

APPENDIX G7- IMPACT TABLE AND ASSESSMENT

Table 1: Pre and Post Impact Significance Assessment for all phases of the project for the Preferred Alternative

PLANNING AND DESIGN PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
Legislation and Policy Compliance	During the Planning and Design Phase, failure to comply with existing policies and legal obligations could lead to the project conflicting with local, provincial and national policies, legislation etc. This could result in legal non-compliance, fines, overall project failure or undue disturbance to the natural environment	Direct	Regional	Long term	High	Very High	Possible	Negative (-ve)	High(-ve)	All relevant legislation and policy must be consulted, and the proponent must ensure that the project is compliant with such legislation and policy. These should include (but are not restricted to): NEMA, NWA, Local and District Spatial Development Frameworks, Eastern Cape Biodiversity Conservation Plan (ECBCP), Local Municipal bylaws.	Low (-ve)
SCORE			2	3	3	8					

CONSTRUCTION PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
<p>Development within the catchment</p> <p>Construction of Chicken houses, upgrade of the roads, operation of machines, clearing of vegetation within the catchment</p>	Water contamination from the operation and washing of machinery in the catchments of the aquatic ecosystems.	Direct	Regional	Short term	Medium	Medium	Probable	Negative (-ve)	Medium (-ve)	<ul style="list-style-type: none"> No mixed concrete should be directly deposited on the ground without a mixing tray and any concrete spilled out of the demarcated area should be removed immediately to avoid impacting on the freshwater ecosystems. No concrete mixing machinery can be washed onsite. The concrete wash water contains high levels of chromium, which has the potential to contaminate ground and surface water. All vehicles, plant and equipment shall be maintained on a regular basis, to ensure they are all in good working order; and: All of the equipment (including vehicles 	Low (-ve)

CONSTRUCTION PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										<p>and plant) may only be operated by competent persons;</p> <ul style="list-style-type: none">• Designated entry and exit points should be demarcated and used by all construction vehicles to gain access to the site;• Vehicles should only utilize demarcated roads and turning areas within the construction site to limit the area of impact;• All fuels, oils, and lubricants shall be stored appropriately. All containers shall be inspected on a regular basis for leaks. Should a spill/leak occur, the source will be isolated, and the spill contained. All contaminated soil will be disposed of at the hazardous waste	

CONSTRUCTION PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										vessel for appropriate disposal at a registered land fill site. <ul style="list-style-type: none"> Absorbent material shall be placed over the spill site, to ensure the complete removal of the spill. No hazardous chemicals used and/or spilled during the construction process must enter the riparian zones, wetlands or groundwater. If such a spill occurs during and/or on completion of the construction, a hazardous spill protocol must be implemented and the affected area cleaned up immediately. 	
SCORE			2	1	2	5					
Development within the catchment	Siltation in the aquatic ecosystems due to vegetation	Direct	Regional	Medium term	Medium	Medium	Probable	Negative (-ve)	Medium (-ve)	<ul style="list-style-type: none"> The construction zone should be demarcated and the activities that should 	Low (-ve)

CONSTRUCTION PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
Construction of Chicken houses, upgrade of the roads, operation of machines, clearing of vegetation within the catchment	clearing and extensive earthworks that will be undertaken in the catchments of the aquatic ecosystems.									<p>be implemented to minimise the area of soil disturbance and the potential for mobilisation of sediments from bare areas include:</p> <ul style="list-style-type: none">• Soil stabilisation practices such as sediment blankets and mulching, introduced onsite.• Earth dikes and diversions to direct all storm flows from disturbed areas into silt traps.• Vegetation should remain intact where possible during the construction phase to limit high surface flows and mobilisation of sediment.• Ensure minimal or no disturbance outside of the development footprint area during construction, and all	

CONSTRUCTION PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										material arising from the development must be prohibited from entering the freshwater habitats and associated buffer zones.	
SCORE			2	2	2	6					
Development within the catchment Construction of Chicken houses, upgrade of the roads, operation of machines, clearing of vegetation within the catchment	Spread of invasive alien plants into the aquatic ecosystems as a result of the disturbance during construction.	Direct	Regional	Long term	Medium	High	Probable	Negative (-ve)	High (-ve)	<ul style="list-style-type: none"> Develop and implement an alien plant control programme to manage problematic plant species and prevent further spread and establishment of problem species into all aquatic ecosystems and natural open spaces. Areas heavily infested with IAPs will need to be revegetated with indigenous plant species that are suited to the type and composition of the surrounding 	Medium (-ve)

