

River Rehabilitation - Construction Phase

POTENTIAL ENVIRONMENTAL IMPACT (NATURE OF THE IMPACT)	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION						No.	RECOMMENDED MITIGATION MEASURES			ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION							
	Consequence			Likelihood (Probability)		Significance (Degree to which impact may cause irreplaceable loss of resources)		SRK Methodology	Management and mitigation measures	Timeframe	Responsibility	Consequence			Likelihood (Probability)		Significance (Degree to which impact may cause irreplaceable loss of resources)	SRK Methodology
	Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact							Severity	Spatial	Duration	Frequency: Activity	Frequency: Impact		
Surface water																		
Construction activities within the river and on the river banks will loosen sedimentary material resulting in an increase in the current sediment load.	2	2	2	3	3	36	ML Maintain Current Management	1	The construction footprint must be declared and no construction activities must extend past the demarkated construction zone.	On-going	ECO	2	1	2	1	2	15	L No Management Required
								2	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO							
								3	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the commencement of construction	ECO							
								4	Construction should preferably take place during the dry season.	March-August	Project management							
Spillages from the equipment that will be used during construction activities could result in pollution of the water by hydrocarbons.	3	2	1	3	2	30	ML Maintain Current Management	5	Plasic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO	3	2	1	3	1	24	L No Management Required
								6	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO							
Noise																		
Construction activities resulting in noise disturbance in the surrounding area	2	1	1	1	1	8	L No Management Required	7	Any potential noise disturbance will be temporary. No mitigation required	{-}	{-}	2	1	1	1	1	8	L No Management Required

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Waste management																		
Contamination of the area with general waste (litter, construction material etc.) and hazardous waste (Oils, hydrocarbon etc.) produced during the construction phase may have negative impacts on the surrounding environment.	4	2	2	3	3	48	MH Maintain Current Management	8	Any waste produced during the construction should be removed as soon as possible and disposed of at a Municipal Landfill Site.	Weekly during construction	ECO	4	2	2	2	1	24	L No Management Required
								9	All construction materials should be stored in designated areas.	On-going	ECO							
								10	No dumping of excess construction materials will be allowed in the bush surrounding the construction site.	On-going	ECO							
								11	No waste is to be buried or burned on site.	On-going	ECO							
								12	Chemical toilets are to be maintained in a clean state on a regular basis and must be moved to ensure that they adequately service the work areas. The contractor is to ensure that the surrounding bush is not being used as an ablution facility.	On-going	Contractor/ECO							
								13	Appropriate disposal facilities, such as litter bins, must be provided within the construction camp.	On-going	ECO							
Heritage																		
Impact on unidentified heritage artefacts.	3	1	1	2	2	20	L No Management Required	14	If any artefacts of archaeological or cultural interest are found, including graves, then the area will be marked and all activities in that vicinity will cease with immediate effect. SAHRA and the North West Provincial Heritage Resources Authority (NWPHRA)/the Provincial Heritage Resources Authority - Gauteng (PHRA-G) will be notified of the finding and operations at that specific site will only continue after the relevant NWPHRA has granted permission to do so.	On-going	ECO	3	1	1	2	2	20	L No Management Required

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Soil and Land Use																		
Indirect Impact: Disturbance of vegetation on the river banks due to the construction activities may lead to further erosion of the river banks.	3	2	2	2	2	28	ML Maintain Current Management	15	No parking of vehicles or equipment should take place off the access road or designated parking areas.	On-going	ECO	3	1	2	2	1	18	L No Management Required
								16	All work must take place within the construction footprint area and the construction area must be rehabilitated once the construction process has been completed.	After construction	ECO							
Biodiversity																		
Construction activities could result in the disturbance of the vegetation specifically on the banks of the water course.	3	2	1	2	3	30	ML Maintain Current Management	17	No vehicles or plant should be parked within the river course when not actively working on the construction.	On-going	ECO	3	2	1	2	2	24	L No Management Required
								18	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO							
Disturbance of fauna during site clearance and construction activities	3	1	2	3	2	30	ML Maintain Current Management	19	The protection of threatened or protected species (TOPS) must be carried out in accordance to NEMBA (Act 10 of 2004) Chapter 4, Part 2. This will include any amendments or changes to regulations and guidelines pertaining to the protection of TOPS.	On-going	ECO	3	1	2	2	2	24	L No Management Required
								20	No trapping or hunting of fauna should be allowed on site during any phase of the project.	On-going	ECO							

