

RISK MATRIX (Based on DWS 2015 publication: Section 21 c and I water use Risk Assessment Protocol)

NAME and REGISTRATION No of SACNASP Professional member: AJH Lamprecht Reg no. 115601

Risk to be scored for construction and operational phases of the project. MUST BE COMPLETED BY SACNASP PROFESSIONAL MEMBER REGISTERED IN AN APPROPRIATE FIELD OF EXPERTISE.

No	Phase	Activity	Activity Continued	Aspect	Impact	Severity				
						Flow Regime	Physico & Chemical (Water quality)	Habitat (Geomorph + Vegetation)	Biota	Severity
1	Construction Phase	<p>The project applicant, Quantum Foods, currently operates twelve (12) chicken layer houses at their existing poultry farm, located between the town of Swartkops and the city of Rustenburg, North West Province. The applicant now proposes the expansion of the poultry farm from approximately 30 000 to 60 000 chickens (rounded up), by developing eight (8) additional new layer houses and twenty (20) evaporation ponds. Six (6) of these proposed new layer houses will be constructed directly adjacent to the existing houses, while merely two (2) will be located at a separate location, at the existing facility.</p> <p>The layer houses are deemed to mainly operate as isolated units from their surrounding undeveloped environments and therefore do not result in any significant or continued ecological impacts. In accordance with the information received from the farm manager during the site assessment, the layer houses only get washed out twice annually. This process constitutes the following main two steps:</p> <p>Manure and other undesired waste products are manually, thoroughly cleaned out of the layer houses and then adequately and safely removed from site, by a contracted third party.</p> <p>The floors of the layer houses are then additionally sprayed clean with chemically treated water, with the use of pressure hoses. This is done in order to ensure complete removal and neutralisation of all undesired waste products from the layer houses. In accordance with the information received from the Environmental Assessment Practitioner (EAP), only environmentally friendly biodegradable chemical products are used for this wash-out process.</p>	<p>In accordance with the information received from the EAP, all wash water emanating from these twice-annual layer house wash-out processes, are currently disposed of into the surrounding undeveloped environments. The wash water will however now be sufficiently isolated and channelled towards the proposed evaporation ponds. The purpose of the evaporation ponds will be to ensure adequate containment and subsequent evaporation of all wash water. This will prevent any significant wash water contact with- and potential contamination of the surrounding undeveloped environments.</p> <p>The assessment area falls within the A22D quaternary surface water catchment- and drainage area. The Dwarsspruit flows past directly adjacent north of the assessment area and continues in a north-easterly direction. No other significant watercourses, preferential water flow paths/drainage lines or wetlands were however found to be present within or in close/influential proximity to the assessment area.</p> <p>The majority of the proposed additional new chicken layer houses and evaporation ponds should therefore not pose significant risk to any watercourses. Only the proposed layer house site no 8 and evaporation ponds site no 8 to be situated directly to the south of the Dwarsspruit, could however potentially impact on the Spruit.</p> <p>The specific portion of the Dwarsspruit which flows past the assessment area, scored a moderate Ecological Importance and Sensitivity (EIS) value and is viewed as being of moderately-high conversational significance/value for habitat preservation and ecological functionality persistence in support of the surrounding ecosystem, broader vegetation type, Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as the ecological functionality and integrity of the local and broader quaternary surface water catchment- and drainage area.</p>	Mechanical clearance of vegetation and construction of chicken layer house site no 8 and evaporation ponds site no 8.	<p>Transformation of an aquatic Critical Biodiversity Area (CBA) and Ecological Support Area (ESA), associated with the Dwarsspruit</p> <p>The area directly adjacent to the north of the most northerly situated layer house site no 8 and evaporation ponds site no 8, is categorised as a combination of mainly aquatic Critical Biodiversity Area's one and two (CBA 1 & 2) and to a lesser extent, Ecological Support Area's one and two (ESA 1 & 2). This is in accordance with the North West Biodiversity Spatial Plan 2015 (NWBSPP), which sets out biodiversity priority areas in the province.</p> <p>This relevant combination of CBA and ESA to the north of the layer house and evaporation pond, is mainly associated with the important Dwarsspruit, which flows past directly adjacent north of the assessment area as well as the accompanying ecological corridor, that runs along the Spruit.</p> <p>Due to the presence of the existing chicken layer house directly to the south of the Dwarsspruit, the locations of the proposed additional new layer house no 8 and evaporation pond no 8 as well as the localised surrounding area, have been mechanically cleared of virtually all naturally occurring indigenous vegetation. This cleared area is also continually maintained as such and is therefore virtually devoid of any naturally occurring indigenous vegetation, on a permanent basis. The mechanical clearance associated with the proposed development of the layer house site no 8 and evaporation ponds site no 8, will therefore not result in any further transformation of naturally occurring indigenous vegetation.</p> <p>It must be noted that a portion of this cleared area falls within the relevant combination of Critical Biodiversity Area (CBA) and Ecological Support Area (ESA), associated with the Dwarsspruit as well as the accompanying ecological corridor, that runs along the Spruit.</p>	1	1	2	2	1.50

