Western Cape Government

Department of Environmental Affairs and Development Planning

BASIC ASSESSMENT REPORT

THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS.

FORM LAST UPDATED: APRIL 2024

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THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS.

APRIL 2024 (FORM DATE)

(For official use only)	
Pre-application Reference Number (if applicable):	**16/3/3/1/B2/32/1083/25**
EIA Application Reference Number:	
NEAS Reference Number:	
Exemption Reference Number (if applicable):	
Date BAR received by Department:	
Date BAR received by Directorate:	
Date BAR received by Case Officer:	

GENERAL PROJECT DESCRIPTION

(This must Include an overview of the project including the Farm name/Portion/Erf number)

Additional information included in blue underlined.

BASIC ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF A FREE-RANGE POULTRY BROILER FACILITY ON THE REMAINDER OF FARM NUMBER 563, 564, 565 AND THE FARM KLEINFONTEIN NUMBER 954, WORCESTER.

PHS Consulting has been appointed to complete a Basic Assessment process for the proposed development of a free-range poultry broiler facility on the Remainder of Farm Number 563 [21,3739 Hectares], the Remainder of Farm Number 564 [18,9273 Hectares], the Remainder of Farm Number 565 [6,0362 Hectares], and the Farm Kleinfontein Number 954 [940,7365 Hectares] in the Breede Valley Municipality Division Worcester, Province Western Cape. Collectively the four farm portions are approximately 987 ha in extent and are located approximately 30 kilometres south of Worcester and approximately 13 kilometres north of Villiersdorp with access being obtained via a gravel road off the R43. Refer to Figure 1 below.

EFRC Agri Operations (Pty) Ltd. (Elgin Free Range Chickens) propose the development of a Free-Range Poultry Broiler Facility. The Broiler Facility will involve the establishment of 20 Broiler Houses (approx. 1044m² per facility) with free range pasture located at the side of each house. Each facility will house approximately 17 000 birds. An Ablution facility, Guard House, Spray Race and Refrigerated Container will be located at the entrance to the site. Furthermore, an additional Ablution Facility and Residential Dwelling will be located at the broiler facilities.

Access & Roads: An existing access road will be utilised and numerous internal roads will be upgraded and realigned (6m width required) where applicable for biosecurity reasons, to improve traffic flow and safety, and to improve river crossings. Four watercourse crossings are required, two are existing crossings and two are new crossings within the proposed road alignment. Three of the structures proposed will be low waterway bridges and one will be a suspended bridge structure.

Electricity:

The Electrical Network Service Provider (NSP) for the site is Eskom. The site is being fed from the Haamanshof-Farmers 3 11kV overhead line (OHL) feeder which is then stepped down to the 400V voltage level via a 100kVA distribution transformer. As the electrical network of Eskom currently has insufficient capacity to supply the entire project with the necessary electricity, RenEnergy was tasked to design a plan where renewable energy is used to supply the electricity needs of the project. The existing Eskom supply will therefore be supplemented with solar energy which is more sustainable.

Based on the electrical equipment that would be installed inside each one of the 20 broiler houses, the broiler houses will have a total peak power requirement of around 301.5kVA, including the new infrastructure at the entrance of the farm and requirement of the existing infrastructure, the total load requirement for the farm is estimated to be 312kVA. Solar panels are proposed on the roofs of the chicken houses. At a designated area close to the delivery point of Eskom the containerised solar batteries (distribution station) will be placed, and a generator room will be built to house the backup generators. A bunded Diesel Tank (2200L) will also be located within close vicinity of the Generator Room. A low voltage (LV) underground cable will go from the existing Eskom point/transformer, via a trench, to the distribution station. A step-up transformer and 11KV overhead line will then distribute power from the distribution station to the proposed facilities. The electrical cable will have a copper core and isolated with PVC. Where the cable crosses the watercourse a treated timber pole will span the watercourse, and the cable will be attached to the pole.

Water:

A Water Treatment Plant is proposed to treat the water from the existing Boreholes (BH1 & BH2) which will be fed via a pipeline from the boreholes to the Water Treatment Plant. Thereafter, treated water will be sent to two proposed reservoirs (300kl each) on site. Water will be sent from the reservoirs directly to the broiler houses. Water storage tanks will be located at each chicken house (1 x 5000 L & 1 x 1000 L). All water pipelines will run, as far as possible, on the side of existing and the new roads. The water pipeline consists of a PVC pipe. Where the water pipeline crosses the watercourse a treated timber pole will span the watercourse, and the pipeline will be attached to the pole.

Waste:

Sewage - Underground septic tanks will be located at the new ablution and domestic dwelling to manage domestic sewerage. The tanks will have a capacity of ±11m^3 and will fall outside a 100m buffer from any watercourse/ wetland.

Mortalities - Cold storage will be utilised as temporary storage for mortalities which will then be disposed of at a bio-approved landfill site or processed at an existing rendering plant (off-site).

Solid Waste – Domestic organic materials will be composted onsite as part of each households composting arrangement. The remaining solid waste will be separated into recycled and non-recycled materials and removed from the site on a weekly basis to the local municipal waste facility.

Manure: Manure will be dry swept and cleaned out of the chicken houses whereafter high-pressure hoses (washing pumps) will be used to clean the pens with any residual water lost onto free-range pastures and through evaporation. Chicken Manure will be used directly in the agricultural industry to be collected by surrounding farmers for crop fertilisation.

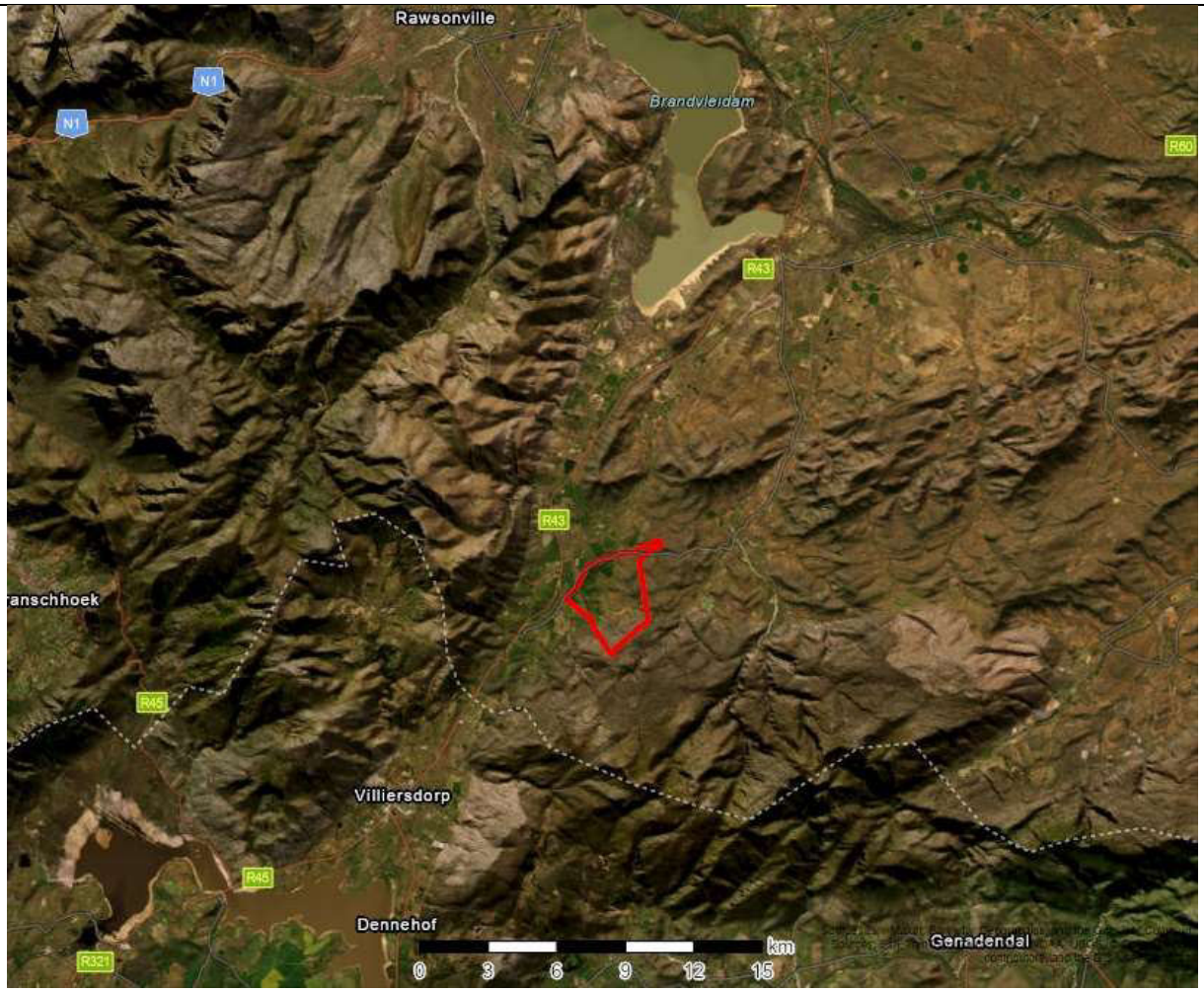

Figure A: Locality Map (refer to Annexure A).

IMPORTANT INFORMATION TO BE READ PRIOR TO COMPLETING THIS BASIC ASSESSMENT REPORT

1. **The purpose** of this template is to provide a format for the Basic Assessment report as set out in Appendix 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended) in order to ultimately obtain Environmental Authorisation.

2. The Environmental Impact Assessment ("EIA") Regulations is defined in terms of Chapter 5 of the National Environmental Management Act, 19998 (Act No. 107 of 1998) ("NEMA") hereinafter referred to as the "NEMA EIA Regulations".

3. *Submission of documentation, reports and other correspondence:*

   The Department has adopted a digital format for corresponding with proponents/applicants or the general public. If there is a conflict between this approach and any provision in the legislation, then the provisions in the legislation prevail. If there is any uncertainty about the requirements or arrangements, the relevant Competent Authority must be consulted.

   The Directorate: Development Management has created generic e-mail addresses for the respective Regions, to centralise their administration. Please make use of the relevant general administration e-mail address below when submitting documents:

   DEADPEIAAdmin@westerncape.gov.za
   Directorate: Development Management (Region 1):
   City of Cape Town; West Coast District Municipal area;
   Cape Winelands District Municipal area and Overberg District Municipal area.

   DEADPEIAAdmin.George@westerncape.gov.za
   Directorate: Development Management (Region 3):
   Garden Route District Municipal area and Central Karoo District Municipal area

   General queries must be submitted via the general administration e-mail for EIA related queries. Where a case-officer of DEA&DP has been assigned, correspondence may be directed to such official and copied to the relevant general administration e-mail for record purposes.

All correspondence, comments, requests and decisions in terms of applications, will be issued to either the applicant/requester in a digital format via email, with digital signatures, and copied to the Environmental Assessment Practitioner ("EAP") (where applicable).

4. The required information must be typed within the spaces provided in this Basic Assessment Report ("BAR"). The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided.

