

PROJECT: Nooitgedacht TSF and Proposed Slurry Pipelines

RISK ASSESSMENT MATRIX for Section 21 (c) and (i) Water Use activities - Version 2.1.1

Name of Assessor: Namitha Singh
SACNASP Registration Number: 157 927
Date of assessment: 01-Jun-25

Name of Assessor:	Namitha Singh	Signature:	
SAGHAR Registration Number:	157-007		

Risk to be scored for all relevant phases of the project (**factoring in specified control measures**). MUST BE COMPLETED BY SACNASP PROFESSIONAL MEMBER REGISTERED IN AN APPROPRIATE FIELD OF EXPERTISE

Phase	Activity	Impact	Potentially affected watercourses			Intensity of Impact on Resource Quality					Overall Intensity (max = 10)	Spatial scale (max = 5)	Duration (max = 5)		Severity (max = 20)	Importance rating (max = 5)		Consequence (max = 100)		Likelihood (Probability) of impact		Significance (max = 100)	Risk Rating	Confidence level			
			Name/s	PES	Overall Watercourse Importance	Abiotic Habitat (Drivers)			Biota (Responses)																		
						Hydrology	Water Quality	Geomorph	Vegetation	Fauna																	
CONSTRUCTION	Clearing of vegetation and site preparation to facilitate the development of the TSF	Loss of wetland area	HGM 1 - 4	D	Moderate		5	5	5	5	5		10	4	5		19	3		57		100%		57	M	Medium	
		Altering surface flow patterns		D	Moderate		3	2	1	2	2		6	2	4		12	3		36		100%		36	M	Medium	
		Erosion of surrounding landscape and subsequently the watercourses		D	Moderate		0	2	2	2	1		4	2	4		10	3		30		80%		24	L	Medium	
		Sedimentation and siltation of watercourses		D	Moderate		1	2	2	2	3		6	2	4		12	3		36		80%		28.8	L	Medium	
		Proliferation of invasive alien plants		D	Moderate		1	1	1	2	2		4	2	4		10	3		30		80%		24	L	Medium	
				D	Moderate																						
	Excavating and reshaping for the Banks of the TSF	Altering surface and subsurface flow patterns		D	Moderate		3	1	1	1	1	1		6	2	2		10	3		30		100%		30	M	Medium
		Erosion of surrounding landscape and subsequently the watercourses		D	Moderate		1	2	2	2	2	2		4	2	2		8	3		24		80%		19.2	L	Medium
		Sedimentation and siltation of watercourses		D	Moderate		2	2	2	2	2	2		4	2	2		8	3		24		100%		24	L	Medium
				D	Moderate																						
	Soil stockpiling	Altering surface and subsurface flow patterns		D	Moderate		3	1	1	1	1	1		6	2	2		10	3		30		60%		18	L	Medium
		Erosion of surrounding landscape and subsequently the watercourses		D	Moderate		1	2	2	2	2	2		4	2	2		8	3		24		60%		14.4	L	Medium
		Sedimentation and siltation of watercourses		D	Moderate		2	2	2	2	2	2		4	2	2		8	3		24		60%		14.4	L	Medium
	Storage of chemicals, mixes and fuel	Impaired water quality from spills and leaks		D	Moderate		1	2	0	2	2	2		4	3	2		9	3		27		40%		10.8	L	Medium
	Operation of heavy machinery and equipment within and in proximity to wetlands	Altering surface flow patterns through hardened surfaces		D	Moderate		3	1	1	1	1	1		6	2	2		10	3		30		80%		24	L	Medium