CONSTRUCTION PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										vegetation (e.g. thicket, forest or grassland).	
SCORE			2	3	2	7					
Excavation and disturbance within an aquatic ecosystem	Direct loss of wetland habitat due to excavation and installation of water reticulation pipelines.	Direct	Regional	Medium term	Medium	Medium	Probable	Negative (-ve)	Medium (-ve)	<ul style="list-style-type: none">The alignment of the linear infrastructure, together with the adjacent working area, should be clearly demarcated prior to the commencement of the excavations. The width of the working area within freshwater ecosystems should be kept to a minimum (12m) to ensure that impacts on these systems are minimised. All activities must be restricted to within the demarcated working area.It is assumed that the pipeline will be a buried pipeline and therefore the following measures should be implemented when excavating in the	Low (-ve)

CONSTRUCTION PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										SEEP 2 and CVB wetland systems: <ul style="list-style-type: none"> • The topsoil should be removed and stockpiled separately from the underlying sub-soil on either side of the trench. • The vegetation should be carefully removed, and suitably stored for replanting upon the completion of the backfilling process (if possible). • The excavation should be carried out immediately prior to the laying of the pipeline feature foundations in order to minimise the time during which the trench remains open. • The excavated material should be protected from erosion if it is anticipated that it will remain exposed for any length of time. Stockpiles of 	

CONSTRUCTION PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										<p>this material should be positioned on either side of the trenches, keeping the topsoil and the subsoil separate. The following mitigation measures should be put in place for the largescale earthworks associated with the gabion discharge structure:</p> <ul style="list-style-type: none">• Ensure that the correct sediment control measures are put in place such as earth dikes and diversions to direct all storm flows from disturbed areas into silt traps and soil stabilisation practices, such as sediment blankets and mulching, introduced onsite.• It is critical that vegetation is established immediately after all major earthworks.• An approved local indigenous grass	

CONSTRUCTION PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										seed mixture should be applied to the exposed areas. <ul style="list-style-type: none"> The grass seed should be watered on a regular basis (i.e. every three days unless there is rain) until the vegetation has established and adequate cover is achieved (i.e. >75%). Vegetation should remain intact where possible during the construction phase to limit high surface flows and mobilisation of sediment. 	
SCORE			2	2	2	6					
Archaeological and Cultural Heritage	In the unlikely event that archaeological and cultural remains occur during the construction phase, they are likely to be damaged during excavation and	Direct	Local	Short Term	Low	Low	Improbable	Negative (-ve)	Very Low(-ve)	The heritage and palaeontological studies noted that there was a low chance, if any, of heritage material occurring within the study area footprint. The recommendations suggest a Chance Find Protocol be initiated; however, no further mitigation is required.	Very Low(-ve)

CONSTRUCTION PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
	their heritage value lost in the process.										
SCORE			1	1	1	3					
Palaeontology	In the unlikely event that fossils and other palaeontological remains occur during the construction phase, they are likely to be damaged during excavation and their heritage value lost in the process.	Direct	Local	Short Term	Low	Low	Improbable	Negative (-ve)	Very Low(-ve)	The heritage and palaeontological studies noted that there was a low chance, if any, of heritage and palaeontological material occurring within the study area footprint. The recommendations suggest a Chance Find Protocol be initiated; however, no further mitigation is required.	Very Low(-ve)
SCORE			1	1	1	3					
Employment Opportunities	The proposed project will create temporary employment during the construction phase.	Direct	Local	Short Term	High	Medium	Definite	Positive (+ve)	Medium (+ve)	Unskilled construction labourers should be sourced from the neighbouring community. Where possible, skilled individuals or contractors from Stutterheim should be used for construction of the various development components.	N/A
SCORE			1	1	3	5					