5. All applicable sections of this BAR must be completed.

6. Unless protected by law, all information contained in, and attached to this BAR, will become public information on receipt by the Competent Authority. If information is not submitted with this BAR due to such information being protected by law, the applicant and/or Environmental Assessment Practitioner ("EAP") must declare such non-disclosure and provide the reasons for believing that the information is protected.

7. This BAR is current as of **April 2024**. It is the responsibility of the Applicant/ EAP to ascertain whether subsequent versions of the BAR have been released by the Department. Visit this Department's website at http://www.westerncape.gov.za to check for the latest version of this BAR.

8. This BAR is the standard format, which must be used in all instances when preparing a BAR for Basic Assessment applications for an environmental authorisation in terms of the NEMA EIA Regulations when the Western Cape Government Department of Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority.

9. Unless otherwise indicated by the Department, one hard copy and one electronic copy of this BAR must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Reasonable access to copies of this Report must be provided to the relevant Organs of State for consultation purposes, which may, if so indicated by the Department, include providing a printed copy to a specific Organ of State.

10. This BAR must be duly dated and originally signed by the Applicant, EAP (if applicable) and Specialist(s) and must be submitted to the Department at the details provided below.

11. The Department's latest Circulars pertaining to the "One Environmental Management System" and the EIA Regulations, any subsequent Circulars, and guidelines must be taken into account when completing this BAR.

12. Should a water use licence application be required in terms of the National Water Act, 1998 (Act No. 36 of 1998) ("NWA"), the "One Environmental System" is applicable, specifically in terms of the synchronisation of the consideration of the application in terms of the NEMA and the NWA. Refer to this Department's Circular EADP 0028/2014: One Environmental Management System.

13. Where Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA") is triggered, a copy of Heritage Western Cape's final comment must be attached to the BAR.

14. The Screening Tool developed by the National Department of Environmental Affairs must be used to generate a screening report. Please use the Screening Tool link https://screening.environment.gov.za/screeningtool to generate the Screening Tool Report. The screening tool report must be attached to this BAR.

15. Where this Department is also identified as the Licencing Authority to decide on applications under the National Environmental Management: Air Quality Act (Act No. 29 of 2004) ('NEM:AQA"), the submission of the Report must also be made as follows, for-
Waste Management Licence Applications, this report must also (i.e., another hard copy and electronic copy) be submitted for the attention of the Department's Waste Management Directorate (Tel: 021-483-2728/2705 and Fax: 021-483-4425) at the same postal address as the Cape Town Office.

Atmospheric Emissions Licence Applications, this report must also be (i.e., another hard copy and electronic copy) submitted for the attention of the Licensing Authority or this Department's Air Quality Management Directorate (Tel: 021 483 2888 and Fax: 021 483 4368) at the same postal address as the Cape Town Office.

DEPARTMENTAL DETAILS	
CAPE TOWN OFFICE: **DIRECTORATE: DEVELOPMENT MANAGEMENT (REGION 1)** (City of Cape Town, West Coast District, Cape Winelands District & Overberg District)	**GEORGE REGIONAL OFFICE:** **DIRECTORATE: DEVELOPMENT MANAGEMENT (REGION 3)** (Central Karoo District & Garden Route District)
The completed Form must be sent via electronic mail to: DEADPEIAAdmin@westerncape.gov.za Queries should be directed to the Directorate: Development Management (Region 1) at: E-mail: DEADPEIAAdmin@westerncape.gov.za Tel: (021) 483-5829 Western Cape Government Department of Environmental Affairs and Development Planning	The completed Form must be sent via electronic mail to: DEADPEIAAdmin.George@westerncape.gov.za Queries should be directed to the Directorate: Development Management (Region 3) at: E-mail: DEADPEIAAdmin.George@westerncape.gov.za Tel: (044) 814-2006 Western Cape Government Department of Environmental Affairs and Development Planning

Attention: Directorate: Development Management (Region 1) Private Bag X 9086 Cape Town, 8000	Attention: Directorate: Development Management (Region 3) Private Bag X 6509 George, 6530

MAPS

Provide a location map (see below) as Appendix A1 to this BAR that shows the location of the proposed development and associated structures and infrastructure on the property.	
Locality Map:	The scale of the locality map must be at least 1:50 000. For linear activities or development proposals of more than 25 kilometres, a smaller scale e.g., 1:250 000 can be used. The scale must be indicated on the map. The map must indicate the following: • an accurate indication of the project site position as well as the positions of the alternative sites, if any; • road names or numbers of all the major roads as well as the roads that provide access to the site(s) • a north arrow; • a legend; and • a linear scale. For ocean based or aquatic activity, the coordinates must be provided within which the activity is to be undertaken and a map at an appropriate scale clearly indicating the area within which the activity is to be undertaken. Where comment from the Western Cape Government: Transport and Public Works is required, a map illustrating the properties (owned by the Western Cape Government: Transport and Public Works) that will be affected by the proposed development must be included in the Report.
Provide a detailed site development plan / site map (see below) as Appendix B1 to this BAR; and if applicable, all alternative properties and locations.	
Site Plan:	Detailed site development plan(s) must be prepared for each alternative site or alternative activity. The site plans must contain or conform to the following: • The detailed site plan must preferably be at a scale of 1:500 or at an appropriate scale. The scale must be clearly indicated on the plan, preferably together with a linear scale. • The property boundaries and numbers of all the properties within 50m of the site must be indicated on the site plan. • On land where the property has not been defined, the co-ordinates of the area in which the proposed activity or development is proposed must be provided. • The current land use (not zoning) as well as the land use zoning of each of the adjoining properties must be clearly indicated on the site plan. • The position of each component of the proposed activity or development as well as any other structures on the site must be indicated on the site plan. • Services, including electricity supply cables (indicate aboveground or underground), water supply pipelines, boreholes, sewage pipelines, storm water infrastructure and access roads that will form part of the proposed development **must** be clearly indicated on the site plan. • Servitudes and an indication of the purpose of each servitude must be indicated on the site plan. • Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to): o Watercourses / Rivers / Wetlands o Flood lines (*i.e.,* 1:100 year, 1:50 year and 1:10 year where applicable); o Coastal Risk Zones as delineated for the Western Cape by the Department of Environmental Affairs and Development Planning ("DEA&DP"): o Ridges; o Cultural and historical features/landscapes; o Areas with indigenous vegetation (even if degraded or infested with alien species). • Whenever the slope of the site exceeds 1:10, a contour map of the site must be submitted. • North arrow A map/site plan must also be provided at an appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred and alternative sites indicating any areas that should be avoided, including buffer areas.
Site photographs	Colour photographs of the site that shows the overall condition of the site and its surroundings (taken on the site and taken from outside the site) with a description of each photograph. The vantage points from which the photographs were taken must be indicated on the site plan, or locality plan as applicable. If available, please also provide a recent aerial photograph. Photographs must be attached to this BAR as **Appendix C**. The aerial photograph(s) should be supplemented with additional photographs of relevant features on the site. Date of photographs must be included. Please note that the above requirements must be duplicated for all alternative sites.

Biodiversity Overlay Map:	A map of the relevant biodiversity information and conditions must be provided as an overlay map on the property/site plan. The Map must be attached to this BAR as **Appendix D**.
Linear activities or development and multiple properties	GPS co-ordinates must be provided in degrees, minutes and seconds using the Hartebeeshoek 94 WGS84 co-ordinate system. Where numerous properties/sites are involved (linear activities) you must attach a list of the Farm Name(s)/Portion(s)/Erf number(s) to this BAR as an Appendix. For linear activities that are longer than 500m, please provide a map with the co-ordinates taken every 100m along the route to this BAR as **Appendix A3**.

ACRONYMS

DAFF:	Department of Forestry and Fisheries
DEA:	Department of Environmental Affairs
DEA& DP:	Department of Environmental Affairs and Development Planning
DHS:	Department of Human Settlement
DoA:	Department of Agriculture
DoH:	Department of Health
DWS:	Department of Water and Sanitation
EMPr:	Environmental Management Programme
HWC:	Heritage Western Cape
NFEPA:	National Freshwater Ecosystem Protection Assessment
NSBA:	National Spatial Biodiversity Assessment
TOR:	Terms of Reference
WCBSP:	Western Cape Biodiversity Spatial Plan
WCG:	Western Cape Government

ATTACHMENTS

Note: The Appendices must be attached to the BAR as per the list below. Please use a ✓ **(**tick) or a **x** (cross) to indicate whether the Appendix is attached to the BAR. The following checklist of attachments must be completed.

APPENDIX			**✓ (Tick) or x (cross)**
Appendix A:	**Maps**		
	Appendix A1:	**Locality Map**	✓
	Appendix A2:	**Coastal Risk Zones as delineated in terms of ICMA for the Western Cape by the DEA&DP**	N/A
	Appendix A3:	**Map with the GPS co-ordinates for linear activities**	N/A
Appendix B:	**Appendix B1:**	**Site development plan(s)**	✓
	Appendix B2	**A map of appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffer areas;**	✓
Appendix C:	**Photographs**		✓
Appendix D:	**Biodiversity overlay map**		✓
Appendix E:	**Permit(s) / license(s) / exemption notice, agreements, comments from State Department/Organs of state and service letters from the municipality.**		
	Appendix E1:	**Final comment/ROD from HWC**	✓
	Appendix E2:	**Comment from Cape Nature**	✓
	Appendix E3:	**Comment from the DWS/ BOCMA**	✓
	Appendix E4:	**Comment from the DEA: Oceans and Coast**	N/A
	Appendix E5:	**Comment from the DAFF**	Awaiting

	Appendix E6:	**Comment from WCG: Transport and Public Works**	Awaiting
	Appendix E7:	**Comment from WCG: DoA**	Awaiting
	Appendix E8:	**Comment from WCG: DHS**	N/A
	Appendix E9:	**Comment from WCG: DoH**	Awaiting
	Appendix E10:	**Comment from DEA&DP: Pollution Management**	Awaiting
	Appendix E11:	**Comment from DEA&DP: Waste Management**	Awaiting
	Appendix E12:	**Comment from DEA&DP: Biodiversity**	N/A
	Appendix E13:	**Comment from DEA&DP: Air Quality**	Awaiting
	Appendix E14:	**Comment from DEA&DP: Coastal Management**	N/A
	Appendix E15:	**Comment from the local authority**	Awaiting
	Appendix E16:	**Confirmation of all services (water, electricity, sewage, solid waste management)**	✓
	Appendix E17:	**Comment from the District Municipality**	Awaiting
	Appendix E18:	**Copy of an exemption notice**	N/A
	Appendix E19	**Pre-approval for the reclamation of land**	N/A
	Appendix E20:	**Proof of agreement/TOR of the specialist studies conducted.**	Included in specialist reports in Appendix G
	Appendix E21:	**Proof of land use rights**	N/A
	Appendix E22:	**Proof of public participation agreement for linear activities**	N/A
Appendix F:	**Public participation information:** **Appendix F1: I&AP List** **Appendix F2: Proof of PPP (excluded due to POPIA – to be submitted directly to CA)** **Appendix F3: Comments and Response Table** **Appendix F4: Copy of Comments Received (excluded due to POPIA – to be submitted directly to CA) – refer to Appendix F3**		✓
Appendix G:	**G1: NID & Heritage Screener** **G2: Freshwater Impact Assessment & DWS RAM** **G3: Geohydrological Impact Assessment** **G4: Water Use Licence Application** **G5: Engineering Report & Designs (River Crossings)**		✓
Appendix H:	**Environmental Management Programme (EMPr)**		✓
Appendix I:	**I1: Screening Tool Report** **I2: Site Sensitivity Verification Report**		✓ ✓
Appendix J:	**The impact and risk assessment for each alternative**		✓
Appendix K:	**Need and desirability for the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013)/DEA Integrated Environmental Management Guideline**		✓