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2	Construction Phase	<p>The project applicant, Quantum Foods, currently operates twelve (12) chicken layer houses at their existing poultry farm, located between the town of Swartkops and the city of Rustenburg, North West Province. The applicant now proposes the expansion of the poultry farm from approximately 30 000 to 60 000 chickens (rounded up), by developing eight (8) additional new layer houses and twenty (20) evaporation ponds. Six (6) of these proposed new layer houses will be constructed directly adjacent to the existing houses, while merely two (2) will be located at a separate location, at the existing facility.</p> <p>The layer houses are deemed to mainly operate as isolated units from their surrounding undeveloped environments and therefore do not result in any significant or continued ecological impacts. In accordance with the information received from the farm manager during the site assessment, the layer houses only get washed out twice annually. This process constitutes the following main two steps:</p> <p>Manure and other undesired waste products are manually, thoroughly cleaned out of the layer houses and then adequately and safely removed from site, by a contracted third party.</p> <p>The floors of the layer houses are then additionally sprayed clean with chemically treated water, with the use of pressure hoses. This is done in order to ensure complete removal and neutralisation of all undesired waste products from the layer houses. In accordance with the information received from the Environmental Assessment Practitioner (EAP), only environmentally friendly biodegradable chemical products are used for this wash-out process.</p>	<p>In accordance with the information received from the EAP, all wash water emanating from these twice-annual layer house wash-out processes, are currently disposed of into the surrounding undeveloped environments. The wash water will however now be sufficiently isolated and channelled towards the proposed evaporation ponds. The purpose of the evaporation ponds will be to ensure adequate containment and subsequent evaporation of all wash water. This will prevent any significant wash water contact with- and potential contamination of the surrounding undeveloped environments.</p> <p>The assessment area falls within the A22D quaternary surface water catchment- and drainage area. The Dwarsspruit flows past directly adjacent north of the assessment area and continues in a north-easterly direction. No other significant watercourses, preferential water flow paths/drainage lines or wetlands were however found to be present within or in close/influential proximity to the assessment area.</p> <p>The majority of the proposed additional new chicken layer houses and evaporation ponds should therefore not pose significant risk to any watercourses. Only the proposed layer house site no 8 and evaporation ponds site no 8 to be situated directly to the south of the Dwarsspruit, could however potentially impact on the Spruit.</p> <p>The specific portion of the Dwarsspruit which flows past the assessment area, scored a moderate Ecological Importance and Sensitivity (EIS) value and is viewed as being of moderately-high conversational significance/value for habitat preservation and ecological functionality persistence in support of the surrounding ecosystem, broader vegetation type, Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as the ecological functionality and integrity of the local and broader quaternary surface water catchment- and drainage area.</p>	Mechanical clearance of vegetation and construction of chicken layer house site no 8 and evaporation ponds site no 8.	<p>Disturbance of /damage to aquatic and semi-aquatic faunal habitats, associated with the Dwarsspruit</p> <p>In accordance with the Southern African Bird Atlas Project (SABAP) information, no Red Data Listed avifaunal species or any avifaunal species of conservation significance, are necessarily expected to be present throughout the assessment area. The combined aquatic and semi-aquatic habitat of the Dwarsspruit and its associated floodplain and riparian zone, is however highly likely utilised by various common and habitat-specific bird-, small antelope and other mammalian species, for refuge as well as breeding, foraging and/or persistence purposes. This reiterates the conservation importance/significance of the relevant combination of Critical Biodiversity Area (CBA) and Ecological Support Area (ESA), associated with the Dwarsspruit as well as the accompanying ecological corridor, that runs along the Spruit.</p> <p>The chicken layer houses are deemed to mainly operate as isolated units from their surrounding undeveloped environments and therefore do not result in any significant or continued ecological impacts. The mechanical air conditioning and ventilation system of the existing layer house situated directly to the south of the Dwarsspruit, however emits continuous low frequency sound/noise. If layer house site no 8 is to be developed within close proximity to the Dwarsspruit and its associated floodplain and riparian zone, the temporary noise emitted by the construction processes as well as the subsequent continued additional noise emissions of the ventilation system during the operational phase, could potentially cause undesired disturbance and have a negative impact on the habitat-specific faunal species, which utilise the floodplain and riparian zone.</p>	1	1	1	1	1.00

Spatial scale	Duration	Consequence	Frequency of activity	Frequency of impact	Legal Issues	Detection	Likelihood	Significance	Risk Rating	Confidence level	Control Measures	Control Measures Continued	PES & EIS of Watercourse
2	2	5.50	2	2	5	1	10	55	Low	90	<p>It is recommended that the Dwarsspruit and its associated floodplain and riparian zone be adequately buffered out of the proposed development footprint area. A minimum approximately 150 m aquatic ecological buffer distance is recommended to be implemented around the main active streamflow channel of the Dwarsspruit. No current or future development is allowed to take place within the buffered zone.</p> <p>It is further recommended that the continued mechanical/manual vegetation clearance and maintenance of the area situated directly to the south of the Dwarsspruit and associated with the relevant Critical Biodiversity Area two (CBA 2), should be permanently ceased, with immediate effect. The area should be adequately re-vegetated and rehabilitated, as soon as practically possible. A Rehabilitation Management Plan must be compiled by a suitably qualified and experienced ecologist.</p> <p>The proposed development construction footprint must be kept as small as practically possible to reduce the surface impact on surrounding vegetation and no unnecessary/unauthorised footprint expansion into the broader undeveloped landscape surrounding the proposed development footprint, may take place.</p>	<p>No site construction basecamps may be established within the broader undeveloped landscape surrounding the proposed development footprint.</p> <p>Adequately cordon off the proposed development construction footprint area and ensure that no construction activities, - machinery or -equipment operate or impact within the broader undeveloped landscape outside the cordoned off area.</p> <p>Adequate operational procedures for construction machinery and equipment must be developed in order to strictly govern and restrict movement of machinery only within the proposed development construction footprint area and to ensure environmentally responsible construction practices and activities.</p> <p>Disturbed areas within and immediately surrounding the proposed development footprint area, must be adequately rehabilitated as soon as practically possible after construction.</p>	<p>PES = Class B although it borders on Class C, as a result of directly surrounding upstream transformation impacts. The portion is deemed largely natural, while small to moderate changes in the natural habitat and biota have taken place. The ecosystem functionality has however remained essentially unchanged.</p> <p>EIS = C (moderate). Viewed as being ecologically important and sensitive on provincial scale, mainly due to the area forming part of a combination of Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as forming an important part of the local and broader quaternary surface water catchment- and drainage area, towards the north-east. Biodiversity is however still relatively ubiquitous.</p> <p>The specific portion of the Dwarsspruit which flows past the assessment area, is viewed as being of moderately-high conversational significance/value for habitat preservation and ecological functionality persistence in support of the surrounding ecosystem, broader vegetation type, Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as the ecological functionality and -integrity of the local and broader quaternary surface water catchment- and drainage area.</p>

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1	2	4.00	2	1	5	2	10	40	Low	90	<p>It is recommended that the Dwarsspruit and its associated floodplain and riparian zone be adequately buffered out of the proposed development footprint area. A minimum approximately 150 m aquatic ecological buffer distance is recommended to be implemented around the main active streamflow channel of the Dwarsspruit. No current or future development is allowed to take place within the buffered zone.</p> <p>It is further recommended that the continued mechanical/manual vegetation clearance and maintenance of the area situated directly to the south of the Dwarsspruit and associated with the relevant Critical Biodiversity Area two (CBA 2), should be permanently ceased, with immediate effect. The area should be adequately re-vegetated and rehabilitated, as soon as practically possible. A Rehabilitation Management Plan must be compiled by a suitably qualified and experienced ecologist.</p> <p>The proposed development construction footprint must be kept as small as practically possible to reduce the surface impact on surrounding vegetation and no unnecessary/unauthorised footprint expansion into the broader undeveloped landscape surrounding the proposed development footprint, may take place.</p> <p>No site construction basecamps may be established within the broader undeveloped landscape surrounding the proposed development footprint.</p>	<p>Adequately cordon off the proposed development construction footprint area and ensure that no construction activities, - machinery or -equipment operate or impact within the broader undeveloped landscape outside the cordoned off area.</p> <p>Adequate operational procedures for construction machinery and equipment must be developed in order to strictly govern and restrict movement of machinery only within the proposed development construction footprint area and to ensure environmentally responsible construction practices and activities.</p> <p>Disturbed areas within and immediately surrounding the proposed development footprint area, must be adequately rehabilitated as soon as practically possible after construction.</p>	<p>PES = Class B although it borders on Class C, as a result of directly surrounding upstream transformation impacts. The portion is deemed largely natural, while small to moderate changes in the natural habitat and biota have taken place. The ecosystem functionality has however remained essentially unchanged.</p> <p>EIS = C (moderate). Viewed as being ecologically important and sensitive on provincial scale, mainly due to the area forming part of a combination of Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as forming an important part of the local and broader quaternary surface water catchment- and drainage area, towards the north-east. Biodiversity is however still relatively ubiquitous.</p> <p>The specific portion of the Dwarsspruit which flows past the assessment area, is viewed as being of moderately-high conversational significance/value for habitat preservation and ecological functionality persistence in support of the surrounding ecosystem, broader vegetation type, Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as the ecological functionality and -integrity of the local and broader quaternary surface water catchment- and drainage area.</p>

