DWS RISK ASSESSMENT MATRIX APPLIED TO THE PROPOSED DEVELOPMENT OF THE HAMMERSDALE INDUSTRIAL ESTATE ON PORTION 4 OF THE FARM LOT A, STERK SPRUIT NO. 2627 KWAZULU NATAL.

19/02/2018

				Severity																
Phases	**Activity**	**Aspect**	**Impact**	**Flow Regime**	**Physico & Chemical (Water Quality)**	**Habitat (Geomorph + Vegetation)**	**Biota**	**Severity**	**Spatial scale**	**Duration**	**Consequence**	**Frequency of activity**	**Frequency of impact**	**Legal Issues**	**Detection**	**Likelihood**	**Significance**	**Risk Rating**	**Control Measures**	**Borderline LOW MODERATE Rating Classes**	**Type Watercourse**	**Confidence**
Construction	Upgrade of an access road and construction of a portion of platform within the buffer zone of the Sterkspruit River	Edge effects such as the indiscriminate movement of construction vehicles and personnel through the riparian habitat and buffer as well as the dumping of spoil material.	Disturbance of riparian habitat, compaction of soils, proliferation of alien and invasive vegetation.	1	1	2	1	**1.25**	1	2	**4.25**	1	3	5	1	**10**	**42.5**	**L**	Mitigation measures as listed within the freshwater asssessment report (EnviroSwift KZN, 2018).	N/A	Sterkspruit River and associated riparian areas (PES Category C, High EIS).	80%
Construction	Construction of 32 platforms and associated infrastructure.	Clearing of vegetation, disturbance of soils and compaction of soils within the development footprint but outside of the riparian and wetland habitat.	Increase in sediment laden stormwater runoff from cleared, disturbed areas resulting in the sedimentation and erosion of the Sterkspruit River and associated riparian habitat as well as the channelled valley bottom wetland.	1	1	2	1	**1.25**	1	2	**4.25**	1	2	5	2	**10**	**42.5**	**L**	Mitigation measures as listed within the freshwater asssessment report (EnviroSwift KZN, 2018).	N/A	Sterkspruit River and associated riparian areas (PES Category C, High EIS). Channelled valley bottom wetland (PES Category D, Moderate EIS)	80%
Construction	Construction of 32 platforms and associated infrastructure.	Spillages of cement and hydrocarbons (e.g. oil and fuel from vehicles) may enter into the Sterkspruit River and the channelled valley bottom wetland with stormwater runoff from the development footprint.	Water quality impairment within the Sterkspruit River and the channelled valley bottom wetland.	1	2	1	1	**1.25**	1	2	**4.25**	1	2	5	3	**11**	**46.75**	**L**	Mitigation measures as listed within the freshwater asssessment report (EnviroSwift KZN, 2018).	N/A	Sterkspruit River and associated riparian areas (PES Category C, High EIS). Channelled valley bottom wetland (PES Category D, Moderate EIS)	80%
Operation	Construction of 32 platforms and associated infrastructure during the construction phase will result in operational phase impacts	Increase in hardened surfaces and in associated storwater runoff.	Erosion and sedimentation of Sterkspruit River and associated riparian areas as well as the channelled valley bottom wetland.	1	1	1	1	**1**	1	1	**3**	1	2	5	2	**10**	**30**	L	Mitigation measures as listed within the freshwater asssessment report (EnviroSwift KZN, 2018).	N/A	Sterkspruit River and associated riparian areas (PES Category C, High EIS). Channelled valley bottom wetland (PES Category D, Moderate EIS)	80%
Operation	Light industrial activities	Increase in contaminated stormwater runoff from hardened surfaces associated with the development.	Water quality impairment within the Sterkspruit River and the channelled valley bottom wetland.	1	1	1	1	**1**	1	1	**3**	5	2	5	3	**15**	**45**	L	Mitigation measures as listed within the freshwater asssessment report (EnviroSwift KZN, 2018).	N/A	Sterkspruit River and associated riparian areas (PES Category C, High EIS). Channelled valley bottom wetland (PES Category D, Moderate EIS)	60%

RISK ASSESSMENT KEY (Referenced from DWA RISK-BASED WATER USE AUTHORISATION APPROACH AND DELEGATION GUIDELINES)

Negative Rating

TABLE 1- SEVERITY

How severe does the aspects impact on the environment and resource quality characterisitics (flow regime, water quality, geomorfology, biota, habitat) ?

Insignificant / non-harmful	1
Small / potentially harmful	2
Significant / slightly harmful	3
Great / harmful	4
Disastrous / extremely harmful and/or wetland(s) involved	5
Where "or wetland(s) are involved" it means	

TABLE 2 – SPATIAL SCALE

How big is the area that the aspect is impacting on?

Area specific (at impact site)	1
Whole site (entire surface right)	2
Regional / neighbouring areas (downstream within quaternary catchment	3
National (impacting beyond seconday catchment or provinces)	4
Global (impacting beyond SA boundary)	5

TABLE 3 – DURATION

How long does the aspect impact on the environment and resource quality?

One day to one month, PES, EIS and/or REC not impacted	1
One month to one year, PES, EIS and/or REC impacted but no change in status	2
One year to 10 years, PES, EIS and/or REC impacted to a lower status but can be improved over this period through mitigation	3
Life of the activity, PES, EIS and/or REC permanently lowered	4
More than life of the organisation/facility, PES and EIS scores, a E or F	5

TABLE 4 – FREQUENCY OF THE ACTIVITY

How often do you do the specific activity?

Annually or less	1
6 monthly	2
Monthly	3
Weekly	4
Daily	5

TABLE 5 – FREQUENCY OF THE INCIDENT/IMPACT

How often does the activity impact on the environment?

Almost never / almost impossible / >20%	1
Very seldom / highly unlikely / >40%	2
Infrequent / unlikely / seldom / >60%	3
Often / regularly / likely / possible / >80%	4
Daily / highly likely / definitely / >100%	5

TABLE 6 – LEGAL ISSUES

How is the activity governed by legislation?

No legislation	1
Fully covered by legislation (wetlands are legally governed)	5
Located within the regulated areas	

TABLE 7 – DETECTION

How quickly can the impacts/risks of the activity be observed on the environment (water resource quality characteristics), people and property?

Immediately	1
Without much effort	2
Need some effort	3
Remote and difficult to observe	4
Covered	5

TABLE 8: RATING CLASSES

RATING	CLASS	MANAGEMENT DESCRIPTION
1 – 55	(L) Low Risk	Acceptable as is or consider requirement for mitigation. Impact to watercourses and resource quality small and easily mitigated. Wetlands may be excluded.
56 – 169	M) Moderate Risk	Risk and impact on watercourses are notably and require mitigation measures on a higher level, which costs more and require specialist input. Wetlands
170 – 300	(H) High Risk	Always involves wetlands. Watercourse(s) impacts by the activity are such that they impose a long-term threat on a large scale

A low risk class must be obtained for all activities to be considered for a GA

TABLE 9: CALCULATIONS

Consequence = Severity + Spatial Scale + Duration
Likelihood=Frequence of Activity + Frequency of Incident +Legal Issues + Detection
Significance \Risk= Consequence X Likelihood