CONSTRUCTION PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
Climate Change: Contribution to Greenhouse Gasses	During the construction phase, the increase in construction vehicle traffic and the use of diesel/petrol operated construction equipment will increase the GHG emissions generated as a result of construction activities (e.g. carbon dioxide, carbon monoxide, etc.). These GHGs will cumulatively contribute to the global GHG emission sources.	Direct	International	Long term	Low	High	Possible	Negative (-ve)	Medium (-ve)	<ul style="list-style-type: none"> During the construction period, significant manual labour will be utilised instead of large machinery. Generators and similar will be used, however. All construction vehicles and equipment must be regularly maintained and serviced to ensure efficient use of fuels during the construction phase of the project. The number of trips that construction vehicles take must be limited to the absolute minimum to reduce vehicle emissions. 	Low (-ve)
SCORE			3	3	1	7					
Solid waste generation	Solid waste generation during construction	Direct	Local	Short Term	Medium	Low	Probable	Negative (-ve)	Low (-ve)	<ul style="list-style-type: none"> During construction there must be a designated area for solid waste disposal, 	Very Low (-ve)

CONSTRUCTION PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
	activities i.e. builders rubble, cement, etc. and general plastic waste may proliferate into the terrestrial and aquatic environments on site.									<p>the most desired locality would be in the site camp.</p> <ul style="list-style-type: none"> This area must be protected from wind and scavengers that may be within the area. Solid waste must be removed on a weekly basis. If spills of general waste occur, they are to be cleaned up immediately in order to prevent proliferation into the surrounding environment Under no circumstances is any littering allowed. 	
SCORE			1	1	2	4					
Permanent or temporary loss of indigenous vegetation cover	Permanent or temporary loss of indigenous vegetation cover because of site clearing. Site clearing before construction will result in the blanket clearing		Local	Short term	Medium	Low	Definite	Negative (-ve)	Low (-ve)	<ul style="list-style-type: none"> No clearing outside of footprint to take place. Surrounding intact vegetation not to be cleared unnecessarily during the construction process. 	Very low (-ve)

CONSTRUCTION PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
	of vegetation within the affected footprint.										
SCORE			1	1	2	4					
Loss of Flora Species of Conservation Concern	Loss of Flora Species of Conservation Concern during pre-construction site clearing activities. Species of special concern are potentially present within the affected area, which could be destroyed during site preparation.	Direct	Local	Short term	Medium	Low	Probable	Negative (-ve)	Low (-ve)	<ul style="list-style-type: none"> A flora search and rescue is unlikely to be required and no protected flora or fauna were present on site. 	Very low (-ve)
SCORE			1	1	2	4					
Susceptibility of areas to erosion	Susceptibility of some areas to erosion because of construction related disturbances. Removal of vegetation cover and soil	Direct	Local	Medium term	Low	Low	Probable	Negative (-ve)	Low (-ve)	<ul style="list-style-type: none"> Suitable measures must be implemented in areas that are susceptible to erosion. Areas must be rehabilitated, and a suitable cover crop planted. 	Very low (-ve)

CONSTRUCTION PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
	disturbance may result in some areas being susceptible to soil erosion.									<ul style="list-style-type: none"> If natural vegetation re-establishment does not occur, a suitable grass must be applied. Possible grasses include <i>Cynodon dactylon</i>, <i>Eragrostis curvula</i> & <i>Digitaria eriantha</i>. 	
SCORE			1	2	1	4					
Aquatic and Riparian processes	Diversion and increased velocity of surface water flows – Changes to the hydrological regime and increased potential for erosion. Impact of changes to water quality. Loss of riparian vegetation / aquatic habitat. Loss of species of special concern.	Direct	Local	Short term	Low	Low	Probable	Negative (-ve)	Low (-ve)	Adequate measures to be implemented for erosion, stormwater management and also to ensure any effluent runoff is adequately contained.	Very low (-ve)
SCORE			1	2	1	4					

