

APPENDIX F: IMPACT ASSESSMENT

CONSTRUCTION; OPERATIONAL + DECOMMISSIONING PHASE

Constructional Phase Preferred			
CONSTRUCTION PHASE			
Activity	Impact summary	Significance (after mitigation)	Proposed mitigation
Use of various materials, such as diesel, oils and cement during construction	Direct impacts: Mismanagement of waste and pollutants like hydrocarbons, construction waste and hazardous chemicals will result in these substances entering and polluting the soil. Due to the nature of the soil and quick infiltration rate, pollutants can quickly move through the environment during and after storm events and make their way to the wetland	Low	<ul style="list-style-type: none"> All waste generated during construction is to be disposed of as per the Environmental Management Programme and no washing of paint brushes, containers, wheelbarrows, spades, picks or any other equipment adjacent to any drainage channel is permitted. Proper management and disposal of construction waste must occur during the lifespan of the project, including during maintenance of the proposed Q6 pipeline. No release of any substance i.e. cement, oil, that could be toxic to fauna or faunal habitats within the development area. Do not locate the construction camp or any depot for any substance which causes or is likely to cause pollution within a distance of 100m of any watercourse. Spillages of fuels, oils and other potentially harmful chemicals must be cleaned up immediately and contaminants properly drained and disposed of using proper solid/hazardous waste facilities (not to be disposed of within the natural environment). Any contaminated soil must be removed and the affected area rehabilitated immediately.
	Indirect impacts: Impacts on nearby wetlands	Low	
	Cumulative impacts: Nil	Low	
Clearing of vegetation for construction	Direct impacts: During the construction phase the area for the proposed Q6 pipeline will be cleared of vegetation. This	Low-Moderate	<ul style="list-style-type: none"> Once the route is known, the site must be inspected by a botanist during the summer season to identify all protected tree species of conservation concern in order to record their existence for permitting purposes.

	will result in the loss of indigenous species, disturbance of species of conservation concern and the fragmentation of vegetation communities. The removal of vegetation will also expose soil increasing the risk of erosion.		<ul style="list-style-type: none"> Indigenous trees removed during construction must be replaced with the same species at a ratio of 1:2 (2 trees must be planted for every 1 tree removed); Protected trees removed during construction must be replaced with the same species at a ratio of 1:5 (5 trees must be planted for every 1 tree removed); Disturbed areas must be rehabilitated immediately after construction has been completed in that area by planting appropriate indigenous plant species; The clearing of vegetation must be kept to a minimum and within the Q6 pipeline line servitude; During the construction phase workers must be limited to areas under construction and access to the undeveloped areas must be strictly controlled; Rehabilitated areas must be monitored to ensure the establishment of re-vegetated areas.
	Indirect impacts: Loss of indigenous vegetation.	Low-Moderate	
	Cumulative impacts: Loss of natural vegetation due to vegetation fragmentation and habitat disturbance in the landscape.	Low-Moderate	
Loss of faunal habitat and ecological structure	Direct impacts: The construction phase of the proposed Q6 pipeline development will result in the loss of faunal habitats within the area. This impact relates to the complete removal or partial destruction/disturbance of existing vegetation by machinery and workers, impacting directly on the ecological condition of natural vegetation and habitat availability. These activities will have an impact on foraging and breeding ecology of faunal species. Loss of vegetation generally affects nutrient cycles, removes the organic litter layer and results in habitat fragmentation and destruction of	Low-Moderate	<ul style="list-style-type: none"> All construction and maintenance activities must be carried out according to the generally accepted environmental best practice and the temporal and spatial footprint of the development must be kept to a minimum. The boundaries of the development footprint areas are to be clearly demarcated and it must be ensured that all activities remain within the demarcated footprint area. Edge effects of all construction and operational activities, such as erosion and alien plant species proliferation, which will affect faunal habitats adjacent to the development area, need to be strictly managed. Any natural areas beyond the development footprint, which have been affected by the construction activities, must be rehabilitated using indigenous plant species. Education and awareness campaigns on faunal species and their habitat are recommended to help

	<p>wildlife corridors. The habitat is however already largely transformed due to the adjacent mining activities and fragmented and the site is not a unique habitat within the landscape.</p> <p>Indirect impacts: Loss of indigenous vegetation.</p> <p>Cumulative impacts: Habitat fragmentation</p>	<p>Low-Moderate</p> <p>Low-Moderate</p>	<p>increase awareness, respect and responsibility towards the environment for all staff and contractors.</p>
Impacts on the faunal communities	<p>Direct impacts: Activities involving the clearing/harvesting of natural vegetation will result in the loss of faunal species. Faunal diversity within the study area has been negatively impacted as a result of historic and on-going disturbances associated with mining practices. It is not envisaged that any Red data species will be present on the site and thus directly impacted as a result of the development. During the operational phase, a further loss of faunal diversity and ecological integrity will occur due to the increase in human activity and potential poaching.</p> <p>Indirect impacts: Loss of species diversity.</p> <p>Cumulative impacts: Limited impact on ecological diversity in the vicinity.</p>	<p>Moderate-High</p> <p>Moderate-High</p> <p>Moderate-High</p>	<ul style="list-style-type: none"> It is recommended that a speed limit of 30km/h is implemented on all roads running through the study area during all phases in order to minimise risk to fauna from vehicles. No trapping or hunting of fauna is to take place. Access control must be implemented to ensure that no illegal trapping or poaching takes place. Should any Red Data faunal species be noted within the development footprint areas, these species must be relocated to similar habitat within the vacant land to the west of the development area with the assistance of a suitably qualified ecologist. Any fauna directly threatened by the construction activities must be removed to a safe location by the ECO or qualified Ecologist. All staff and contractors must undergo an environmental induction course held by the ECO as well as faunal education and awareness programmes.
Noise pollution	Direct impacts:	Moderate	<ul style="list-style-type: none"> Strict control must be maintained over all activities