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3	Construction Phase	<p>The project applicant, Quantum Foods, currently operates twelve (12) chicken layer houses at their existing poultry farm, located between the town of Swartkops and the city of Rustenburg, North West Province. The applicant now proposes the expansion of the poultry farm from approximately 30 000 to 60 000 chickens (rounded up), by developing eight (8) additional new layer houses and twenty (20) evaporation ponds. Six (6) of these proposed new layer houses will be constructed directly adjacent to the existing houses, while merely two (2) will be located at a separate location, at the existing facility.</p> <p>The layer houses are deemed to mainly operate as isolated units from their surrounding undeveloped environments and therefore do not result in any significant or continued ecological impacts. In accordance with the information received from the farm manager during the site assessment, the layer houses only get washed out twice annually. This process constitutes the following main two steps:</p> <p>Manure and other undesired waste products are manually, thoroughly cleaned out of the layer houses and then adequately and safely removed from site, by a contracted third party.</p> <p>The floors of the layer houses are then additionally sprayed clean with chemically treated water, with the use of pressure hoses. This is done in order to ensure complete removal and neutralisation of all undesired waste products from the layer houses. In accordance with the information received from the Environmental Assessment Practitioner (EAP), only environmentally friendly biodegradable chemical products are used for this wash-out process.</p>	<p>In accordance with the information received from the EAP, all wash water emanating from these twice-annual layer house wash-out processes, are currently disposed of into the surrounding undeveloped environments. The wash water will however now be sufficiently isolated and channelled towards the proposed evaporation ponds. The purpose of the evaporation ponds will be to ensure adequate containment and subsequent evaporation of all wash water. This will prevent any significant wash water contact with- and potential contamination of the surrounding undeveloped environments.</p> <p>The assessment area falls within the A22D quaternary surface water catchment- and drainage area. The Dwarsspruit flows past directly adjacent north of the assessment area and continues in a north-easterly direction. No other significant watercourses, preferential water flow paths/drainage lines or wetlands were however found to be present within or in close/influential proximity to the assessment area.</p> <p>The majority of the proposed additional new chicken layer houses and evaporation ponds should therefore not pose significant risk to any watercourses. Only the proposed layer house site no 8 and evaporation ponds site no 8 to be situated directly to the south of the Dwarsspruit, could however potentially impact on the Spruit.</p> <p>The specific portion of the Dwarsspruit which flows past the assessment area, scored a moderate Ecological Importance and Sensitivity (EIS) value and is viewed as being of moderately-high conversational significance/value for habitat preservation and ecological functionality persistence in support of the surrounding ecosystem, broader vegetation type, Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as the ecological functionality and integrity of the local and broader quaternary surface water catchment- and drainage area.</p>	Mechanical clearance of vegetation and construction of chicken layer house site no 8 and evaporation ponds site no 8.	<p>Terrestrial and aquatic alien invasive species establishment within the Dwarsspruit</p> <p>At the time of the site assessment, no significant legally declared alien invasive species establishments were found to be present throughout the specific portion of the Dwarsspruit, which flows past the assessment area or within the cleared area surrounding the layer house site no 8 and evaporation ponds site no 8 locations.</p> <p>The legally declared invasive species <i>Opuntia ficus-indica</i> (Category 1b) was merely found to be very sparsely present throughout the surrounding floodplain and riparian zone of the Dwarsspruit.</p> <p>The proposed development area could however potentially be prone to slight alien invasive species establishment, due to surface disturbance and vegetation clearance caused by construction activities. The presence of the Dwarsspruit directly adjacent north of the assessment area, could further also potentially act as a significant transport/distribution vector for numerous terrestrial and aquatic alien invasive species into the broader region.</p>	1	1	1	1	1.00

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4	Construction Phase	<p>The project applicant, Quantum Foods, currently operates twelve (12) chicken layer houses at their existing poultry farm, located between the town of Swartkops and the city of Rustenburg, North West Province. The applicant now proposes the expansion of the poultry farm from approximately 30 000 to 60 000 chickens (rounded up), by developing eight (8) additional new layer houses and twenty (20) evaporation ponds. Six (6) of these proposed new layer houses will be constructed directly adjacent to the existing houses, while merely two (2) will be located at a separate location, at the existing facility.</p> <p>The layer houses are deemed to mainly operate as isolated units from their surrounding undeveloped environments and therefore do not result in any significant or continued ecological impacts. In accordance with the information received from the farm manager during the site assessment, the layer houses only get washed out twice annually. This process constitutes the following main two steps:</p> <p>Manure and other undesired waste products are manually, thoroughly cleaned out of the layer houses and then adequately and safely removed from site, by a contracted third party.</p> <p>The floors of the layer houses are then additionally sprayed clean with chemically treated water, with the use of pressure hoses. This is done in order to ensure complete removal and neutralisation of all undesired waste products from the layer houses. In accordance with the information received from the Environmental Assessment Practitioner (EAP), only environmentally friendly biodegradable chemical products are used for this wash-out process.</p>	<p>In accordance with the information received from the EAP, all wash water emanating from these twice-annual layer house wash-out processes, are currently disposed of into the surrounding undeveloped environments. The wash water will however now be sufficiently isolated and channelled towards the proposed evaporation ponds. The purpose of the evaporation ponds will be to ensure adequate containment and subsequent evaporation of all wash water. This will prevent any significant wash water contact with- and potential contamination of the surrounding undeveloped environments.</p> <p>The assessment area falls within the A22D quaternary surface water catchment- and drainage area. The Dwarsspruit flows past directly adjacent north of the assessment area and continues in a north-easterly direction. No other significant watercourses, preferential water flow paths/drainage lines or wetlands were however found to be present within or in close/influential proximity to the assessment area.</p> <p>The majority of the proposed additional new chicken layer houses and evaporation ponds should therefore not pose significant risk to any watercourses. Only the proposed layer house site no 8 and evaporation ponds site no 8 to be situated directly to the south of the Dwarsspruit, could however potentially impact on the Spruit.</p> <p>The specific portion of the Dwarsspruit which flows past the assessment area, scored a moderate Ecological Importance and Sensitivity (EIS) value and is viewed as being of moderately-high conversational significance/value for habitat preservation and ecological functionality persistence in support of the surrounding ecosystem, broader vegetation type, Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as the ecological functionality and integrity of the local and broader quaternary surface water catchment- and drainage area.</p>	Mechanical clearance of vegetation and construction of chicken layer house site no 8 and evaporation ponds site no 8.	<p>Contamination of the Dwarsspruit by surface material erosion</p> <p>The proposed development area of the additional new layer house site no 8 and evaporation ponds site no 8 constitutes a slightly sloping landscape to the north, towards the Dwarsspruit. The area could therefore potentially be prone to slight surface soil erosion, due to the loosening of materials and clearance of vegetation caused by construction activities, which usually binds surface material.</p> <p>If layer house site no 8 and evaporation ponds site no 8 are to be developed within close proximity to the Dwarsspruit and its associated floodplain and riparian zone, the potential surface soil erosion could result in contamination of the Spruit, due to dirty erosion water runoff during rainfall events.</p>	1	1	1	1	1.00