SECTION A: ADMINISTRATIVE DETAILS

Highlight the Departmental Region in which the intended application will fall	CAPE TOWN OFFICE: REGION 1		GEORGE OFFICE: BEGION 3
	(City of Cape Town, West Coast District	**(Cape Winelands District & Overberg District)**	(Central Karoo District & Garden Route District)

Name of Applicant/Proponent:	**EFRC Agri Operations (Pty) Ltd**	
Name of contact person for Applicant/Proponent (if other):	**Jaco Viljoen**	
Company/ Trading name/State Department/Organ of State:	**Company**	
Company Registration Number:	**2017/074447/07**	
Postal address:	**PO Box 1176**	
	GRABOUW	Postal code: **7160**
Telephone:	**021 - 859 2795**	Cell: **071 687 2246**
E-mail:	**jacov@efrc.co.za**	Fax: **N/A**
Company of EAP:	**PHS Consulting**	
EAP name:	**Jenna Theron (EAP) & Paul Slabbert (EAP)**	
Postal address:	**PO Box 1752**	
	HERMANUS	Postal code: **7200**
Telephone:	**028 312 1734**	Cell: **082 566 1660**
E-mail:	**jt@phsconsulting.co.za**	Fax: **086 508 3249**
Qualifications:	**Jenna Theron - BA, MPhil**	**Paul Slabbert -B Art Et Science**
EAP registration no:	**EAPASA Reg 2022-5926 (Registered EAP)**	**EAPASA Reg 2019-1036 (Registered EAP)**
Name of landowner:	**RALPH TRUST**	
Name of contact person for landowner (if other):	**Ralph Swart**	
Postal address:	**Kerkstraat 58**	
	ELIM	Postal code: **7284**
Telephone:	**082 427 0175**	Cell: **082 427 0175**
E-mail:	**ralphswart59@gmail.com**	Fax: **N/A**
Name of Person in control of the land:	**RALPH TRUST**	
Name of contact person for person in control of the land:	**Ralph Swart**	
Postal address:	**Kerkstraat 58**	
	ELIM	Postal code: **7284**
Telephone:	**082 427 0175**	Cell: **082 427 0175**
E-mail:	**ralphswart59@gmail.com**	Fax: **N/A**

Municipality in whose area of jurisdiction the proposed activity will fall:	**Breede Valley Local Municipality**	
Contact person:	**Jean de Villiers – Director: Planning, Development and Integrated Services** **Carisa Pieters – Manager: Town Planning**	
Postal address:	**23 Baring St**	
	WORCESTER	Postal code: **6850**
Telephone	**023 348 2647 / 023 348 2640**	Cell:
E-mail:	**jdevilliers@bvm.gov.za** **cpieters@bvm.gov.za**	Fax:

SECTION B: CONFIRMATION OF SPECIFIC PROJECT DETAILS AS INLCUDED IN THE APPLICATION FORM

1.	Is the proposed development (please tick):	**New X**		Expansion	
2.	Is the proposed site(s) a brownfield of greenfield site? Please explain.				

The proposed site is classified as a brownfield site. Aerial imagery from the CD: NGI database indicates that the land area proposed for development has been under cultivation prior to 1966 (Figure 1). The proposed development footprint is currently within fallow agricultural lands (

Figure 3) but has been actively cultivated in a 10-year cycle which is clear from Figure 2. The sites agricultural use makes it a brownfields site.

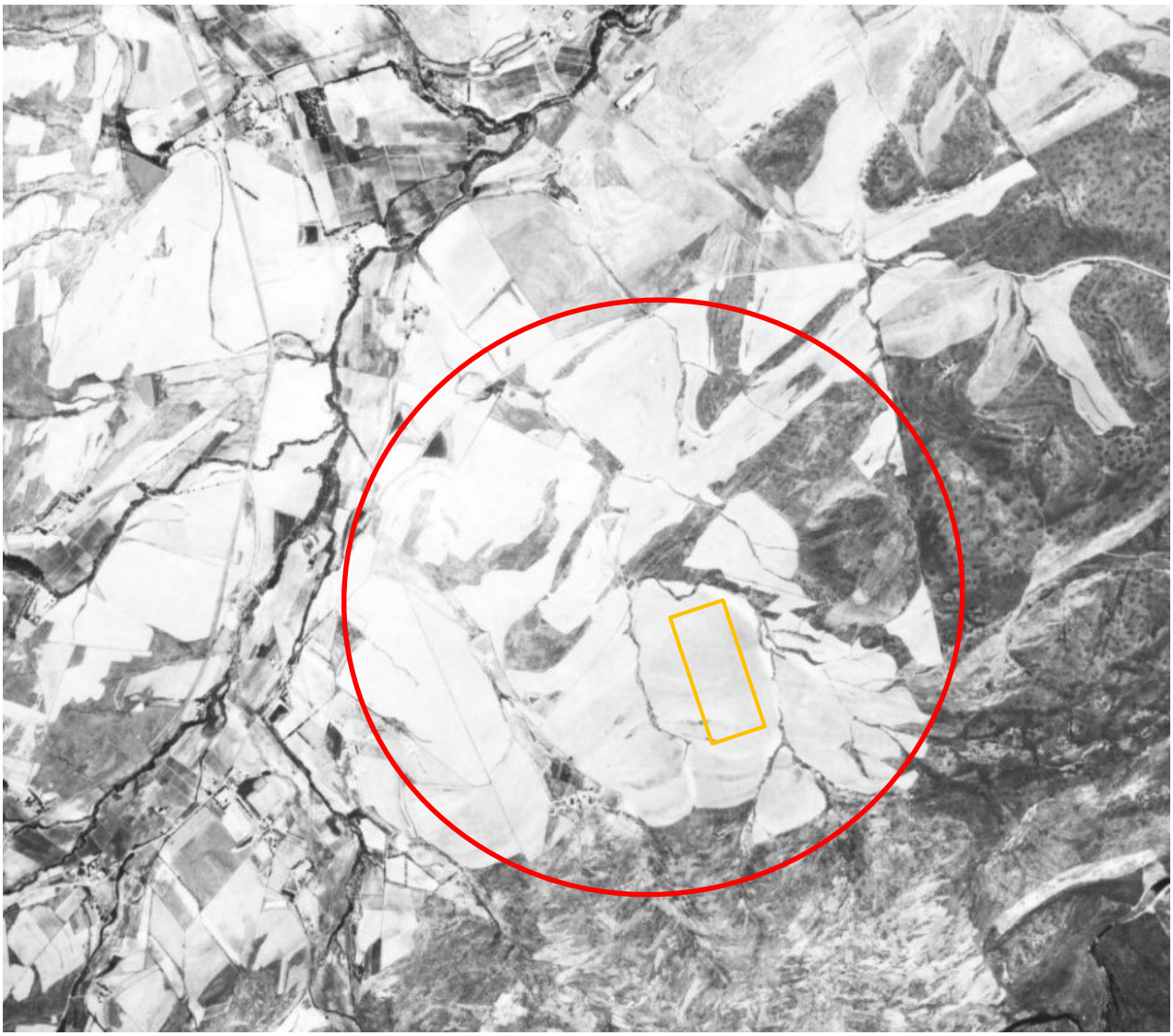

***Figure 1:** Aerial Imagery (dated 1966) indicating that the majority of the property has been under cultivation prior to 1966. The proposed development site (within the red circle) has therefore been under cultivation for several decades. The approximate location of the broiler facility is indicated by the orange square.*

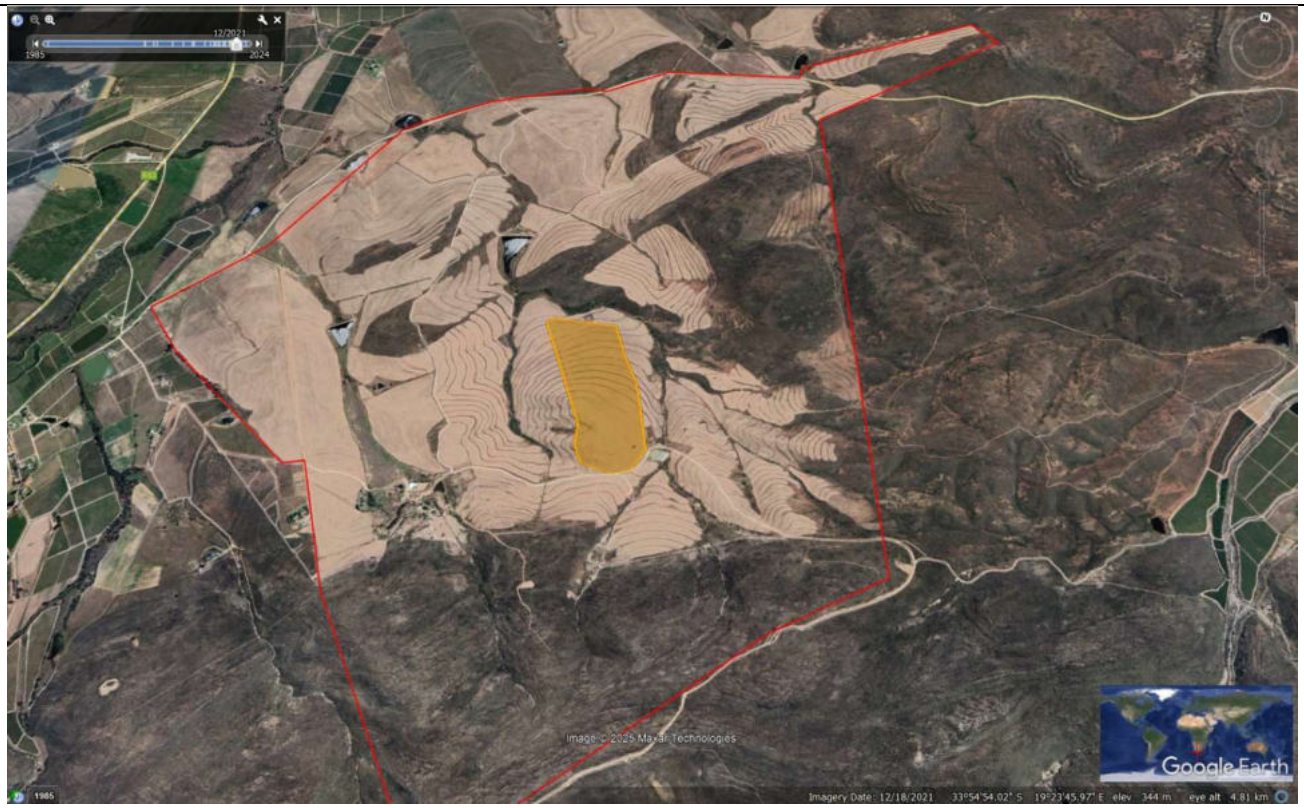

***Figure 2:** Aerial Imagery from Google Earth (2021) clearly indicating that the land is still very much being actively cultivated within a 10-year cycle since the 1966 Aerial Image. The proposed broiler facility footprint is indicated in orange.*