		Erosion of surrounding landscape and subsequently the watercourses		D	Moderate		1	2	2	2	2	2		4	2	2		8	3		24		80%		19.2	L	Medium
		Sedimentation and siltation of watercourses		D	Moderate		2	2	2	2	2	2		4	2	2		8	3		24		60%		14.4	L	Medium
		Wetland vegetation disturbance and proliferation of invasive alien plants		D	Moderate		1	1	1	2	2	2		4	2	2		8	3		24		60%		14.4	L	Medium
		Impaired water quality from spills and leaks		D	Moderate		1	2	0	2	2	2		4	3	2		9	3		27		40%		10.8	L	Medium
				D	Moderate																						
	Installation and assembly of subsurface drainage systems	Altering surface and subsurface flow patterns		D	Moderate		3	2	1	1	1	1		6	3	2		11	3		33		100%		33	M	Medium
	Backfilling of residual excavated areas	Altering surface and subsurface flow patterns		D	Moderate		3	1	1	1	1	1		6	2	2		10	3		30		80%		24	L	Medium
		Erosion of surrounding landscape and subsequently the watercourses		D	Moderate		1	2	2	2	2	2		4	2	2		8	3		24		80%		19.2	L	Medium
		Sedimentation and siltation of watercourses		D	Moderate		2	2	2	2	2	2		4	2	2		8	3		24		60%		14.4	L	Medium
	Dewatering excavated areas in relation to water accumulation from rainfall and stormwater management and releasing water into the environment	Temporary alteration of hydrology within watercourse		D	Moderate		2	2	1	1		2		4	2	2		8	3		24		80%		19.2	L	Medium
		Erosion of watercourses from concentrated flows		D	Moderate		1	1	2	2	1		4	2	2		8	3		24		80%		19.2	L	Medium	
		Sedimentation and siltation of watercourses		D	Moderate		1	2	2	1	2		4	2	2		8	3		24		80%		19.2	L	Medium	
	Domestic and industrial waste	Wetland degradation		D	Moderate		2	2	2	2	2	2		4	2	2		8	3		24		40%		9.6	L	Medium
Impaired water quality		D	Moderate		1	2	1	2	2		4	3	2		9	3		27		40%		10.8	L	Medium			
Ablution facilities	Impaired water quality from spills and leaks	D	Moderate		2	2	1	2	2	2		4	3	2		9	3		27		60%		16.2	L	Medium		
OPERATIONAL	Operation of TSF relating to consistent stockpiling of tailings material	Altering surface and subsurface flow patterns	HGM 1 - 4	D	Moderate		3	2	1	2	2		6	3	5		14	3		42		100%		42	M	Medium	
		Sedimentation and siltation of watercourses		D	Moderate		1	2	2	1	2		4	3	5		12	3		36		80%		28.8	L	Medium	
		Impaired water quality from residual tailings materials entering the system		D	Moderate		1	2	1	2	2		4	3	5		12	3		36		100%		36	M	Medium	
	Operation of drainage systems	Altering surface and subsurface flow patterns		D	Moderate		3	1	2	1	1		6	3	5		14	3		42		100%		42	M	Medium	
		Sedimentation and siltation of watercourses		D	Moderate		1	2	2	1	2		4	3	5		12	3		36		80%		28.8	L	Medium	
		Impaired water quality from residual tailings materials entering the system		D	Moderate		1	2	1	2	2		4	3	5		12	3		36		100%		36	M	Medium	

