Storage of material, waste, spoil and construction equipment on or in stormwater drainage or in watercourses areas	1	1	2	2	1,5	1	2	4,5	1	2	5	2	10	45	Low	95	N/A	
		Accidental spilling of waste & vehicles leaks oil, litter and waste enter watercourse	Changes in surface water quality and ground water quality impacts of impaired water quality, introduction of pollutants and increased turbidity may lead to the loss of sensitive aquatic taxa	1	2	2	2	1,75	1	2	4,75	2	2	5	3	12	57	Low	95	N/A	
	Construction, erosion control & storm water management	Development of erosion on the footprint and immediate surrounds	Siltation & sedimentation	1	1	1	1	1	1	1	2	4	1	2	5	3	11	11	Low	95	N/A
		Siltation of downstream watercourses		2	2	2	2	1,5	1	2	4,5	1	2	5	3	11	16,5	Low	95	N/A	
	Operation and construction	Construction activities and the spread of Alien Invasive Species .	Disturbance of soil creates opportunity for invasion	Disturbance of soil that creates opportunity for invasion which may lead to significant alien invasive species establishment and spread.	2	2	1	1	1,5	1	1	3,5	1	1	5	3	10	35	Low	95	N/A
			Application of herbicides	Run-off of harmful chemicals may enter downstream watercourses	1	2	1	2	1,5	1	2	4,5	1	1	5	2	9	40,5	Low	95	N/A
	Operation phase	General operation of oxidation ponds and pipeline	Accidental seepage and spillage of sewage and effluent	Changes in surface water quality and ground water quality. Impacts of impaired water quality, introduction of pollutants	2	2	1	1	1,5	1	1	3,5	1	1	5	3	10	35	Low	95	N/A
			Drainage patterns change due to operation	Increasing water input and siltation into the river.	2	2	1	1	1,5	1	1	3,5	1	1	5	3	10	35	Low	95	N/A
Accidental spilling of waste & vehicles leak oil, litter and waste enter watercourse			Changes in surface water quality and ground water quality. Impacts of impaired water quality, introduction of pollutants and increased turbidity may lead to the loss of sensitive aquatic taxa	1	2	2	2	1,75	1	2	4,75	2	2	5	3	12	57	Low	95	N/A	