***Figure 3:** Aerial Imagery from Google Earth (present day) showing the proposed Broiler Facility footprint (orange) with the lands being in a largely fallow state.*

3.	**For Linear activities or developments – N/A**	
~~3.1.~~	~~Provide the Farm(s)/Farm Portion(s)/Erf number(s) for all routes:~~	
~~3.2.~~	~~Development footprint of the proposed development for all alternatives.~~	~~m²~~

3.3.	Provide a description of the proposed development (e.g. for roads the length, width and width of the road reserve in the case of pipelines indicate the length and diameter) for all alternatives.		
3.4.	Indicate how access to the proposed routes will be obtained for all alternatives.		
3.5.	SG Digit codes of the Farms/Farm Portions/Erf numbers for all alternatives		
3.6.	**Starting point co-ordinates for all alternatives**		
	Latitude (S)	º	'	"
	Longitude (E)	º	'	"
	Middle point co-ordinates for all alternatives		
	Latitude (S)	º	'	"
	Longitude (E)	º	'	"
	End point co-ordinates for all alternatives		
	Latitude (S)	º	'	"
	Longitude (E)	º	'	"

Note: For Linear activities or developments longer than 500m, a map indicating the co-ordinates for every 100m along the route must be attached to this BAR as Appendix A3.

4.	**Other developments**	
4.1.	Property size(s) of all proposed site(s):	**± 9 870 000 m²**
4.2.	Developed footprint of the existing facility and associated infrastructure (if applicable):	**± 2600 m² (excl. all roads, Dams etc.)**
4.3.	Development footprint of the proposed development and associated infrastructure size(s) for all alternatives:	**± 50 306 m²**
4.4.	Provide a detailed description of the proposed development and its associated infrastructure (This must include details of e.g. buildings, structures, infrastructure, storage facilities, sewage/effluent treatment and holding facilities).	

Elgin Free Range Chickens (EFRC Agri Operations (Pty) Ltd.) propose the development of a Free-Range Poultry Broiler Facility. The Broiler Facility will involve the establishment of 20 Broiler Houses (approx. 1044m² per facility). Each facility will house approximately 17 000 birds. An Ablution facility, Guard House, Spray Race and Refrigerated Container will be located at the entrance to the site. Furthermore, an additional Ablution Facility and Residential Dwelling will be located at the broiler facilities.

Access & Roads: An existing access road will be utilised and numerous internal roads (6m width required) will be upgraded and realigned where applicable for biosecurity reasons, to improve traffic flow and safety, and to improve river crossings. **Four watercourse crossings are required, two are existing crossings and two are new crossings within the proposed road alignment. Three of the structures proposed will be low waterway bridges and one will be a suspended bridge structure.**

Low Water Bridges:

Low waterway bridges are reinforced concrete structures with a driving surface (final top level) raised above ground (natural ground level) and these structures cross waterways nearly perpendicular to the natural water flow direction of the stream. Pipes will be installed at set intervals across the bridge length to allow water to freely pass through.

The final top level of the bridge is horizontal (level) and extends across the total width of the existing stream. Where the horizontal bridge section ends at the edge of the stream a further concrete slab on both ends extends at an incline (approach ramps) to a level 1m above natural ground level. This is to mitigate vehicle approach at a slope towards the bridge.

Bridge foundations are concrete walls with footings varying between 1,0 to 1,5m deep below natural ground level or until suitable founding material is found. G5 type materials will be used to fill the void between foundations walls to

support the concrete slab (driving surface). However, where suitable founding materials is reached less than 1.0m deep below natural ground level, foundation walls are not required, and G5 type fill material is adequate.

A combination of Gabion baskets, blankets and biddim material will be used to prevent erosion directly up and downstream from the bridge. These erosion prevention measures will continue along the total length of the bridge structure, including the approach ramps on either side. Along the upstream side of the bridge the top of the gabion baskets will be level with the invert level of the pipes going through the concrete. On the downstream side the top of the gabion baskets will be flush with the top of the driving surface.

Protruding concrete blocks will be placed at intervals on top of the driving surface along the edge of the road to indicate the side of the road during flood conditions. The height of the blocks will indicate if the water level is suitable for safe vehicle crossing.

Suspended bridge structure:

Where the natural runoff channel is deep and narrow) a suspended bridge will span across. Suspended bridges are reinforced concrete structures with a driving surface (final top level) raised above ground (natural ground level). The structure crosses the waterway at a skew angle to align with the approach roadway alignment. The final top level of the bridge is horizontal (level) and has upstand beams on both sides. Where the horizontal bridge section ends at the edge of the stream a further concrete slab on both ends extends at an incline (approach ramps) to natural ground level. This is to mitigate vehicle approach at a slope towards the bridge. There are 3 walls supporting the bridge, 2 on both sides of the stream and one in the centre.

Bridge support walls (3 in total) are reinforced concrete which is founded on rock. The foundations are sunk 300mm deep into the rock and water will flow in between the supporting walls. The flow area through bridge support walls is more than the width of the existing natural channel hence no channelling of the stream occurs. Gabion structures both at the upstream and downstream side of the supporting walls will protect the structure against erosion.

As there is not enough space at the suspended bridge to divert stream flow to accommodate wet works, a temporary upstream coffer dam must be constructed to temporarily divert stream water away from the wet works during construction.

Electricity:

The Electrical Network Service Provider (NSP) for the site is Eskom. The site is being fed from the Haamanshof-Farmers 3 11kV overhead line (OHL) feeder which is then stepped down to the 400V voltage level via a 100kVA distribution transformer. As the electrical network of Eskom currently has insufficient capacity to supply the entire project with the necessary electricity, RenEnergy was tasked to design a plan where renewable energy is used to supply the electricity needs of the project. The existing Eskom supply will therefore be supplemented with Solar Energy which is more sustainable.

Based on the electrical equipment that would be installed inside each one of the 20 broiler houses, the broiler houses will have a total peak power requirement of around 301.5kVA, including the new infrastructure at the entrance of the farm and requirement of the existing infrastructure, the total load requirement for the farm is estimated to be 312kVA. Solar panels are proposed on the roofs of the chicken houses. At a designated area close to the delivery point of Eskom the containerised solar batteries (distribution station) will be placed, and a generator room will be built to house the backup generators. A bunded Diesel Tank (2200L) will also be located within close vicinity of the Generator Room. A low voltage (LV) underground cable will go from the existing Eskom point/transformer, via a trench, to the distribution station. A step-up transformer and 11KV overhead line will then distribute power from the distribution station to the proposed facilities. The electrical cable will have a copper core and isolated with PVC. Where the cable crosses the watercourse a treated timber pole will span the watercourse, and the cable will be attached to the pole.

Water:

A Water Treatment Plant is proposed to treat the water from the existing Boreholes (BH1 & BH2) which will be fed via a pipeline from the boreholes to the Water Treatment Plant. Thereafter, treated water will be sent to two proposed reservoirs (300kl each) on site. Water will be sent from the reservoir directly to the broiler houses. Water storage tanks will be located at each chicken house (1 x 5000 L & 1 x 1000 L). All water pipelines will run, as far as possible, on the

side of existing and the new roads. The water pipeline consists of a PVC pipe. Where the water pipeline crosses the watercourse a treated timber pole will span the watercourse, and the pipeline will be attached to the pole.

Waste:

Sewage - Underground septic tanks will be located at the new ablution and domestic dwelling to manage domestic sewerage. The tanks will have a capacity of ±11m^3 and will fall outside a 100m buffer from any watercourse/ wetland. Please refer to Annexure E16 for the type of tanks proposed.

Mortalities - Cold storage will be utilised as temporary storage for mortalities which will then be disposed of at a bio-approved landfill site or processed at an existing rendering plant (off-site).

Solid Waste – Domestic organic materials will be composted onsite as part of each households composting arrangement. The remaining solid waste will be separated into recycled and non-recycled materials and removed from the site on a weekly basis to the local municipal waste facility.

Manure: Manure will be dry swept and cleaned out of the chicken houses whereafter high-pressure hoses (washing pumps) will be used to clean the pens with any residual water washed onto free range pastures and lost through evaporation. Chicken Manure will be used directly in the agricultural industry to be collected by surrounding farmers for crop fertilisation.