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1	2	4.00	2	1	5	1	9	36	Low	90	<p>It is recommended that the Dwarsspruit and its associated floodplain and riparian zone be adequately buffered out of the proposed development footprint area. A minimum approximately 150 m aquatic ecological buffer distance is recommended to be implemented around the main active streamflow channel of the Dwarsspruit. No current or future development is allowed to take place within the buffered zone.</p> <p>It is further recommended that the continued mechanical/manual vegetation clearance and maintenance of the area situated directly to the south of the Dwarsspruit and associated with the relevant Critical Biodiversity Area two (CBA 2), should be permanently ceased, with immediate effect. The area should be adequately re-vegetated and rehabilitated, as soon as practically possible. A Rehabilitation Management Plan must be compiled by a suitably qualified and experienced ecologist.</p> <p>It is recommended that all individuals of the identified alien invasive species must be actively eradicated from the Dwarsspruit, in accordance with the National Environmental Management: Biodiversity Act (Act 10 of 2004); Alien and Invasive Species Regulations, 2014. Removed materials must also be adequately disposed of.</p>	<p>Implement an adequate Alien Invasive Species Management Plan during the construction and operational phases. Such a Management Plan must be compiled by a suitably qualified and experienced ecologist.</p> <p>Disturbed areas within and immediately surrounding the proposed development footprint area, must be adequately rehabilitated as soon as practically possible after construction.</p>	<p>PES = Class B although it borders on Class C, as a result of directly surrounding upstream transformation impacts. The portion is deemed largely natural, while small to moderate changes in the natural habitat and biota have taken place. The ecosystem functionality has however remained essentially unchanged.</p> <p>EIS = C (moderate). Viewed as being ecologically important and sensitive on provincial scale, mainly due to the area forming part of a combination of Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as forming an important part of the local and broader quaternary surface water catchment- and drainage area, towards the north-east. Biodiversity is however still relatively ubiquitous.</p> <p>The specific portion of the Dwarsspruit which flows past the assessment area, is viewed as being of moderately-high conversational significance/value for habitat preservation and ecological functionality persistence in support of the surrounding ecosystem, broader vegetation type, Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as the ecological functionality and -integrity of the local and broader quaternary surface water catchment- and drainage area.</p>

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2	2	5.00	2	1	5	2	10	50	Low	90	<p>Implement an adequate Stormwater and Erosion Management Plan during the construction phase of the proposed development, to sufficiently manage storm water runoff and clean/dirty water separation on site. This must be done in order to prevent any significant soil erosion in and around the assessment area and subsequently prevent any significant contamination of the Dwarsspruit.</p> <p>It is further recommended that small temporary stormwater cut-off berms/trenches be constructed directly adjacent around the upstream sides of the proposed layer house site no 8 and evaporation ponds site no 8 construction footprints. These cut-off berms/trenches must assist with clean/dirty water separation during the construction phase, by diverting and channelling clean surface water runoff from the south, around the construction footprints, towards the Dwarsspruit.</p> <p>It is recommended that the Dwarsspruit and its associated floodplain and riparian zone be adequately buffered out of the proposed development footprint area. A minimum approximately 150 m aquatic ecological buffer distance is recommended to be implemented around the main active streamflow channel of the Dwarsspruit. No current or future development is allowed to take place within the buffered zone.</p>	<p>It is further recommended that the continued mechanical/manual vegetation clearance and maintenance of the area situated directly to the south of the Dwarsspruit and associated with the relevant Critical Biodiversity Area two (CBA 2), should be permanently ceased, with immediate effect. The area should be adequately re-vegetated and rehabilitated, as soon as practically possible. A Rehabilitation Management Plan must be compiled by a suitably qualified and experienced ecologist.</p> <p>Disturbed areas within and immediately surrounding the proposed development footprint area, must be adequately rehabilitated as soon as practically possible after construction.</p>	<p>PES = Class B although it borders on Class C, as a result of directly surrounding upstream transformation impacts. The portion is deemed largely natural, while small to moderate changes in the natural habitat and biota have taken place. The ecosystem functionality has however remained essentially unchanged.</p> <p>EIS = C (moderate). Viewed as being ecologically important and sensitive on provincial scale, mainly due to the area forming part of a combination of Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as forming an important part of the local and broader quaternary surface water catchment- and drainage area, towards the north-east. Biodiversity is however still relatively ubiquitous.</p> <p>The specific portion of the Dwarsspruit which flows past the assessment area, is viewed as being of moderately-high conversational significance/value for habitat preservation and ecological functionality persistence in support of the surrounding ecosystem, broader vegetation type, Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as the ecological functionality and -integrity of the local and broader quaternary surface water catchment- and drainage area.</p>