CONSTRUCTION PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
Loss of Faunal Habitat & Species of Conservation Concern	Activity will result in the loss of habitat for faunal species as well as potential direct loss of faunal species.	Direct	Local	Medium term	Medium	Low	Definite	Negative (-ve)	Low (-ve)	<ul style="list-style-type: none"> The habitats and microhabitats present on the project sites are not unique and are widespread in the general area, hence the local impact associated with the footprint would be of low significance if mitigation measures are adhered to. Small mammals within the habitat on and around the affected area are generally mobile and likely to be transient to the area. While several flagged bird species might occur in the area around the sites, with extensive similar habitat in the surrounding area, it is unlikely that the proposed limited footprint Broiler Houses will have any significant impact to any bird species 	Very low (-ve)

CONSTRUCTION PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										<p>above existing baseline levels of disturbance in an agricultural area.</p> <ul style="list-style-type: none">• The risk of Species of Conservation Concern is low, and it is unlikely that there will be any impact to populations of such species because of the activity.• A faunal search and rescue is unlikely to be required and no protected species are likely to be affected.• No animals are to be harmed or killed during the course of construction.• Workers are not allowed to snare any faunal species.	
SCORE			1	1	2	4					

OPERATIONAL PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
<p>Development within the catchment</p> <p>Operation of chicken houses, upgrade of the roads, operation of machines, clearing of vegetation within the catchment</p>	Increased flood peaks, runoff velocity and water quantity due to the increase in hardened surfaces in the catchments, thereby causing increased water inputs (flow modification).	Direct	Regional	Long Term	Low	Medium	Probable	Negative (-ve)	Medium (-ve)	<ul style="list-style-type: none"> Stormwater from Broiler House 2 should not be directed toward the SEEP 1, but rather toward the CVB wetland. The buffer between the SEEP 1 and the broiler house is limited, and the SEEP 1 is particularly sensitive to hydrological and water quality impacts. Adoption and rehabilitation of the buffer zone, with the removal of invasive alien vegetation, to ensure an undisturbed vegetation community. Management of the buffer should include the prevention of overgrazing, 	Low (-ve)

OPERATIONAL PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										trampling by livestock, invasive alien plant encroachment and undesirable burning regimes <ul style="list-style-type: none"> • In addition, routine vegetation monitoring and maintenance should be implemented within buffer zones to ensure adequate ground cover, prevent erosion, and ensure sediment trapping efficiency. Any bare patches should be rehabilitated immediately using indigenous grass species. • In addition to the buffer zone, a series of filter strips should be constructed and maintained between the broiler 	

OPERATIONAL PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										<p>houses and the CVB and Kubusi River. A filter strip is generally defined as a gently sloping area of grass that water flows onto and across in order to trap and remove sediment and silt. The filter strip should comprise of a mix of grass species that can grow to a height of at least 150 mm to ensure maximum sediment and toxicant trapping.</p> <ul style="list-style-type: none"> • The filter strips should be maintained on ANCA's property to filter off unwanted material in the event that either a stormwater pipe should burst or one of the wash-water channels should overflow. 	

OPERATIONAL PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										<ul style="list-style-type: none">In addition to the filter strips, an infiltration trench should be constructed to catch stormwater flows once they have passed through the filter strips, before they leave the ANCA property. Infiltration trenches are designed to offer runoff volume reduction by promoting infiltration and subsurface/lateral flows of water rather than surface flow. Infiltration trenches also offer further sediment and toxicant removal capacity. A decant point should be constructed away from the freshwater ecosystems and	

OPERATIONAL PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										<p>into a vegetated area to offer similar functionality to the vegetated strips.</p> <ul style="list-style-type: none"> • A clearly defined contingency plan should be compiled and adhered to in the case of failures or spills from the waste treatment systems or other point sources of pollution. • Any sewage pump stations and/or wastewater treatment works must have appropriate mitigation measures in place in case of power failures and/or operational failures. • As a minimum, this should include backup generators, sumps and/or bunds and an emergency 	

OPERATIONAL PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										<p>protocol to manage failures and spills/leaks with immediate effect.</p> <ul style="list-style-type: none">• The existing and proposed access road upgrades that runs through the proposed development site must be appropriately drained to prevent the concentration and direct discharge of surface water into the wetland and river systems. A series of mitre drains and surface-cross drains should be installed along the road gradient to divert stormwater into adjacent vegetated areas or infiltration trenches, thereby reducing erosion and sediment transport.	