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Phase	Activity	Impact	Potentially affected watercourses			Intensity of Impact on Resource Quality					Overall Intensity (max = 10)	Spatial scale (max = 5)	Duration (max = 5)	Severity (max = 20)	Importance rating (max = 5)	Consequence (max = 100)	Likelihood (Probability) of impact		Significance (max = 100)	Risk Rating	Confidence level
			Name/s	PES	Overall Watercourse Importance	Abiotic Habitat (Drivers)			Biota (Responses)												
						Hydrology	Water Quality	Geomorph	Vegetation	Fauna											
CONSTRUCTION	Clearing of vegetation to facilitate the development of the pipeline and LP water supply system	Loss of wetland area	HGM 3 - 9	D	Very high	5	5	5	5	5	10	2	2	14	5	70	80%	56	M	Medium	
		Altering surface flow patterns		D	Very high	3	2	1	2	2	6	2	2	10	5	50	80%	40	M	Medium	
		Erosion of surrounding landscape and subsequently the watercourses		D	Very high	0	2	2	2	1	4	2	2	8	5	40	80%	32	M	Medium	
		Sedimentation and siltation of watercourses		D	Very high	1	2	2	2	3	6	2	2	10	5	50	80%	40	M	Medium	
		Proliferation of invasive alien plants		D	Very high	1	1	1	2	2	4	2	2	8	5	40	80%	32	M	Medium	
	Excavating for plinth and LP water supply system placement	Altering surface and subsurface flow patterns		D	Very high	3	1	1	1	1	6	2	2	10	5	50	60%	30	M	Medium	
		Erosion of surrounding landscape and subsequently the watercourses		D	Very high	1	2	2	2	2	4	2	2	8	5	40	60%	24	L	Medium	
		Sedimentation and siltation of watercourses		D	Very high	2	2	2	2	2	4	2	2	8	5	40	60%	24	L	Medium	
	Soil stockpiling	Altering surface and subsurface flow patterns		D	Very high	3	1	1	1	1	6	2	2	10	5	50	60%	30	M	Medium	
		Erosion of surrounding landscape and subsequently the watercourses		D	Very high	1	2	2	2	2	4	2	2	8	5	40	60%	24	L	Medium	
		Sedimentation and siltation of watercourses		D	Very high	2	2	2	2	2	4	2	2	8	5	40	60%	24	L	Medium	
	Storage of chemicals, mixes and fuel	Impaired water quality from spills and leaks		D	Very high	1	2	0	2	2	4	2	2	8	5	40	40%	16	L	Medium	
	Operation of heavy machinery and equipment within and in proximity to wetlands	Altering surface flow patterns through hardened surfaces		D	Very high	3	1	1	1	1	6	2	2	10	5	50	60%	30	M	Medium	
		Erosion of surrounding landscape and subsequently the watercourses		D	Very high	1	2	2	2	2	4	2	2	8	5	40	60%	24	L	Medium	
		Sedimentation and siltation of watercourses		D	Very high	2	2	2	2	2	4	2	2	8	5	40	60%	24	L	Medium	
		Wetland vegetation disturbance and proliferation of invasive alien plants		D	Very high	1	1	1	2	2	4	2	2	8	5	40	60%	24	L	Medium	
		Impaired water quality from spills and leaks		D	Very high	1	2	1	2	2	4	2	2	8	5	40	60%	24	L	Medium	
	Installation and assembly of pipelines and LP water supply system	Altering surface and subsurface flow patterns		D	Very high	1	1	1	1	1	2	2	2	6	5	30	80%	24	L	Medium	
	Backfilling of residual excavated areas	Altering surface and subsurface flow patterns		D	Very high	3	2	1	1	1	6	2	2	10	5	50	60%	30	M	Medium	
		Erosion of surrounding landscape and subsequently the watercourses		D	Very high	3	1	1	1	1	6	2	2	10	5	50	60%	30	M	Medium	
		Sedimentation and siltation of watercourses		D	Very high	1	2	2	2	2	4	2	2	8	5	40	60%	24	L	Medium	
	Dewatering excavated areas in relation to water accumulation from rainfall and stormwater management and releasing water into the environment	Temporary alteration of hydrology within watercourse		D	Very high	2	2	2	2	2	4	2	2	8	5	40	80%	32	M	Medium	
		Erosion of watercourses from concentrated flows		D	Very high	2	2	1	1	2	4	2	2	8	5	40	80%	32	M	Medium	
		Sedimentation and siltation of watercourses		D	Very high	1	1	2	2	1	4	2	2	8	5	40	60%	24	L	Medium	
Domestic and industrial waste	Wetland degradation	D	Very high	1	2	2	1	2	4	2	2	8	5	40	40%	16	L	Medium			
	Impaired water quality	D	Very high	2	2	2	2	2	4	2	2	8	5	40	40%	16	L	Medium			
Ablution facilities	Impaired water quality from spills and leaks	D	Very high	1	2	1	2	2	4	2	2	8	5	40	60%	24	L	Medium			
OPERATIONAL	Routine maintenance of pipeline and LP water supply system	Altering surface flow patterns with subsequent erosion	HGM 3 - 9	D	Very high	2	1	1	1	1	4	2	3	9	5	45	60%	27	L	Medium	
		Erosion and sedimentation		D	Very high	1	2	2	2	2	4	2	3	9	5	45	40%	18			