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5	Construction Phase	<p>The project applicant, Quantum Foods, currently operates twelve (12) chicken layer houses at their existing poultry farm, located between the town of Swartruggens and the city of Rustenburg, North West Province. The applicant now proposes the expansion of the poultry farm from approximately 30 000 to 60 000 chickens (rounded up), by developing eight (8) additional new layer houses and twenty (20) evaporation ponds. Six (6) of these proposed new layer houses will be constructed directly adjacent to the existing houses, while merely two (2) will be located at a separate location, at the existing facility.</p> <p>The layer houses are deemed to mainly operate as isolated units from their surrounding undeveloped environments and therefore do not result in any significant or continued ecological impacts. In accordance with the information received from the farm manager during the site assessment, the layer houses only get washed out twice annually. This process constitutes the following main two steps:</p> <p>Manure and other undesired waste products are manually, thoroughly cleaned out of the layer houses and then adequately and safely removed from site, by a contracted third party.</p> <p>The floors of the layer houses are then additionally sprayed clean with chemically treated water, with the use of pressure hoses. This is done in order to ensure complete removal and neutralisation of all undesired waste products from the layer houses. In accordance with the information received from the Environmental Assessment Practitioner (EAP), only environmentally friendly biodegradable chemical products are used for this wash-out process.</p>	<p>In accordance with the information received from the EAP, all wash water emanating from these twice-annual layer house wash-out processes, are currently disposed of into the surrounding undeveloped environments. The wash water will however now be sufficiently isolated and channelled towards the proposed evaporation ponds. The purpose of the evaporation ponds will be to ensure adequate containment and subsequent evaporation of all wash water. This will prevent any significant wash water contact with- and potential contamination of the surrounding undeveloped environments.</p> <p>The assessment area falls within the A22D quaternary surface water catchment- and drainage area. The Dwarsspruit flows past directly adjacent north of the assessment area and continues in a north-easterly direction. No other significant watercourses, preferential water flow paths/drainage lines or wetlands were however found to be present within or in close/influential proximity to the assessment area.</p> <p>The majority of the proposed additional new chicken layer houses and evaporation ponds should therefore not pose significant risk to any watercourses. Only the proposed layer house site no 8 and evaporation ponds site no 8 to be situated directly to the south of the Dwarsspruit, could however potentially impact on the Spruit.</p> <p>The specific portion of the Dwarsspruit which flows past the assessment area, scored a moderate Ecological Importance and Sensitivity (EIS) value and is viewed as being of moderately-high conversational significance/value for habitat preservation and ecological functionality persistence in support of the surrounding ecosystem, broader vegetation type, Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as the ecological functionality and - integrity of the local and broader quaternary surface water catchment- and drainage area.</p>	Mechanical clearance of vegetation and construction of chicken layer house site no 8 and evaporation ponds site no 8.	<p>Contamination of the Dwarsspruit by dust generation and emissions</p> <p>The construction activities associated with the proposed development, could potentially result in slight fugitive dust emissions, due to vegetation clearance and movement of machinery and equipment. Generated dust could potentially spread into the surrounding undeveloped landscape and contaminate the Dwarsspruit.</p>	1	1	1	1	1.00

No	Phase	Activity	Activity Continued	Aspect	Impact	Severity				
						Flow Regime	Physico & Chemical (Water quality)	Habitat (Geomorph + Vegetation)	Biota	Severity
6	Construction Phase	<p>The project applicant, Quantum Foods, currently operates twelve (12) chicken layer houses at their existing poultry farm, located between the town of Swartruggens and the city of Rustenburg, North West Province. The applicant now proposes the expansion of the poultry farm from approximately 30 000 to 60 000 chickens (rounded up), by developing eight (8) additional new layer houses and twenty (20) evaporation ponds. Six (6) of these proposed new layer houses will be constructed directly adjacent to the existing houses, while merely two (2) will be located at a separate location, at the existing facility.</p> <p>The layer houses are deemed to mainly operate as isolated units from their surrounding undeveloped environments and therefore do not result in any significant or continued ecological impacts. In accordance with the information received from the farm manager during the site assessment, the layer houses only get washed out twice annually. This process constitutes the following main two steps:</p> <p>Manure and other undesired waste products are manually, thoroughly cleaned out of the layer houses and then adequately and safely removed from site, by a contracted third party.</p> <p>The floors of the layer houses are then additionally sprayed clean with chemically treated water, with the use of pressure hoses. This is done in order to ensure complete removal and neutralisation of all undesired waste products from the layer houses. In accordance with the information received from the Environmental Assessment Practitioner (EAP), only environmentally friendly biodegradable chemical products are used for this wash-out process.</p>	<p>In accordance with the information received from the EAP, all wash water emanating from these twice-annual layer house wash-out processes, are currently disposed of into the surrounding undeveloped environments. The wash water will however now be sufficiently isolated and channelled towards the proposed evaporation ponds. The purpose of the evaporation ponds will be to ensure adequate containment and subsequent evaporation of all wash water. This will prevent any significant wash water contact with- and potential contamination of the surrounding undeveloped environments.</p> <p>The assessment area falls within the A22D quaternary surface water catchment- and drainage area. The Dwarsspruit flows past directly adjacent north of the assessment area and continues in a north-easterly direction. No other significant watercourses, preferential water flow paths/drainage lines or wetlands were however found to be present within or in close/influential proximity to the assessment area.</p> <p>The majority of the proposed additional new chicken layer houses and evaporation ponds should therefore not pose significant risk to any watercourses. Only the proposed layer house site no 8 and evaporation ponds site no 8 to be situated directly to the south of the Dwarsspruit, could however potentially impact on the Spruit.</p> <p>The specific portion of the Dwarsspruit which flows past the assessment area, scored a moderate Ecological Importance and Sensitivity (EIS) value and is viewed as being of moderately-high conversational significance/value for habitat preservation and ecological functionality persistence in support of the surrounding ecosystem, broader vegetation type, Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as the ecological functionality and - integrity of the local and broader quaternary surface water catchment- and drainage area.</p>	Mechanical clearance of vegetation and construction of chicken layer house site no 8 and evaporation ponds site no 8.	<p>Impeding and contamination of the flow regime of the Dwarsspruit, within the associated local and broader quaternary surface water catchment- and drainage area</p> <p>The assessment area falls within the A22D quaternary surface water catchment- and drainage area. It is evident from a hydrological and ecological perspective, that the Dwarsspruit forms an important part of the local and broader quaternary surface water catchment- and drainage area, towards the north-east.</p> <p>The activities associated with the construction phase could potentially result in slight impeding of natural surface water flow towards the Dwarsspruit, within the associated local and broader quaternary surface water catchment- and drainage area, due to artificial obstruction of flow during rainfall events. The construction phase could potentially also result in contamination of natural surface water flow within the associated local and broader quaternary surface water catchment- and drainage area, due to hydrocarbon and/or other chemical spills by construction machinery and equipment.</p>	1	1	1	1	1.00

Spatial scale	Duration	Consequence	Frequency of activity	Frequency of impact	Legal Issues	Detection	Likelihood	Significance	Risk Rating	Confidence level	Control Measures	Control Measures Continued	PES & EIS of Watercourse
2	2	5.00	2	1	5	2	10	50	Low	90	<p>Implement suitable dust management and prevention measures during the construction phase of the proposed development.</p> <p>Construction areas and –roads to be sufficiently wetted down during the construction phase, in order to prevent significant fugitive dust emissions.</p> <p>Adequate operational procedures for machinery and equipment must be developed to strictly govern and restrict movement of machinery, in order to avoid unnecessary fugitive dust emissions and ensure environmentally responsible construction practices and activities.</p> <p>It is recommended that the Dwarsspruit and its associated floodplain and riparian zone be adequately buffered out of the proposed development footprint area. A minimum approximately 150 m aquatic ecological buffer distance is recommended to be implemented around the main active streamflow channel of the Dwarsspruit. No current or future development is allowed to take place within the buffered zone.</p>	<p>It is further recommended that the continued mechanical/manual vegetation clearance and maintenance of the area situated directly to the south of the Dwarsspruit and associated with the relevant Critical Biodiversity Area two (CBA 2), should be permanently ceased, with immediate effect. The area should be adequately re-vegetated and rehabilitated, as soon as practicably possible. A Rehabilitation Management Plan must be compiled by a suitably qualified and experienced ecologist.</p> <p>Disturbed areas within and immediately surrounding the proposed development footprint area, must be adequately rehabilitated as soon as practicably possible after construction.</p>	<p>PES = Class B although it borders on Class C, as a result of directly surrounding upstream transformation impacts. The portion is deemed largely natural, while small to moderate changes in the natural habitat and biota have taken place. The ecosystem functionality has however remained essentially unchanged.</p> <p>EIS = C (moderate). Viewed as being ecologically important and sensitive on provincial scale, mainly due to the area forming part of a combination of Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as forming an important part of the local and broader quaternary surface water catchment- and drainage area, towards the north-east. Biodiversity is however still relatively ubiquitous.</p> <p>The specific portion of the Dwarsspruit which flows past the assessment area, is viewed as being of moderately-high conversational significance/value for habitat preservation and ecological functionality persistence in support of the surrounding ecosystem, broader vegetation type, Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as the ecological functionality and -integrity of the local and broader quaternary surface water catchment- and drainage area.</p>