OPERATIONAL PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										Drains must be regularly inspected and maintained to prevent blockage and ensure functionality. <ul style="list-style-type: none"> A monitoring programme should be developed and implemented to assess the effectiveness of the mitigation measures over time. This should include seasonal inspections of buffer zones, filter strips, stormwater infrastructure, and the evaporation 	
SCORE			2	3	1	6					
Development within the catchment. Operation of chicken houses, upgrade of the	Increased flood peaks, runoff velocity and water quantity due to the increase in hardened surfaces in the catchments, thereby causing	Direct	Regional	Medium term	Medium	Medium	Probable	Negative (-ve)	Medium (-ve)	<ul style="list-style-type: none"> Any sewage pump stations and/or wastewater treatment works must have appropriate mitigation measures in place in case of power 	Low (-ve)

OPERATIONAL PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
roads, operation of machines, clearing of vegetation within the catchment	increased water inputs (erosional and sediment flux modification).									<p>failures and/or operational failures. As a minimum, this should include backup generators, sumps and/or bunds and an emergency protocol to manage failures and spills/leaks with immediate effect.</p> <ul style="list-style-type: none"> • An appropriate maintenance regime should be drawn up and adopted for all stormwater and wash-water related infrastructure to ensure its continued functionality. • Maintenance is not limited to, but should include: • Dredging and cleaning of all pipes and dams associated with stormwater 	

OPERATIONAL PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										management to prevent build-up of sludge and sedimentation. <ul style="list-style-type: none"> • Clearing of inlets, outlets and emergency spillways associated with stormwater dams. • Regular cutting of any vegetation associated with wash-water management to maximise nutrient removal efficiency. • Regular water samples should be taken from a point below the two wash-water evaporation ponds to ensure the desired water quality is being maintained. • Ensure all septic tanks are operating effectively with 	

OPERATIONAL PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										routine annual checks.	
SCORE			2	2	2	6					
Development within the catchment. Operation of chicken houses, upgrade of the roads, operation of machines, clearing of vegetation within the catchment	Polluted stormwater generated from the development site (water quality modification)	Direct	Regional	Long term	Medium	High	Probable	Negative (-ve)	High (-ve)	<ul style="list-style-type: none"> Any sewage pump stations and/or wastewater treatment works must have appropriate mitigation measures in place in case of power failures and/or operational failures. As a minimum, this should include backup generators, sumps and/or bunds and an emergency protocol to manage failures and spills/leaks with immediate effect. In the case of the SEEP 1 system, sufficient bunding and filters should be constructed on the downslope side of Broiler House 2 	Medium (-ve)

OPERATIONAL PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										<p>to prevent any pollutants from entering the wetland system.</p> <ul style="list-style-type: none">• The evaporation pond used for wash-water storage should be appropriately lined with a geosynthetic liner to prevent infiltration into groundwater and should be designed to accommodate potential high rainfall events that produce excess storm flows. The pond should be fenced to prevent access by livestock or wildlife, and any overflows must be directed away from the freshwater ecosystems. It must also be designed to accommodate extreme rainfall	

OPERATIONAL PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										events, especially in light of increasing climatic variability and associated storm intensities.	
SCORE			2	3	2	7					
Development within the catchment. Operation of chicken houses, upgrade of the roads, operation of machines, clearing of vegetation within the catchment	Operation of septic tanks in the catchment (water quality modification)	Indirect	Local	Long term	Low	Medium	Probable	Negative (-ve)	Medium (-ve)	<ul style="list-style-type: none"> Any sewage pump stations and/or wastewater treatment works must have appropriate mitigation measures in place in case of power failures and/or operational failures. As a minimum, this should include backup generators, sumps and/or bunds and an emergency protocol to manage failures and spills/leaks with immediate effect. An appropriate maintenance regime should be drawn up and 	Low (-ve)

OPERATIONAL PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										<p>adopted for all stormwater and wash-water related infrastructure to ensure its continued functionality. Maintenance is not limited to, but should include:</p> <ul style="list-style-type: none"> • Dredging and cleaning of all pipes and dams associated with stormwater management to prevent build-up of sludge and sedimentation. • Clearing of inlets, outlets and emergency spillways associated with stormwater dams. • Regular cutting of any vegetation associated with wash-water management to 	