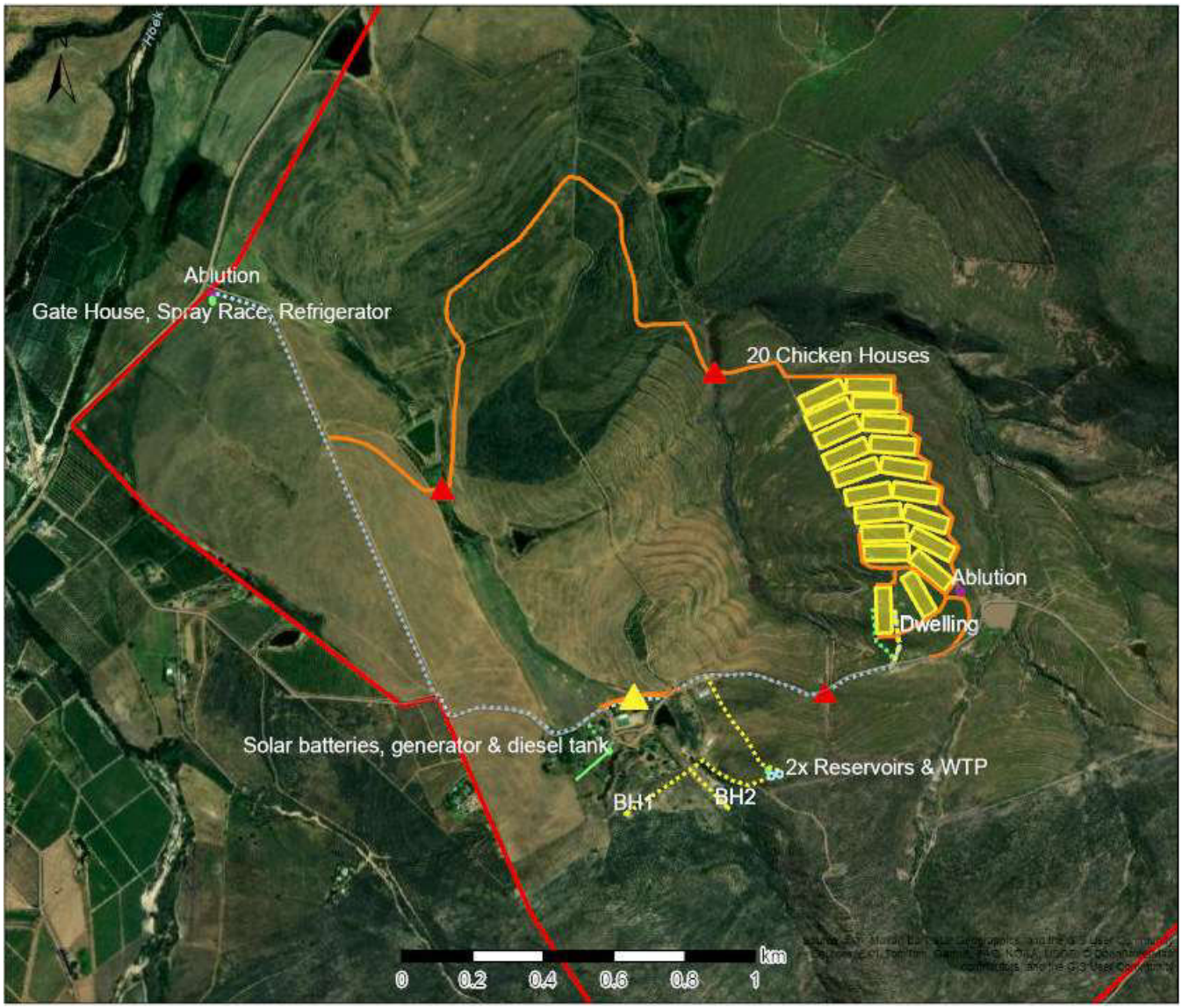

Figure 4: Showing the proposed activities within the property boundaries (red line): new realigned roads (orange), trenched water pipeline (yellow and blue/grey dotted line), trenched electrical cable (solid green line), overhead electrical distribution lines (green and blue/grey dotted line) and the triangles indicate the road river crossings (red = low water bridges; yellow =suspended bridge).

4.5.	Indicate how access to the proposed site(s) will be obtained for all alternatives.

The property is located approximately 30 kilometres south of Worcester and approximately 13 kilometres north of Villiersdorp with access being obtained via a gravel road (Koppies Road) off the R43. An existing access road will be utilised with certain internal roads requiring realignment to accommodate trucks and better circulation within the property from a biosecurity perspective.

4.6.	SG Digit code(s) of the proposed site(s) for all alternatives:																				
RE of Farm 563, Worcester	**C**	**0**	**8**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**6**	**3**	**0**	**0**	**0**	**0**	**0**
RE of Farm 564, Worcester	**C**	**0**	**8**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**6**	**4**	**0**	**0**	**0**	**0**	**0**
RE of Farm 565, Worcester	**C**	**0**	**8**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**6**	**5**	**0**	**0**	**0**	**0**	**0**
Farm Kleinfontein no. 954, Worcester	**C**	**0**	**8**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**5**	**4**	**0**	**0**	**0**	**0**	**0**

4.7.	Coordinates of the proposed site(s) for all alternatives:			
	Latitude (S)	**33º**	**54'**	**38.29"**
	Longitude (E)	**19º**	**22'**	**54.41"**

SECTION C: LEGISLATION/POLICIES AND/OR GUIDELINES/PROTOCOLS

1. Exemption applied for in terms of the NEMA and the NEMA EIA Regulations

Has exemption been applied for in terms of the NEMA and the NEMA EIA Regulations. If yes, include a copy of the exemption notice in Appendix E18.	YES	**NO X**

2. Is the following legislation applicable to the proposed activity or development.

The National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) ("ICMA"). If yes, attach a copy of the comment from the relevant competent authority as Appendix E4 and the pre-approval for the reclamation of land as Appendix E19.	YES	**NO X**
The National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA"). If yes, attach a copy of the comment from Heritage Western Cape as Appendix E1.	**YES X**	NO
The National Water Act, 1998 (Act No. 36 of 1998) ("NWA"). If yes, attach a copy of the comment from the DWS as Appendix E3.	**YES X**	NO
The National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("NEM:AQA"). If yes, attach a copy of the comment from the relevant authorities as Appendix E13.	YES	**NO X**
The National Environmental Management Waste Act (Act No. 59 of 2008) ("NEM:WA")	YES	**NO X**
The National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004 ("NEMBA").	YES	**NO X**
The National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) ("NEMPAA").	YES	**NO X**
The Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983). If yes, attach comment from the relevant competent authority as Appendix E5.	YES	**NO X**

3. Other legislation

List any other legislation that is applicable to the proposed activity or development.
Not Applicable.

4. Policies

Explain which policies were considered and how the proposed activity or development complies and responds to these policies.
The Provincial Strategic Plan (PSP) sets out the Western Cape Government's (WCG) vision and strategic priorities. The WCG remains committed to building an "Open-opportunity Society for All" in the Province, which is also the cornerstone of the Constitution. The PSP gives expression to a strong view that progress must be built on a "whole-of-society" approach in which citizens, civil society and business actively partner with the state – encapsulated in the Western Cape Government's "Better Together" slogan. The PSP also reflects the PSDF – a critical enabler for development – and the longer-term OneCape 2040 vision of "a highly skilled, innovation-driven, resource-efficient, connected, high-opportunity society for all". The PSP translates this

vision into an actionable, measurable policy agenda focused both on tackling the Province's greatest challenges, and on unlocking the full potential of its people. Finally, the PSP is underpinned by the six core values of the WCG: Caring, Competence, Accountability, Integrity, Innovation and Responsiveness.

The development will play an important role in increasing the agricultural potential of the property and the long-term economic viability of the existing farming operation – which will help to sustain existing and future employment opportunities. Through implementation of suitable mitigation and management measures, the establishment and operation of the proposed development will not negatively impact the natural environment or surrounding land users. As such, all three pillars of sustainability can be promoted within the development proposal.

The proposed development site is a working farm located within an agriculturally dominated landscape. The location of the property is thus suitable for the expansion of agricultural activities that will support local economic development and generate employment opportunities within the agricultural sector. Furthermore, the proposed agricultural activities (poultry production) are not currently a main commodity in the region and will assist in diversification of the local agricultural sector. The proposed agricultural development will also run year-round and provide more permanent job opportunities compared to the traditional forms of agriculture in the region. Lastly, poultry broiler facilities produce a valuable byproduct in the form of nutrient rich manure which can be used in the existing farming undertaken on the property or surrounding areas thereby facilitating sustainable, circular agricultural practices.

The SmartAgri Plan, the Western Cape Climate Change Response Framework and Implementation Plan for the Agricultural Sector (2016) **builds on the Western Cape Climate Change Response Strategy (2014) and it's Implementation Framework, specifically the focus area of "Food Security". It also aligns closely with the WCG: Agriculture Strategic Goals. One of the seven Goals is "Optimise the sustainable utilisation of water and land resources to increase climate smart agricultural production". The SmartAgri Plan suggests that the Western Cape Department of Agriculture and other sectoral institutions and stakeholders pursue the vision of: "*Leading the Way to a Climate-Resilient Agricultural Future for the Western Cape*". In pursuit of this vision, the SmartAgri Plan proposes the following four Strategic Focus Areas (SFA):**

- ***Promote a climate-resilient low carbon production system that is productive, competitive, equitable and ecologically sustainable across the value chain.***
- ***Strengthen effective climate disaster risk reduction and management for agriculture.***
- ***Strengthen monitoring, data and knowledge management and sharing, and lead strategic research for climate change and agriculture.***
- ***Ensure good co-operative governance and institutional planning for effective climate change response implementation for agriculture.***

The proposed development site is a working farm located within an agriculturally dominated landscape. The location of the property is thus suitable for the expansion of agricultural activities that will support local economic development and generate employment opportunities within the agricultural sector. Furthermore, the proposed agricultural activities (poultry production) are not currently a main commodity in the region and will assist in diversification of the local agricultural sector. The proposed agricultural development will also run year-round and provide more permanent job opportunities compared to the traditional forms of agriculture in the region. Lastly, poultry broiler facilities produce a valuable byproduct in the form of nutrient rich manure which can be used in the existing farming undertaken on the property or surrounding areas thereby facilitating sustainable, circular agricultural practices.

The Catchment Management Strategy (CMS) for the Breede Gouritz was released in July 2017. This strategy highlights the fact that the Breede-Gouritz Water Management Area (BGWMA) falls into the category of being water stressed. It is therefore critical for the CMS to guide the management of water resources in the WMA. The Breede Gouritz WMA is predominantly a rural region with social, economic and environmental systems

which are dependent on the water resources and therefore a balance must be found to ensure sustainable development in the WMA.

In addition to the above legislation, the Department of Water and Sanitation has released the proposed classes of water resources and Resource Quality Objectives (RQOs) for the Breede-Gouritz Water Management Area, as published in Government Notice 1298 of Gazette 42053 on 23 November 2018, in terms of Section 13(4) of the National Water Act (1998). For the H40E Catchment, which falls within the A3 Middle Breede Renosterveld zone, only general RQOs are applicable. These, along with RQOs specific to rivers within this quaternary catchment, have been set out for the section of the Breede River that runs through this area (and is not specifically applicable to the tributaries located on the property or the Ratel and Hoeks Rivers running through the catchment area).

5. Guidelines

List the guidelines which have been considered relevant to the proposed activity or development and explain how they have influenced the development proposal.

Western Cape Land Use Planning Guidelines Rural Areas, March 2019:

"Cultivatable soils and mineral resources are non-renewable assets that are important underpinnings of the Western Cape economy. As agricultural output is the foundation of the Western Cape's rural economy and an important input to the urban economy, safeguarding the Province's agricultural resources, and productively using them without compromising biodiversity, heritage and scenic resources, remains a key challenge. There is limited suitable land available for extension of the Province's agricultural footprint, and water availability limits the use of cultivatable soils. Ineffective and inefficient farming practices impinge on agricultural productivity and contribute to the loss of valuable topsoil."

"The evaluation of sustainable land management is an integral part of the process of harmonizing agriculture and food production with the, often conflicting, interests of urban development, economics and the environment. To ensure sustainable use of agricultural land and to build resilience, land management practices (e.g. maintaining and enhancing the production potential of soil, including grazing carrying capacity by introducing correct cropping systems such as conservation agriculture, veld rotation and rehabilitation, and eradication of declared weeds and invasive plants), control processes of land degradation (e.g. salination, erosion) and their efficiency in this respect will largely govern the sustainability of a given land use."

"The basis of sustainable agriculture, is implementing agricultural activities, that combine technology, policies and activities to integrate natural resources with socio-economic principles by:

- ***Productivity: Maintaining or enhancing services and the biological productivity of the land.***
- ***Security: Reducing all levels of production risk to ensure security (socio-economic and natural resources).***
- ***Protection: Maintaining the quality and functions of natural resources through the protection of the potential of the soil and water quality.***
- ***Viability: Ensuring economically viability.***
- ***Acceptability: Implementing actions that are socially acceptable and responsible.***

A good balance must be found between these five principles, as the basic 'pillars' on which sustainable land management for agriculture must be constructed."

"In approving development applications, authorities must consider the impact that a development may have on the municipality, agriculture and the rural landscape and must ensure through appropriate conditions and other measures that activities are appropriate in a rural context, that the development generate positive socio-economic returns, and do not compromise the environment or ability of the municipality to deliver on its mandate."