Spatial scale	Duration	Consequence	Frequency of activity	Frequency of impact	Legal Issues	Detection	Likelihood	Significance	Risk Rating	Confidence level	Control Measures	Control Measures Continued	PES & EIS of Watercourse
2	2	5.00	2	1	5	3	11	55	Low	90	<p>Implement an adequate Stormwater and Erosion Management Plan during the construction phase of the proposed development, to sufficiently manage storm water runoff and clean/dirty water separation on site. This must be done in order to prevent any significant soil erosion in and around the assessment area and subsequently prevent any significant contamination of the Dwarsspruit.</p> <p>It is further recommended that small temporary stormwater cut-off berms/trenches be constructed directly adjacent around the upstream sides of the proposed layer house site no 8 and evaporation ponds site no 8 construction footprints. These cut-off berms/trenches must assist with clean/dirty water separation during the construction phase, by diverting and channelling clean surface water runoff from the south, around the construction footprints, towards the Dwarsspruit.</p> <p>It is recommended that the Dwarsspruit and its associated floodplain and riparian zone be adequately buffered out of the proposed development footprint area. A minimum approximately 150 m aquatic ecological buffer distance is recommended to be implemented around the main active streamflow channel of the Dwarsspruit. No current or future development is allowed to take place within the buffered zone.</p>	<p>It is further recommended that the continued mechanical/manual vegetation clearance and maintenance of the area situated directly to the south of the Dwarsspruit and associated with the relevant Critical Biodiversity Area two (CBA 2), should be permanently ceased, with immediate effect. The area should be adequately re-vegetated and rehabilitated, as soon as practicably possible. A Rehabilitation Management Plan must be compiled by a suitably qualified and experienced ecologist.</p> <p>Disturbed areas within and immediately surrounding the proposed development footprint area, must be adequately rehabilitated as soon as practicably possible after construction.</p> <p>If hydrocarbons or other chemicals are to be stored on site during the construction phase, the storage areas must be situated as far away as practicably possible from the Dwarsspruit.</p> <p>Hydrocarbon and other chemical storage areas must be adequately banded in order to be able to contain a minimum of 150 % of the capacity of storage tanks/units.</p> <p>Adequate hydrocarbon and other chemical storage, handling, usage and spillage clean-up procedures must be developed and all relevant construction personnel must be sufficiently trained on- and apply these procedures during the entire construction phase.</p> <p>Spill kits must be readily available on the construction site. All employees must be adequately trained on the correct procedure and use of the spill kits.</p>	<p>PES = Class B although it borders on Class C, as a result of directly surrounding upstream transformation impacts. The portion is deemed largely natural, while small to moderate changes in the natural habitat and biota have taken place. The ecosystem functionality has however remained essentially unchanged.</p> <p>EIS = C (moderate). Viewed as being ecologically important and sensitive on provincial scale, mainly due to the area forming part of a combination of Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as forming an important part of the local and broader quaternary surface water catchment- and drainage area, towards the north-east. Biodiversity is however still relatively ubiquitous.</p> <p>The specific portion of the Dwarsspruit which flows past the assessment area, is viewed as being of moderately-high conversational significance/value for habitat preservation and ecological functionality persistence in support of the surrounding ecosystem, broader vegetation type, Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as the ecological functionality and -integrity of the local and broader quaternary surface water catchment- and drainage area.</p>

No	Phase	Activity	Activity Continued	Aspect	Impact	Severity				
						Flow Regime	Physico & Chemical (Water quality)	Habitat (Geomorph + Vegetation)	Biota	Severity
7	Operational Phase	<p>The project applicant, Quantum Foods, currently operates twelve (12) chicken layer houses at their existing poultry farm, located between the town of Swartruggens and the city of Rustenburg, North West Province. The applicant now proposes the expansion of the poultry farm from approximately 30 000 to 60 000 chickens (rounded up), by developing eight (8) additional new layer houses and twenty (20) evaporation ponds. Six (6) of these proposed new layer houses will be constructed directly adjacent to the existing houses, while merely two (2) will be located at a separate location, at the existing facility.</p> <p>The layer houses are deemed to mainly operate as isolated units from their surrounding undeveloped environments and therefore do not result in any significant or continued ecological impacts. In accordance with the information received from the farm manager during the site assessment, the layer houses only get washed out twice annually. This process constitutes the following main two steps:</p> <p>Manure and other undesired waste products are manually, thoroughly cleaned out of the layer houses and then adequately and safely removed from site, by a contracted third party.</p> <p>The floors of the layer houses are then additionally sprayed clean with chemically treated water, with the use of pressure hoses. This is done in order to ensure complete removal and neutralisation of all undesired waste products from the layer houses. In accordance with the information received from the Environmental Assessment Practitioner (EAP), only environmentally friendly biodegradable chemical products are used for this wash-out process.</p>	<p>In accordance with the information received from the EAP, all wash water emanating from these twice-annual layer house wash-out processes, are currently disposed of into the surrounding undeveloped environments. The wash water will however now be sufficiently isolated and channelled towards the proposed evaporation ponds. The purpose of the evaporation ponds will be to ensure adequate containment and subsequent evaporation of all wash water. This will prevent any significant wash water contact with- and potential contamination of the surrounding undeveloped environments.</p> <p>The assessment area falls within the A22D quaternary surface water catchment- and drainage area. The Dwarsspruit flows past directly adjacent north of the assessment area and continues in a north-easterly direction. No other significant watercourses, preferential water flow paths/drainage lines or wetlands were however found to be present within or in close/influential proximity to the assessment area.</p> <p>The majority of the proposed additional new chicken layer houses and evaporation ponds should therefore not pose significant risk to any watercourses. Only the proposed layer house site no 8 and evaporation ponds site no 8 to be situated directly to the south of the Dwarsspruit, could however potentially impact on the Spruit.</p> <p>The specific portion of the Dwarsspruit which flows past the assessment area, scored a moderate Ecological Importance and Sensitivity (EIS) value and is viewed as being of moderately-high conversational significance/value for habitat preservation and ecological functionality persistence in support of the surrounding ecosystem, broader vegetation type, Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as the ecological functionality and - integrity of the local and broader quaternary surface water catchment- and drainage area.</p>	Operation of the established chicken layer house site no 8 and evaporation ponds site no 8.	<p>Contamination/eutrophication of the Dwarsspruit by wash water from the layer house site no 8 wash-out process, within the associated local and broader quaternary surface water catchment- and drainage area</p> <p>In accordance with the information received from the farm manager during the site assessment, the layer houses only get washed out twice annually. In accordance with the information received from the EAP, all wash water emanating from these twice-annual layer house wash-out processes, are currently disposed of into the surrounding undeveloped environments. The wash water will however now be sufficiently isolated and channelled towards the proposed evaporation ponds. The purpose of the evaporation ponds will be to ensure adequate containment and subsequent evaporation of all wash water. This will prevent any significant wash water contact with- and potential contamination of the surrounding undeveloped environments.</p> <p>It is presumed and reasonably expected that the design specifications and size parameters of the proposed evaporation ponds will ensure adequate containment and subsequent evaporation of the required maximum potential volumes of wash water twice annually, even during significant rainfall events. Under no circumstances may overflow or spillage of wash water and subsequent potential contamination of the surrounding undeveloped environment and Dwarsspruit, take place.</p>	1	1	1	1	1.00