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Construction activities and spillages will negatively impact on aquatic biota present in the Skoenmakers River.	3	2	1	3	3	36	ML Maintain Current Management	21	Plastic trays and liners must be used to prevent cement and spillages of other hazardous substances such as oil or diesel into the water body.	On-going	ECO	3	2	1	3	1	24	L No Management Required
								22	No refueling of vehicles or machinery will be allowed on the construction site. All refueling will be done in the site camp or another designated area off site.	On - going	ECO							
								23	The construction footprint must be declared and no construction activities must extend past the demarkated construction zone.	On-going	ECO							
								24	The amount of heavy machinery and equipment needed to work within the river course should be limited. Only the equipment that is absolutely necessary should be allowed in the river course.	On-going	ECO							
								25	Strict controls and environmental education should be employed for all the construction workers that are working within the water course.	Prior to the commencement of construction	ECO							
								26	Construction should preferably take place during the dry season.	March-August	Project management							
Disturbance of the river bank vegetation could lead to the spread of invasive alien vegetation.	3	3	3	3	2	45	MH Maintain Current Management	27	No vegetation is to be removed outside of the demarcated zones. This will prevent disturbance of natural vegetation and the establishment of alien and invader vegetation species specified by GNR 507 and 508 or any amendments to the legislation.	During site clearance	ECO	3	3	3	3	1	36	ML Maintain Current Management

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Air quality																		
Air pollution from vehicle emissions and fires as well as dust from vehicle movements and stock piles may have a negative impact on air quality.	3	2	2	3	2	35	ML Maintain Current Management	28	Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 30 km/h must be adhered to on the construction site.	On-going	ECO	3	2	2	2	1	21	L No Management Required
								29	High winds may pick up dust from the stockpiles. Screening of stockpiles may be required by utilising wooden supports and shade cloth.	When applicable	ECO							
								30	Designated areas must be allocated for informal fires by construction or project personnel.	When Applicable	ECO							
								31	Vehicles and machinery are to be kept in good working order and meet the manufacturers specifications. Should excessive emissions be observed, the contractor is to have the equipment seen to within 24 hours.	On-going	Constructor/ECO							
Heritage																		
Erection of construction camps	5	2	3	5	3	80	H Improve Current Management	32	The location of all heritage sites should be known to the construction subcontractor. A buffer zone around heritage sites of least 100 metres should be maintained. All heritage sites should be fenced off and clearly demarcated.	When Applicable	ECO	2	2	3	5	3	56	MH Maintain Current Management
33																		
34																		
35																		
36																		
37																		
38																		
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40																		
Construction of access roads	5	2	3	5	3	80	H Improve Current Management	32	The location of all heritage sites should be known to the construction subcontractor. A buffer zone around heritage sites of least 100 metres should be maintained. All heritage sites should be fenced off and clearly demarcated.	When Applicable	ECO	2	2	3	5	3	56	MH Maintain Current Management
33																		
34																		
35																		
36																		
37																		
38																		
39																		
40																		
Vibrations caused by heavy construction vehicles	5	2	3	5	3	80	H Improve Current Management	32	The location of all heritage sites should be known to the construction subcontractor. A buffer zone around heritage sites of least 100 metres should be maintained. All heritage sites should be fenced off and clearly demarcated.	When Applicable	ECO	2	2	3	5	3	56	MH Maintain Current Management
33																		
34																		
35																		
36																		
37																		
38																		
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40																		
Compression of underground archaeological deposits	5	2	3	5	3	80	H Improve Current Management	32	The location of all heritage sites should be known to the construction subcontractor. A buffer zone around heritage sites of least 100 metres should be maintained. All heritage sites should be fenced off and clearly demarcated.	When Applicable	ECO	2	2	3	5	3	56	MH Maintain Current Management
33																		
34																		
35																		
36																		
37																		
38																		
39																		
40																		
Leaching of archaeological deposits and features by excess surface water	5	2	3	5	3	80	H Improve Current Management	32	The location of all heritage sites should be known to the construction subcontractor. A buffer zone around heritage sites of least 100 metres should be maintained. All heritage sites should be fenced off and clearly demarcated.	When Applicable	ECO	2	2	3	5	3	56	MH Maintain Current Management
33																		
34																		
35																		
36																		
37																		
38																		
39																		
40																		
Subsurface trenching and any semipermanent structures and beacons	5	2	3	5	3	80	H Improve Current Management	32	The location of all heritage sites should be known to the construction subcontractor. A buffer zone around heritage sites of least 100 metres should be maintained. All heritage sites should be fenced off and clearly demarcated.	When Applicable	ECO	2	2	3	5	3	56	MH Maintain Current Management
33																		
34																		
35																		
36																		
37																		
38																		
39																		
40																		
Construction of any foundation or semi-permanent cement/concrete surface	5	2	3	5	3	80	H Improve Current Management	32	The location of all heritage sites should be known to the construction subcontractor. A buffer zone around heritage sites of least 100 metres should be maintained. All heritage sites should be fenced off and clearly demarcated.	When Applicable	ECO	2	2	3	5	3	56	MH Maintain Current Management
33																		
34																		
35																		
36																		
37																		
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Constant movement of heavy construction vehicles	5	2	3	5	3	80	H Improve Current Management	32	The location of all heritage sites should be known to the construction subcontractor. A buffer zone around heritage sites of least 100 metres should be maintained. All heritage sites should be fenced off and clearly demarcated.	When Applicable	ECO	2	2	3	5	3	56	MH Maintain Current Management
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