OPERATIONAL PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
										maximise nutrient removal efficiency. <ul style="list-style-type: none"> Regular water samples should be taken from a point below the two wash-water evaporation ponds to ensure the desired water quality is being maintained. Ensure septic tanks are operating effectively with routine annual checks. 	
SCORE			1	3	1	5					
Operation of water reticulation pipeline in aquatic ecosystems and their catchments	Increased hydrological inputs into aquatic ecosystems from a leaking water main (flow modification)	Direct	Regional	Medium term	Medium	Medium	Probable	Negative (-ve)	Medium (-ve)	<ul style="list-style-type: none"> A leak detection system should be incorporated into the design of the water reticulation pipeline such that any leaks are detected and dealt with expediently. 	Low (-ve)
SCORE			2	2	2	6					

OPERATIONAL PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
Susceptibility of post construction disturbed areas to invasion by exotic and alien invasive species	Susceptibility of post construction disturbed areas to invasion by exotic and alien invasive species and removal of exotic and alien invasive species during construction. Post construction disturbed areas having no vegetation cover are often susceptible to invasion by weedy and alien species, which can not only become invasive but also prevent natural flora from becoming established.	Direct	Local	Medium term	Low	Low	Probable	Negative (-ve)	Low (-ve)	<ul style="list-style-type: none"> A suitable weed and alien invasive management strategy to be implemented after completion of construction in areas that might have been disturbed. 	Very low (-ve)
SCORE			1	2	1	4					
Employment opportunities	The proposed project will create permanent employment for skilled and unskilled workers during the operational phase.	Direct	Local	Long Term	Medium	Medium	Definite	Positive (+ve)	Medium (+ve)	<ul style="list-style-type: none"> No mitigation measures required. 	N/A
SCORE			1	3	2	6					

OPERATIONAL PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
Increase in food security	Operations of the chicken broiler houses will contribute towards local and regional food security.	Direct	Regional	Long term	Medium	High	Definite	Positive (+ve)	High (+ve)	<ul style="list-style-type: none"> No mitigation measures required. 	N/A
SCORE			2	3	2	7					
Solid waste generation	Operation of the chicken broiler houses will produce solid waste in the form of chicken manure.	Direct	Local	Long term	Low	Low	Definite	Negative (-ve)	Low (-ve)	<ul style="list-style-type: none"> A registered private contractor must collect and remove the chicken litter off site regularly. The chicken manure must be taken to a registered composting facility for safe disposal. 	Very low (-ve)
SCORE			1	2	1	4					
Climate Change: Contribution to Greenhouse Gasses	Operation of the chicken broiler houses will produce solid waste in the form of chicken manure, which will contribute towards GHG emissions. Additionally, heating, lighting and ventilation of the houses which will come from fossil	Direct and Indirect	International	Long term	Low	High	Possible	Negative (-ve)	Medium (-ve)	<ul style="list-style-type: none"> Improve energy efficiency in heating, ventilation and lighting systems. Use renewable energy sources for this such as solar power. Implement sustainable manure management 	Low (-ve)

OPERATIONAL PHASE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
	fuels, will also increase GHG emissions.									techniques such as composting.	
SCORE			3	3	1	7					

Table 2: Pre and post-mitigation impacts for the No-go Alternative for the Proposed Project.

NO-GO ALTERNATIVE											
ASPECT	NATURE OF IMPACT	TYPE OF IMPACT	EXTENT	DURATION	INTENSITY OR SEVERITY	CONSEQUENCE	PROBABILITY	STATUS OF IMPACT	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
Loss of increased food security	The no-go alternative would result in loss of increased food security locally and regionally if the proposed chicken broiler houses are not constructed.	Direct	Regional	Medium term	High	High	Probable	Negative (-ve)	High (-ve)	No mitigation measures would be implemented if the no-go alternative is selected.	High (-ve)
SCORE			2	2	3	7					
Loss of employment opportunity	The no-go alternative would result in no job creation and skill development for the community members.	Indirect	Local	Long term	High	High	Probable	Negative (-ve)	High (-ve)	No mitigation measures would be implemented if the no-go alternative is selected.	High (-ve)
SCORE			1	3	3	7					