No	Phase	Activity	Activity Continued	Aspect	Impact	Severity				
						Flow Regime	Physico & Chemical (Water quality)	Habitat (Geomorph + Vegetation)	Biota	Severity
8	Operational Phase	<p>The project applicant, Quantum Foods, currently operates twelve (12) chicken layer houses at their existing poultry farm, located between the town of Swartruggens and the city of Rustenburg, North West Province. The applicant now proposes the expansion of the poultry farm from approximately 30 000 to 60 000 chickens (rounded up), by developing eight (8) additional new layer houses and twenty (20) evaporation ponds. Six (6) of these proposed new layer houses will be constructed directly adjacent to the existing houses, while merely two (2) will be located at a separate location, at the existing facility.</p> <p>The layer houses are deemed to mainly operate as isolated units from their surrounding undeveloped environments and therefore do not result in any significant or continued ecological impacts. In accordance with the information received from the farm manager during the site assessment, the layer houses only get washed out twice annually. This process constitutes the following main two steps:</p> <p>Manure and other undesired waste products are manually, thoroughly cleaned out of the layer houses and then adequately and safely removed from site, by a contracted third party.</p> <p>The floors of the layer houses are then additionally sprayed clean with chemically treated water, with the use of pressure hoses. This is done in order to ensure complete removal and neutralisation of all undesired waste products from the layer houses. In accordance with the information received from the Environmental Assessment Practitioner (EAP), only environmentally friendly biodegradable chemical products are used for this wash-out process.</p>	<p>In accordance with the information received from the EAP, all wash water emanating from these twice-annual layer house wash-out processes, are currently disposed of into the surrounding undeveloped environments. The wash water will however now be sufficiently isolated and channelled towards the proposed evaporation ponds. The purpose of the evaporation ponds will be to ensure adequate containment and subsequent evaporation of all wash water. This will prevent any significant wash water contact with- and potential contamination of the surrounding undeveloped environments.</p> <p>The assessment area falls within the A22D quaternary surface water catchment- and drainage area. The Dwarsspruit flows past directly adjacent north of the assessment area and continues in a north-easterly direction. No other significant watercourses, preferential water flow paths/drainage lines or wetlands were however found to be present within or in close/influential proximity to the assessment area.</p> <p>The majority of the proposed additional new chicken layer houses and evaporation ponds should therefore not pose significant risk to any watercourses. Only the proposed layer house site no 8 and evaporation ponds site no 8 to be situated directly to the south of the Dwarsspruit, could however potentially impact on the Spruit.</p> <p>The specific portion of the Dwarsspruit which flows past the assessment area, scored a moderate Ecological Importance and Sensitivity (EIS) value and is viewed as being of moderately-high conversational significance/value for habitat preservation and ecological functionality persistence in support of the surrounding ecosystem, broader vegetation type, Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as the ecological functionality and - integrity of the local and broader quaternary surface water catchment- and drainage area.</p>	Operation of the established twenty (20) chicken layer houses and twenty (20) evaporation ponds.	<p>Contamination/eutrophication of groundwater by wash water from the twenty (20) chicken layer houses wash-out processes</p> <p>Continued containment and subsequent evaporation of wash water within the evaporation ponds during the twice annual layer house wash-out processes, will likely result in significant long-term leaching and infiltration of salts, chemicals and other inorganic elements into the soil and groundwater. This will potentially alter and negatively affect the quality/characteristics of groundwater over time. This will constitute a long-term effect, which will gradually commence during the operational phase and will continue for the entire duration of the proposed developments' lifespan and significantly beyond.</p>	1	1	1	1	1.00

Spatial scale	Duration	Consequence	Frequency of activity	Frequency of impact	Legal Issues	Detection	Likelihood	Significance	Risk Rating	Confidence level	Control Measures	Control Measures Continued	PES & EIS of Watercourse
2	2	5.00	2	1	5	3	11	55	Low	90	<p>It is presumed and reasonably expected that the design specifications and size parameters of the proposed evaporation ponds will ensure adequate containment and subsequent evaporation of the required maximum potential volumes of wash water twice annually, even during significant rainfall events. Under no circumstances may overflow or spillage of wash water and subsequent potential contamination of the surrounding undeveloped environment and Dwarsspruit, take place.</p> <p>All the recommended mitigation measures for the construction phase must be adequately implemented and managed.</p> <p>The recommended buffer zone must be adequately maintained and no current or future development is allowed to encroach into the buffered zones over time.</p>	N/A	<p>PES = Class B although it borders on Class C, as a result of directly surrounding upstream transformation impacts. The portion is deemed largely natural, while small to moderate changes in the natural habitat and biota have taken place. The ecosystem functionality has however remained essentially unchanged.</p> <p>EIS = C (moderate). Viewed as being ecologically important and sensitive on provincial scale, mainly due to the area forming part of a combination of Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as forming an important part of the local and broader quaternary surface water catchment- and drainage area, towards the north-east. Biodiversity is however still relatively ubiquitous.</p> <p>The specific portion of the Dwarsspruit which flows past the assessment area, is viewed as being of moderately-high conversational significance/value for habitat preservation and ecological functionality persistence in support of the surrounding ecosystem, broader vegetation type, Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as the ecological functionality and -integrity of the local and broader quaternary surface water catchment- and drainage area.</p>