As mentioned '*agricultural output is the foundation of the Western Cape's rural economy and an important input to the urban economy'* therefore *'safeguarding the Province's agricultural resources, and productively using them without compromising biodiversity, heritage and scenic resources'* forms the basis of this EIA.

The development will play an important role in increasing the agricultural potential of the property and the long-term economic viability of the existing farming operation – which will help to sustain existing and future employment opportunities. Through implementation of suitable mitigation and management measures, the establishment and operation of the proposed development will not negatively impact the natural environment or surrounding land users. As such, all three pillars of sustainability can be promoted within the development proposal.

The proposed development site is a working farm located within an agriculturally dominated landscape. The location of the property is thus suitable for the expansion of agricultural activities that will support local economic development and generate employment opportunities within the agricultural sector. Furthermore, the proposed agricultural activities (poultry production) are not currently a main commodity in the region and will assist in diversification of the local agricultural sector. The proposed agricultural development will also run year-round and provide more permanent job opportunities compared to the traditional forms of agriculture in the region. Lastly, poultry broiler facilities produce a valuable byproduct in the form of nutrient rich manure which can be used in the existing farming undertaken on the property or surrounding areas thereby facilitating sustainable, circular agricultural practices.

***The Guideline on Need and Desirability (2017)*, compiled by the Department of Environmental Affairs, "*contains information on best practice and how to meet the peremptory requirements prescribed by the legislation and sets out both the strategic and statutory context for the consideration of the need and desirability of a development involving any one of the NEMA listed activities. Need and desirability is based on the principle of sustainability, set out in the Constitution and in NEMA, and provided for in various policies and plans...*" "*Addressing the need and desirability of a development is a way of ensuring sustainable development – in other words, that a development is ecologically sustainable and socially and economically justifiable – and ensuring the simultaneous achievement of the triple bottom-line.*"**

"The Guideline sets out a list of questions which should be addressed when considering need and desirability of a proposed development. These are divided into questions that relate to ecological sustainability and justifiable economic and social development. The questions that relate to ecological sustainability include how the development may impact ecosystems and biological diversity; pollution; and renewable and non-renewable resources. When considering how the development may affect or promote justifiable economic and social development, the relevant spatial plans must be considered, including Municipal Integrated Development Plans (IDP), Spatial Development Frameworks (SDF) and Environmental Management Frameworks (EMF). The assessment reports will need to provide information as to how the development will address the socio-economic impacts of the development, and whether any socio-economic impact resulting from the development impact on people's environmental rights. Considering the need and desirability of a development entails the balancing of these factors."

EIA GUIDELINE AND INFORMATION DOCUMENT SERIES (March 2013)

DEA&DP's Environmental Impact Assessment Guideline and Information Document Series is formally published in terms of Section 24J of NEMA. The published versions of the guidelines available in this series consist of the following guidelines – The underlined Guidelines particularly are used as a constant reference when undertaking any EIAs.

- **Guideline on Transitional Arrangements**
- **Generic Terms of Reference for EAPs and Project Schedules**
- **Guideline on Public Participation**
- **Guideline on Alternatives**
- **Guideline on Need and Desirability**
- **Guideline on Exemption Applications**

- **Guideline on Appeals**

The aforementioned guidelines are constantly considered throughout every EIA process forming the basis on which alternatives are developed and assessed. Additional Guidelines considered:

- **Guidelines for EMPs (June 2015)**
- **Guideline on Public Participation (DEA, 2017)**
- **Guideline for involving a Heritage Specialist in an EIA process (2005)**
- **Guideline for the review of Specialist Input in the EIA process (June 2005)**
- **Guideline on Need and Desirability (DEA, 2017)**

Planning legislation is addressed separately under Section E below.

6. Protocols

Explain how the proposed activity or development complies with the requirements of the protocols referred to in the NOI and/or application form

As a water use licence application (WULA) is required in terms of the National Water Act, 1998 (Act No. 36 of 1998) ("NWA"), the "One Environmental System" is applicable, specifically in terms of the synchronisation of the consideration of the application in terms of the NEMA and the NWA.

The decision on the Environmental Authorisation and the decision on the Water Use Licence Application (WULA) must all be made within the legislated timeframes in terms of the NEMA EIA Regulations. Furthermore, a parallel Public Participation Process must be undertaken in accordance with the requirements of the NEMA EIA Regulations advertising both the Basic Assessment Report (BAR) as well as the WULA together.

The proponent has initiated the water use authorisation application process regarding the proposed S21 (a) for the abstraction from the 2 boreholes on site; S21(c) and (i) for the proximity of infrastructure and boreholes to regulated areas of wetlands and drainage lines, and S21(g) for the installation of 3 septic tanks. The ELU has been confirmed by BOCMA. Please refer to Appendix G4: WULA.

Refer to this Department's Circular EADP 0028/2014: One Environmental Management System.

The "Procedures for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation [EA]" as published in Government Notice (GN) No. 320 of 20 March 2020 should be applied when considering various specialist input as part of the EA application for a proposed development. Protocols have been dealt with through the Site Sensitivity Verification Report (Appendix I). A summary of the SSVR is provided below:

The following environmental sensitivity themes were identified in the Screening Tool Report (Appendix I):

- **Agriculture Theme (Very High Sensitivity)**
- **Animal Species Theme (High Sensitivity)**
- **Aquatic Biodiversity Theme (Very High Sensitivity)**
- **Archaeological and Cultural Heritage Theme (Low Sensitivity)**
- **Civil Aviation Theme (Low Sensitivity)**
- **Defense Theme (Low Sensitivity)**
- **Palaeontology Theme (Very High Sensitivity)**
- **Plant Species Theme (Medium Sensitivity)**
- **Terrestrial Biodiversity Theme (Very High Sensitivity)**

*** It is important to note that the DEA screening tool automatically reverts to the highest sensitivity for the property/site.**

The following possible specialist studies were identified in the Screening Tool Report (Appendix I):

- **Landscape/Visual Impact Assessment**
- **Archaeological and Cultural Heritage Impact Assessment**
- **Paleontology Impact Assessment**
- **Terrestrial Biodiversity Impact Assessment**
- **Aquatic Biodiversity Impact Assessment**
- **Hydrology Assessment**
- **Traffic Impact Assessment**
- **Socio-Economic Assessment**
- **Ambient Air Quality Assessment**
- **Plant Species Assessment**
- **Animal Species Assessment**

The Site Sensitivity Verification Report (Appendix I) concluded that the environmental attributes/features on the site which will be sensitive to development are summarised as follows:

- **Agriculture Theme (LOW Sensitivity)**
- **Animal Species Theme (LOW Sensitivity)**
- **Aquatic Biodiversity Theme (Very High Sensitivity)**
- **Archaeological and Cultural Heritage Theme (Low Sensitivity)**
- **Civil Aviation Theme (Low Sensitivity)**
- **Defense Theme (Low Sensitivity)**
- **Paleontology Theme (LOW Sensitivity)**
- **Plant Species Theme (LOW Sensitivity)**
- **Terrestrial Biodiversity Theme (LOW Sensitivity)**

A Notification of Intent to Develop and Heritage Screener report was submitted to HWC for comment by the Heritage Specialist. According to the Heritage Specialist, "Based on the information available, it is unlikely that significant heritage resources will be negatively impacted by the proposed development and as such, no further heritage studies are recommended". We are awaiting comment from HWC, however it is anticipated that no further studies in this regard would be required.

Therefore, only the need for a Freshwater Impact Assessment and Geohydrological Assessment that has been determined.

- **Jeanne Snyman from EverWater has been appointed to undertake the Freshwater Impact Assessment (Appendix G2).**
- **GEOSS has been appointed to undertake the Geohydrological Impact Assessment whereby the attached sustainable yield report was provided (Appendix G3).**

SECTION D: APPLICABLE LISTED ACTIVITIES

List the applicable activities in terms of the NEMA EIA Regulations

Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 1**	Describe the portion of the proposed development to which the applicable listed activity relates.
1	***The development of facilities or infrastructure for the generation of electricity from a renewable resource where—*** ***~~(i) the electricity output is more than 10 megawatts but less than 20 megawatts;~~*** ***~~or~~*** ***(ii) the output is 10 megawatts or less but the total extent of the facility covers an area in excess of 1 hectare;*** ***excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs—*** ***(a) within an urban area; or*** ***(b) on existing infrastructure.***	**Solar Energy will be utilised to provide electricity for the proposed Broiler Facility. Solar Panels will be attached to the roofs of the proposed 20 Chicken Houses.** **The total extent of the solar panels covers an area in excess of 1ha however the solar panels will be located on the roofs of the proposed chicken houses. It is assumed as the Chicken Houses are not yet "existing infrastructure" this activity will be triggered.**
5	***The development and related operation of facilities or infrastructure for the concentration of –*** ***~~(i) more than 1 000 poultry per facility situated within an urban area, excluding chicks younger than 20 days;~~*** ***(ii) more than 5 000 poultry per facility situated outside an urban area, excluding chicks younger than 20 days;*** ***~~(iii) more than 5 000 chicks younger than 20 days per facility situated within an urban area; or~~*** ***~~(iv) more than 25 000 chicks younger than 20 days per facility situated outside an urban area.~~***	**The Broiler Facility will involve the establishment of 20 Broiler houses with each house containing approximately 17 000 birds. Therefore, 17 000 poultry will be housed per facility within a property zoned for Agriculture and found within a rural area.** **Therefore, number ii) will be triggered as each broiler facility will house more than 5000 poultry.**
12	***The development of—*** ***~~i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or~~*** ***ii) infrastructure or structures with a physical footprint of 100 square metres or more;*** ***where such development occurs—*** ***(a) within a watercourse;*** ***(b) in front of a development setback; or*** ***(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; —*** ***excluding—*** ***(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;*** ***(bb) where such development activities are related to the development of a port or*** ***harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;*** ***(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing*** ***Notice 3 of 2014, in which case that activity applies;***	**Four watercourse crossings are required, two are existing crossings and two are new crossings within the proposed road alignment. Three of the structures proposed will be low waterway bridges and one will be a suspended bridge structure.** **In addition, a portion of the electrical cable to be trenched will be crossing a watercourse prior to the cable becoming an overhead line. The water pipeline will also cross a watercourse.** **Lastly, portions of the water pipeline will also be crossing watercourses where it falls within the existing or proposed road network.**