and disturbance	The proposed development area is located within close proximity to farm areas. As a result disturbance of fauna by the proposed development during the construction phase is anticipated to be of moderate significance. Species are particularly sensitive to disturbance during the breeding season and this must be borne in mind during both the construction and operational phases.		<p>during construction, in line with an approved Construction EMPr.</p> <ul style="list-style-type: none"> Any Red Data species identified in this report observed to be roosting and/or breeding in the vicinity, the ECO must be notified
	Indirect impacts: Loss of species diversity.	Moderate	
	Cumulative impacts: Movement of species from one area into another.	Moderate	
Avifaunal impacts during the construction phase	Direct impacts: Disturbance particularly during the sensitive parts of the breeding cycle could result in breeding failure. Species residing within this landscape often experience varying degrees of disturbance. As a result, disturbance of birds by the proposed substation is anticipated to be of low significance as birds will move away from the area temporarily. Species sensitive to disturbance and ground-nesting species resident within the development footprint will be particularly susceptible. Disturbance can also influence the community structure	Low-Moderate	<ul style="list-style-type: none"> Strict control must be maintained over all activities during construction, in line with an approved Construction EMPr. During Construction, if any of the Red Data species identified in this report are observed to be roosting and/or breeding in the vicinity, the ECO must be notified. The construction camps must be as close to the site as possible Contractors and working staff must stay within the development footprint and movement outside these areas including avian micro-habitats must be restricted. Driving must take place on existing roads and a speed limit of 30km/h must be implemented on all roads running through the study area during all phases.

	of avifauna within close proximity to the development as certain species will be displaced and forced to find alternative territories. Avian species with small territories are particularly susceptible.		
	Indirect impacts: Effect on nesting birds outside the vicinity of the site.	Low-Moderate	
	Cumulative impacts: Moderate as there is a high level of existing disturbance in the vicinity.	Low-Moderate	
Heritage	Direct impacts: Based on available information and prior knowledge of the region, it can provisionally be said that the possibility of the proposed development to impact on any sites, features or object of cultural significance is very low.	Low	As per the study, it was determined that no heritage resources were found within the route of the proposed Q6 pipeline, however there were stonewalling dating to the Iron Age found in close proximity of the proposed. These heritage resources will not be impacted provided the contractor adheres to the mitigation measures provided.
	Indirect impacts: None		
	Cumulative impacts: Should significant archaeological deposits be located then cumulative impacts will be experienced		
OPERATIONAL PHASE			
Activity	Impact summary	Significance (after mitigation)	Proposed mitigation
Loss of faunal habitat and ecological	Direct impacts: The operational phase of the proposed Q6 pipeline	Low-Moderate	<ul style="list-style-type: none"> All construction and maintenance activities must be carried out according to the generally accepted environmental best practice and the temporal and

structure	<p>construction will result in the loss of faunal habitats within the area. This impact relates to the complete removal or partial destruction/disturbance of existing vegetation by machinery and workers, impacting directly on the ecological condition of natural vegetation and habitat availability. These activities will have an impact on foraging and breeding ecology of faunal species. Loss of vegetation generally affects nutrient cycles, removes the organic litter layer and results in habitat fragmentation and destruction of wildlife corridors.</p> <p>The habitat is however already largely transformed due to the farming activities, fragmented and the site is not a unique habitat within the landscape.</p>		<p>spatial footprint of the development must be kept to a minimum.</p> <ul style="list-style-type: none"> • The boundaries of the development footprint areas are to be clearly demarcated and it must be ensured that all activities remain within the demarcated footprint area. • Edge effects of all construction and operational activities, such as erosion and alien plant species proliferation, which will affect faunal habitats adjacent to the development area, need to be strictly managed. • Any natural areas beyond the development footprint, which have been affected by the construction activities, must be rehabilitated using indigenous plant species. • Education and awareness campaigns on faunal species and their habitat are recommended to help increase awareness, respect and responsibility towards the environment for all staff and contractors.
	Indirect impacts: Loss of indigenous vegetation.	Low-Moderate	
	Cumulative impacts: Habitat fragmentation	Low-Moderate	
DECOMMISSIONING PHASE			
Decommissioning and closure phase has not been considered as part of this application as the end use of the site and required decommissioning activities are not known at this time; it is therefore not possible to predict the potential environmental impacts. If decommissioning phase is considered in future, the developer will undertake the required actions as prescribed by the legislation at the time and comply with all relevant requirements administered by any relevant authority and competent authority at that time.			