Spatial scale	Duration	Consequence	Frequency of activity	Frequency of impact	Legal Issues	Detection	Likelihood	Significance	Risk Rating	Confidence level	Control Measures	Control Measures Continued	PES & EIS of Watercourse
2	2	5.00	2	1	5	3	11	55	Low	90	<p>The proposed evaporation ponds must be sufficiently lined, in accordance with the relevant minimum norms and standards, in order to prevent undesired seepages or leaks into the groundwater.</p> <p>The integrity of the lining must be re-evaluated and maintained annually in order to ensure its continued functionality.</p> <p>Adequate leakage detection and prevention systems must be installed in order to detect any potential leakages and subsequent contamination of groundwater.</p> <p>It is presumed and reasonably expected that the design specifications and size parameters of the proposed evaporation ponds will ensure adequate containment and subsequent evaporation of the required maximum potential volumes of wash water twice annually, even during significant rainfall events. Under no circumstances may overflow or spillage of wash water and subsequent potential contamination of the surrounding undeveloped environment and Dwarsspruit, take place.</p>	N/A	<p>PES = Class B although it borders on Class C, as a result of directly surrounding upstream transformation impacts. The portion is deemed largely natural, while small to moderate changes in the natural habitat and biota have taken place. The ecosystem functionality has however remained essentially unchanged.</p> <p>EIS = C (moderate). Viewed as being ecologically important and sensitive on provincial scale, mainly due to the area forming part of a combination of Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as forming an important part of the local and broader quaternary surface water catchment- and drainage area, towards the north-east. Biodiversity is however still relatively ubiquitous.</p> <p>The specific portion of the Dwarsspruit which flows past the assessment area, is viewed as being of moderately-high conversational significance/value for habitat preservation and ecological functionality persistence in support of the surrounding ecosystem, broader vegetation type, Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as the ecological functionality and -integrity of the local and broader quaternary surface water catchment- and drainage area.</p>

						Severity				
9	Operational Phase	<p>The project applicant, Quantum Foods, currently operates twelve (12) chicken layer houses at their existing poultry farm, located between the town of Swartkops and the city of Rustenburg, North West Province. The applicant now proposes the expansion of the poultry farm from approximately 30 000 to 60 000 chickens (rounded up), by developing eight (8) additional new layer houses and twenty (20) evaporation ponds. Six (6) of these proposed new layer houses will be constructed directly adjacent to the existing houses, while merely two (2) will be located at a separate location, at the existing facility.</p> <p>The layer houses are deemed to mainly operate as isolated units from their surrounding undeveloped environments and therefore do not result in any significant or continued ecological impacts. In accordance with the information received from the farm manager during the site assessment, the layer houses only get washed out twice annually. This process constitutes the following main two steps:</p> <p>Manure and other undesired waste products are manually, thoroughly cleaned out of the layer houses and then adequately and safely removed from site, by a contracted third party.</p> <p>The floors of the layer houses are then additionally sprayed clean with chemically treated water, with the use of pressure hoses. This is done in order to ensure complete removal and neutralisation of all undesired waste products from the layer houses. In accordance with the information received from the Environmental Assessment Practitioner (EAP), only environmentally friendly biodegradable chemical products are used for this wash-out process.</p>	<p>In accordance with the information received from the EAP, all wash water emanating from these twice-annual layer house wash-out processes, are currently disposed of into the surrounding undeveloped environments. The wash water will however now be sufficiently isolated and channelled towards the proposed evaporation ponds. The purpose of the evaporation ponds will be to ensure adequate containment and subsequent evaporation of all wash water. This will prevent any significant wash water contact with- and potential contamination of the surrounding undeveloped environments.</p> <p>The assessment area falls within the A220 quaternary surface water catchment- and drainage area. The Dwarspruit flows past directly adjacent north of the assessment area and continues in a north-easterly direction. No other significant watercourses, preferential water flow paths/drainage lines or wetlands were however found to be present within or in close/influential proximity to the assessment area.</p> <p>The majority of the proposed additional new chicken layer houses and evaporation ponds should therefore not pose significant risk to any watercourses. Only the proposed layer house site no 8 and evaporation ponds site no 8 to be situated directly to the south of the Dwarspruit, could however potentially impact on the Spruit.</p> <p>The specific portion of the Dwarspruit which flows past the assessment area, scored a moderate Ecological Importance and Sensitivity (EIS) value and is viewed as being of moderately-high conversational significance/value for habitat preservation and ecological functionality persistence in support of the surrounding ecosystem, broader vegetation type, Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as the ecological functionality and - integrity of the local and broader quaternary surface water catchment- and drainage area.</p>	Operation of the established twenty (20) chicken layer houses and twenty (20) evaporation ponds.	<p>Over-extraction of groundwater from the three boreholes</p> <p>The water sources currently used on site, constitute three (3) boreholes that supply approximately 228 742.31 m³/month. The three (3) water reservoirs currently present on site, have a capacity of approximately 100 000 litres. The quantities of water which will be required on site and subsequently extracted from the boreholes, will increase significantly as a result of the development of the proposed eight (8) additional new chicken layer houses. This could potentially lead to over-extraction from the boreholes, if not adequately managed.</p> <p>In accordance with the information received from the EAP, the sustainable yields of the boreholes will be able to adequately and sustainably supply the required volumes of water on site.</p> <p>The significance of this potential impact will be zero.</p>	0	0	0	0	0.00

AJH Lamprecht (Pr.Sci.Nat.)
SACNASP: Professional Ecological Scientist (No 115601)



0	0	0.00	0	0	0	0	0	0	0	0	90	<p>A Water Use License Application (WULA) must be submitted to the Department of Water and Sanitation, in accordance with the National Water Act (Act 36 of 1998).</p> <p>Only the allotted water quantities as per the approved Water Use License are to be extracted.</p> <p>Flow meters must be installed in order to enable monitoring and management of water consumption.</p> <p>Water consumption figures must be submitted to the Department of Water and Sanitation (DWS) on a regular basis in order to ensure compliance with the allotted water quantities, as per the approved Water Use License.</p> <p>Water saving initiatives must be implemented for the operations of the poultry farm.</p> <p>Environmentally responsible water use practices and activities must be adopted for the operations of the poultry farm.</p> <p>Provide training interventions for the operational staff of the poultry farm, on correct environmentally responsible water use practices and activities for the operations of the poultry farm.</p>	N/A	<p>PES = Class B although it borders on Class C, as a result of directly surrounding upstream transformation impacts. The portion is deemed largely natural, while small to moderate changes in the natural habitat and biota have taken place. The ecosystem functionality has however remained essentially unchanged.</p> <p>EIS = C (moderate). Viewed as being ecologically important and sensitive on provincial scale, mainly due to the area forming part of a combination of Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as forming an important part of the local and broader quaternary surface water catchment- and drainage area, towards the north-east. Biodiversity is however still relatively ubiquitous.</p> <p>The specific portion of the Dwarsspruit which flows past the assessment area, is viewed as being of moderately-high conversational significance/value for habitat preservation and ecological functionality persistence in support of the surrounding ecosystem, broader vegetation type, Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) as well as the ecological functionality and -integrity of the local and broader quaternary surface water catchment- and drainage area.</p>
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