	(dd) where such development occurs within an urban area; ***(ee) where such development occurs within existing roads, road reserves or railway line reserves; or*** ***(ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.***	**The proposed infrastructure/ structures associated with the water crossings will exceed the physical footprint of 100m² within a watercourse (or within 32m from a watercourse).**
19	***The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;*** ***but excluding where such infilling, depositing, dredging, excavation, removal or moving—*** ***a) will occur behind a development setback;*** ***b) is for maintenance purposes undertaken in accordance with a maintenance management plan;*** ***c) falls within the ambit of activity 21 in this Notice, in which case that activity applies;*** ***d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or*** ***e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.***	**Four watercourse crossings are required, two are existing crossings and two are new crossings within the proposed road alignment. Three of the structures proposed will be low waterway bridges and one will be a suspended bridge structure.** **In addition, a portion of the electrical cable to be trenched will be crossing a watercourse prior to the cable becoming an overhead line. The water pipeline will also cross a watercourse.** **Lastly, portions of the water pipeline will also be crossing watercourses where it falls within the existing or proposed road network.** **This will result in more than 10m³ of materials being infilled or deposited into and the excavation, removal and moving of soil, sand or rock from a watercourse.**
Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 3**	Describe the portion of the proposed development to which the applicable listed activity relates.
2	**The development of reservoirs, excluding dams, with a capacity of more than 250 cubic metres.** **Western Cape** **i. A protected area identified in terms of NEMPAA, excluding conservancies.** **ii. In areas containing indigenous vegetation; or** ~~**iii. Inside urban areas:**~~ ~~**(aa) Areas zoned for use as public open space; or**~~ ~~**(bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, or zoned for a conservation purpose.**~~	**Two reservoirs are proposed consisting of 300kl each (approx. 300 cubic metres each) however they will be constructed on fallow agricultural land. They will not fall within a Protected Area or in areas containing indigenous vegetation.** **Therefore, this Activity is NOT triggered.**
4	**The development of a road wider than 4 metres with a reserve less than 13,5 metres.** **Western Cape:** **In areas containing indigenous vegetation**	**The road will be wider than 4 metres (max 6m) but falls largely within areas previously ploughed, cultivated and or utilised as grazing, therefore not in an area containing indigenous vegetation. It is possible that small areas particularly crossing the**

		watercourses would contain small remnants of indigenous vegetation and as no threshold is given, as a precaution, it is listed here as triggered. **Note:** the overall total of indigenous vegetation removal will NOT exceed 300m^2.
10	The development and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres. Western Cape: All areas outside urban areas	This activity will NOT be triggered as the Diesel Tank is 2200L which relates to 2.2m^3 and will therefore be well under the threshold of 30m^3.
12	The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. Western Cape i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; ii. Within critical biodiversity areas identified in bioregional plans; ~~iii. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas;~~ ~~iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; or~~ v. On land designated for protection or conservation purposes in an Environmental Management Framework adopted in the prescribed manner, or a Spatial Development Framework adopted by the MEC or Minister.	The internal road realignment network could potentially cross small patches of indigenous vegetation, specifically at water crossings. However, our calculations confirm that this will not exceed 300m^2. Therefore, this Activity is NOT triggered.
14	The development of— ~~(i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres; or~~ (ii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs— (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour. Western Cape i. Outside urban areas: (aa) A protected area identified in terms of NEMPAA, excluding conservancies;	Four watercourse crossings are required, two are existing crossings and two are new crossings within the proposed road alignment. Three of the structures proposed will be low waterway bridges and one will be a suspended bridge structure. In addition, a portion of the electrical cable to be trenched will be crossing a watercourse prior to the cable becoming an overhead line. The water pipeline will also cross a watercourse. Lastly, portions of the water pipeline will also be crossing watercourses where it falls within

	(bb) National Protected Area Expansion Strategy Focus areas; **(cc) World Heritage Sites;** **(dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;** **(ee) Sites or areas listed in terms of an international convention;** **(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;** **(gg) Core areas in biosphere reserves; or** **(hh) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined.**	**the existing or proposed road network.** **It must be noted that the majority of these activities fall outside CBA/ESAs. However, a portion of the trenched electrical cable, and two of the river crossings fall partially with CBA/ESAs. The proposed infrastructure/ structures associated with these activities will exceed 10m² within 32m from a watercourse.**
18	**The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre.** **Western Cape** **i. Areas zoned for use as public open space or equivalent zoning;** **ii. All areas outside urban areas:** **(aa) Areas containing indigenous vegetation;** ~~**(bb) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined; or**~~ ~~**iii. Inside urban areas:**~~ ~~**(aa) Areas zoned for conservation use; or**~~ ~~**(bb) Areas designated for conservation use in Spatial Development Frameworks**~~ ~~**adopted by the competent authority.**~~	**The existing roads are approximately 3 metres and, where applicable, will be widened by 3 metres to a maximum width of 6 metres. No roads will exceed 6m in width.** **A new road linking the internal road network will be constructed as a result of biosecurity reasons, to improve traffic flow and safety, and to improve river crossings. The portions of the road actually falling within "areas containing indigenous vegetation" would be minimal and nowhere near 1km in length. The majority of the road will fall in fallow agricultural fields.** **As existing roads will NOT be widened by more than 4 metres and the existing roads will not be lengthened by more than 1km, particularly in areas of indigenous vegetation, this activity is NOT triggered.**
Note: • The listed activities specified above must reconcile with activities applied for in the application form. The onus is on the Applicant to ensure that all applicable listed activities are included in the application. If a specific listed activity is not included in an Environmental Authorisation, a new application for Environmental Authorisation will have to be submitted. • Where additional listed activities have been identified, that have not been included in the application form, and amended application form must be submitted to the competent authority.		

List the applicable waste management listed activities in terms of the NEM:WA

Activity No(s):	Provide the relevant **Basic Assessment Activity(ies)** as set out in **Category A**	Describe the portion of the proposed development to which the applicable listed activity relates.
N/A		

List the applicable listed activities in terms of the NEM:AQA

Activity No(s):	Provide the relevant **Listed Activity(ies)**	Describe the portion of the proposed development to which the applicable listed activity relates.
N/A		

SECTION E: PLANNING CONTEXT AND NEED AND DESIRABILITY

1.	Provide a description of the preferred alternative.

EFRC Agri Operations (Pty) Ltd. (Elgin Free Range Chickens) propose the development of a Free-Range Poultry Broiler Facility. The Broiler Facility will involve the establishment of 20 Broiler Houses (approx. 1044m² per facility) with free range pasture located at the side of each house. Each facility will house approximately 17 000 birds. An Ablution facility, Guard House, Spray Race and Refrigerated Container will be located at the entrance to the site. Furthermore, an additional Ablution Facility and Residential Dwelling will be located at the broiler facilities.

Access & Roads:

An existing access road will be utilised and numerous internal roads will be upgraded and realigned (6m width required) where applicable for biosecurity reasons, to improve traffic flow and safety, and to improve river crossings. Four watercourse crossings are required, two are existing crossings and two are new crossings within the proposed road alignment. Three of the structures proposed will be low waterway bridges and one will be a suspended bridge structure.

Low Water Bridges:

Low waterway bridges are reinforced concrete structures with a driving surface (final top level) raised above ground (natural ground level) and these structures cross waterways nearly perpendicular to the natural water flow direction of the stream. Pipes will be installed at set intervals across the bridge length to allow water to freely pass through.

The final top level of the bridge is horizontal (level) and extends across the total width of the existing stream. Where the horizontal bridge section ends at the edge of the stream a further concrete slab on both ends extends at an incline (approach ramps) to a level 1m above natural ground level. This is to mitigate vehicle approach at a slope towards the bridge.

Bridge foundations are concrete walls with footings varying between 1,0 to 1,5m deep below natural ground level or until suitable founding material is found. G5 type materials will be used to fill the void between foundations walls to support the concrete slab (driving surface). However, where suitable founding materials is reached less than 1.0m deep below natural ground level, foundation walls are not required, and G5 type fill material is adequate.

A combination of Gabion baskets, blankets and biddim material will be used to prevent erosion directly up and downstream from the bridge. These erosion prevention measures will continue along the total length of the bridge structure, including the approach ramps on either side. Along the upstream side of the bridge the top of the gabion baskets will be level with the invert level of the pipes going through the concrete. On the downstream side the top of the gabion baskets will be flush with the top of the driving surface.

Protruding concrete blocks will be placed at intervals on top of the driving surface along the edge of the road to indicate the side of the road during flood conditions. The height of the blocks will indicate if the water level is suitable for safe vehicle crossing.

Suspended bridge structure

Where the natural runoff channel is deep and narrow) a suspended bridge will span across. Suspended bridges are reinforced concrete structures with a driving surface (final top level) raised above ground (natural ground level). The structure crosses the waterway at a skew angle to align with the approach roadway alignment. The final top level of the bridge is horizontal (level) and has upstand beams on both sides. Where the horizontal bridge section ends at the edge of the stream a further concrete slab on both ends extends at an incline (approach ramps) to natural ground level. This is to mitigate vehicle approach at a slope towards the bridge. There are 3 walls supporting the bridge, 2 on both sides of the stream and one in the centre.

Bridge support walls (3 in total) are reinforced concrete which is founded on rock. The foundations are sunk 300mm deep into the rock and water will flow in between the supporting walls. The flow area through bridge support walls is more than the width of the existing natural channel hence no channelling of the stream occurs.

Gabion structures both at the upstream and downstream side of the supporting walls will protect the structure against erosion.

As there is not enough space at the suspended bridge to divert stream flow to accommodate wet works, a temporary upstream coffer dam must be constructed to temporarily divert stream water away from the wet works during construction.

Electricity:

The Electrical Network Service Provider (NSP) for the site is Eskom. The site is being fed from the Haamanshof-Farmers 3 11kV overhead line (OHL) feeder which is then stepped down to the 400V voltage level via a 100kVA distribution transformer. As the electrical network of Eskom currently has insufficient capacity to supply the entire project with the necessary electricity, RenEnergy was tasked to design a plan where renewable energy is used to supply the electricity needs of the project. The existing Eskom supply will be supplemented with Solar Energy which is more sustainable.

Based on the electrical equipment that would be installed inside each one of the 20 broiler houses, the broiler houses will have a total peak power requirement of around 301.5kVA, including the new infrastructure at the entrance of the farm and requirement of the existing infrastructure, the total load requirement for the farm is estimated to be 312kVA. Solar panels are proposed on the roofs of the chicken houses. At a designated area close to the delivery point of Eskom the containerised solar batteries (distribution station) will be placed, and a generator room will be built to house the backup generators. A bunded Diesel Tank (2200L) will also be located within close vicinity of the Generator Room and Eskom delivery point. A low voltage (LV) underground cable will go from the existing Eskom point/transformer, via a trench, to the distribution station. A step-up transformer and 11KV overhead line will then distribute power from the distribution station to the proposed facilities. The electrical cable will have a copper core and isolated with PVC. Where the cable crosses the watercourse a treated timber pole will span the watercourse, and the cable will be attached to the pole.

Water:

A Water Treatment Plant is proposed to treat the water from the existing Boreholes (BH1 & BH2) which will be fed via a pipeline from the boreholes to the Water Treatment Plant. Thereafter, treated water will be sent to two proposed reservoirs (300kl each) on site. Water will be sent from the reservoir directly to the broiler houses. Water storage tanks will be located at each chicken house (1 x 5000 L & 1 x 1000 L). All water pipelines will run, as far as possible, on the side of existing and new roads. The water pipeline consists of a PVC pipe. Where the water pipeline crosses the watercourse a treated timber pole will span the watercourse, and the pipeline will be attached to the pole.

Waste:

Sewage - Underground septic tanks will be located at the new ablution and domestic dwelling to manage domestic sewerage. The tanks will have a capacity of ±11m3 and will fall outside a 100m buffer from any watercourse/ wetland. Please refer to Annexure E16 for the type of tanks proposed.

Mortalities - Cold storage will be utilised as temporary storage for mortalities which will then be disposed of at a bio-approved landfill site or processed at an existing rendering plant (off-site).

Solid Waste – Domestic organic materials will be composted onsite as part of each households composting arrangement. The remaining solid waste will be separated into recycled and non-recycled materials and removed from the site on a weekly basis to the local municipal waste facility.

Manure: Manure will be dry swept and cleaned out of the chicken houses whereafter high-pressure hoses (washing pumps) will be used to clean the pens with any residual water washed onto the free-range pastures and lost through evaporation. Chicken Manure will be used directly in the agricultural industry to be collected by surrounding farmers for crop fertilisation.

The proposed development footprint of the broiler facilities are located within old agricultural fields that have been under cultivation since before 1966 and during the last 10-year cycle. The location and layout of the preferred development alternative has been developed based on existing access routes, service availability, prevailing wind directions, environmental sensitivities and biosecurity requirements and has attempted to minimize environmental impacts as much as possible.

2.	Explain how the proposed development is in line with the existing land use rights of the property as you have indicated in the NOI and application form? Include the proof of the existing land use rights granted in Appendix E21.

The proposed development site is zoned Agriculture 1 and is currently operating as a working farm. The application is for agricultural purposes and is therefore in line with current land use zoning for the site. In terms of the Breede River Municipality Zoning Scheme By-Law, a Consent Use on Agriculture for 'Intensive Animal farming', is required. Approval for consent use (intensive feed farming) is still to be obtained.

3.	Explain how potential conflict with respect to existing approvals for the proposed site (as indicated in the NOI/and or application form) and the proposed development have been resolved.

The proposed development will not be in conflict with any existing approvals for the proposed development site. The proposed broiler facility will complement the existing development activities onsite.

4.	Explain how the proposed development will be in line with the following?
4.1	The Provincial Spatial Development Framework.

The Western Cape PSDF is a planning document that guides district and local spatial initiatives such as IDP's and SDF's. It aims to create a coherent framework for the province's urban and rural areas. The PSDF aims to guide the location and form of public investment in the western cape's urban and rural areas. Whilst it cannot influence private sector investment patterns, it has an important contribution in terms of reducing business risk by providing clarity and certainty on where public Infrastructure investment will be targeted, thereby opening new economic opportunities in these areas. The current economic state with increasing levels of unemployment, and recent job losses in agriculture, all add to the high levels of rural poverty and unemployment. The provincial SDF emphasizes the importance and need for economic growth, job creation and poverty alleviation. The proposed development will create new direct and indirect job opportunities during the construction and operational phase of the development.

Agricultural output is foundational to the rural economy in the Western Cape. However, there is limited suitable land available for the expansion of agricultural activities and using these land areas without compromising biodiversity, heritage, and scenic resources, remains a key challenge. The property on which the development activities are proposed, is a working farm located in a broader agricultural landscape. The location of the proposed new development is on old agricultural fields, does not coincide with archaeological and cultural heritage resources and given the development location, it is unlikely that any palaeontological resources will be impacted. The development activity is thus in line with the PSDF in that it will allow feasible expansion of agriculture within the Western Cape and facilitate job creation within this sector.

Furthermore, the PSDF promotes sustainable development which requires that economic, social, and environmental aspects relating to a development proposal are considered. The development will play an important role in increasing the agricultural potential of the property and the long-term economic viability of the existing farming operation – which will help to sustain existing and future employment opportunities. Through implementation of suitable mitigation and management measures, the establishment and operation of the proposed development will also not negatively impact the natural environment or surrounding land users. As such, all three pillars of sustainability can be promoted within the development proposal.

4.2	The Integrated Development Plan of the local municipality.

The Breede Valley Municipality IDP (2022-2027) encourages local economic development with a focus on creating employment opportunities for residents. One of the 6 Strategic Objectives of the IDP is "*to create an enabling environment for employment and poverty eradication through proactive economic development and tourism (SO2)*" through:

- **Creating a healthier investor-friendly environment;**

- **Market Breede Valley as a a preferred area for business investment; and**
- **Strengthen relations with business chambers, tourism and agricultural sectors.**

Furthermore, Programme 5.9A specifically looks at "expanding Rural and Agricultural development".

The proposed development site is a working farm located within an agriculturally dominated landscape. The location of the property is thus suitable for the expansion of agricultural activities that will support local economic development and generate employment opportunities within the agricultural sector. Furthermore, the proposed agricultural activities (poultry production) are not currently a main commodity in the region and will assist in diversification of the local agricultural sector. The proposed agricultural development will also run year-round and provide more permanent job opportunities compared to the traditional forms of agriculture in the region. Lastly, poultry broiler facilities produce a valuable byproduct in the form of nutrient rich manure which can be used in the existing farming undertaken on the property or surrounding areas thereby facilitating sustainable, circular agricultural practices.

Programme 5.7 (A) looks at Development of Alternative Energy Sources. In order to address the challenges of climate change, Breede Valley Municipality will increasingly have to transition to a Green Economy in the future. The current crisis in the electricity sector relates to electricity supply shortages and an increasing carbon footprint. It is imperative that the green economy concept be regarded and pursued as a tool to transform the current state of the local economy to one that is more sustainable from an economic, social and environmental perspective. The proposed development will include the installation of Solar Panels to supplement the energy requirements of the Broiler Facilities and therefore reduce the demand on Eskom.

The proposed activities are thus well aligned with the IDP of the local municipality.

4.3.	The Spatial Development Framework of the local municipality.

The development principles are the guiding factors that will endeavour to assist with the spatial structuring of the urban environment, which will further shape Breede Valley Municipality into a place where people can live, work, play and visit.

Development Principle 1 is 'Economic development': "*A diverse economic base attracts new business and investment. The Breede Valley Municipality promotes local talent and provides various opportunities for everyone to start and grow business ventures. This development principle will be achieved through:*

- ***The establishment of a secondary commercial hub;***
- ***Identifying niche market opportunities;***
- ***Revitalisation of the Central Business District (CBD); and***
- ***The protection of agricultural land as an economic contributor*."**

Agricultural is one of the spatial structuring elements of the SDF: According to Section 3.1.4 (Agriculture) Historically agricultural land has not played a significant role in urban structuring. This is based on the need for agricultural production areas in close proximity to the settlements on account of cost advantages due to proximity to the market, direct and indirect employment opportunities for the inhabitants, stimulation of secondary business activities (e.g. marketing) and food security. These areas should be reserved as prime agricultural land in the municipality and be protected from any development or land uses that may have a negative impact on the agricultural potential of the area.

Under Key Typologies, 'Agriculture' is defined as "*The cultivation of land for crops and plants or the breeding of animals or the operation of a game farm on an extensive basis on natural veld or land*." The proposed Broiler Facility is therefore in keeping with the SDF.

4.4.	The Environmental Management Framework applicable to the area.

While no specific EMF has been outlined for the region, several strategic documents for the area include environmental management aspects. The Breede Valley IDP includes "to ensure a safe, healthy, clean and sustainable external environment for all Breede Valley's people" (SO3) as one of the 6 Strategic Objectives of the IDP. One of the aims is to "*ensure the optimal use of land within a political, social, cultural, environmental and economic context*". The proposed development allows for intensification of agricultural practices on non-

productive land within an existing farm and thus minimises the transformation of additional land, whilst protecting and promoting food production.

In response to aspects of water scarcity and drought the IDP encourages the Investigation of the possible use of alternative water resources i.e. groundwater and increased rainwater harvesting. The proposed chicken farm intends to use Groundwater from existing boreholes on the property. Furthermore, Rainwater harvesting will be encouraged throughout the farm.

5.	Explain how comments from the relevant authorities and/or specialist(s) with respect to biodiversity have influenced the proposed development.

The freshwater specialist's recommendations/ mitigation measures have been included within the recommended conditions of approval. Comments received from I&APs with respect to biodiversity have been addressed in the Comments and Response Report (Appendix F3).

6.	Explain how the Western Cape Biodiversity Spatial Plan (including the guidelines in the handbook) has influenced the proposed development.

The Western Cape Biodiversity Spatial Plan (WCBSP) is a spatial tool that forms part of a broader set of national biodiversity planning tools and initiatives that are provided for in national legislation and policy. It comprises the Biodiversity Spatial Plan Map of biodiversity priority areas, accompanied by contextual information and land use guidelines that make the most recent and best quality biodiversity information available for use in land use and development planning, environmental assessment and regulation, and natural resource management.

The main purpose of a biodiversity spatial plan is to ensure that the most recent and best quality spatial biodiversity information can be accessed and used to inform land use and development planning, environmental assessments and authorisations, natural resource management and other multi-sectoral planning processes. A biodiversity spatial plan achieves this by providing a map of terrestrial and freshwater areas that are important for conserving biodiversity pattern and ecological processes – these areas are called Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs).

According to the Western Cape Biodiversity Spatial Plan (WCBSP) Critical Biodiversity Areas (CBA's) indicates areas of land as well as aquatic features which must be safeguarded in their natural state if biodiversity is to persist and ecosystems are to continue functioning. CBAs incorporate:

i. **Areas that are required to meet biodiversity targets for species, ecosystems or ecological processes and infrastructure. These include:**
    - **All areas required to meet biodiversity pattern (e.g. species, ecosystems) targets;**
    - **Critically Endangered (CR) ecosystems (terrestrial, wetland and river types);**
    - **All areas required to meet ecological infrastructure targets, which are aimed at ensuring the continued existence and functioning of ecosystems and delivery of essential ecosystem services; and**
    - **Critical corridors to maintain landscape connectivity.**
ii. **Areas that need to be safeguarded in order to meet national biodiversity thresholds;**
iii. **Areas required to ensure the continued existence and functioning of species and ecosystems, including the delivery of ecosystem services; and/or**
iv. **Important locations for biodiversity features or rare species.**

The WCBSP used a systematic biodiversity planning approach to identify priority areas that meet both national and provincial targets in an efficient manner, emphasizing landscape resilience to a changing climate, and while trying to avoid conflict with other land uses.

The 2023 Western Cape Biodiversity Spatial Plan (WCBSP) was formally adopted into law on 13 December 2024 (Gazette Extraordinary No. 9017), in terms of the Western Cape Biodiversity Act (Act No. 6 of 2021). This plan supersedes the 2017 WCBSP and now serves as the official spatial framework for biodiversity conservation and land-use decision-making in the province.

Based on the 2023 WCBSP map (Figure 5), several terrestrial Critical Biodiversity Areas (CBA's) were found along the remaining natural areas on the property. These areas are areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure, and such areas are to be maintained in a natural or near-natural state, with no further loss of natural habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land uses are appropriate.

Furthermore, aquatic Ecological Support Areas (ESA1: Ground Water Source) were also indicated specifically towards the south and east of the property. These areas play a vital role in helping to sustain the baseflow of surrounding rivers, wetlands, and streams during dry periods.

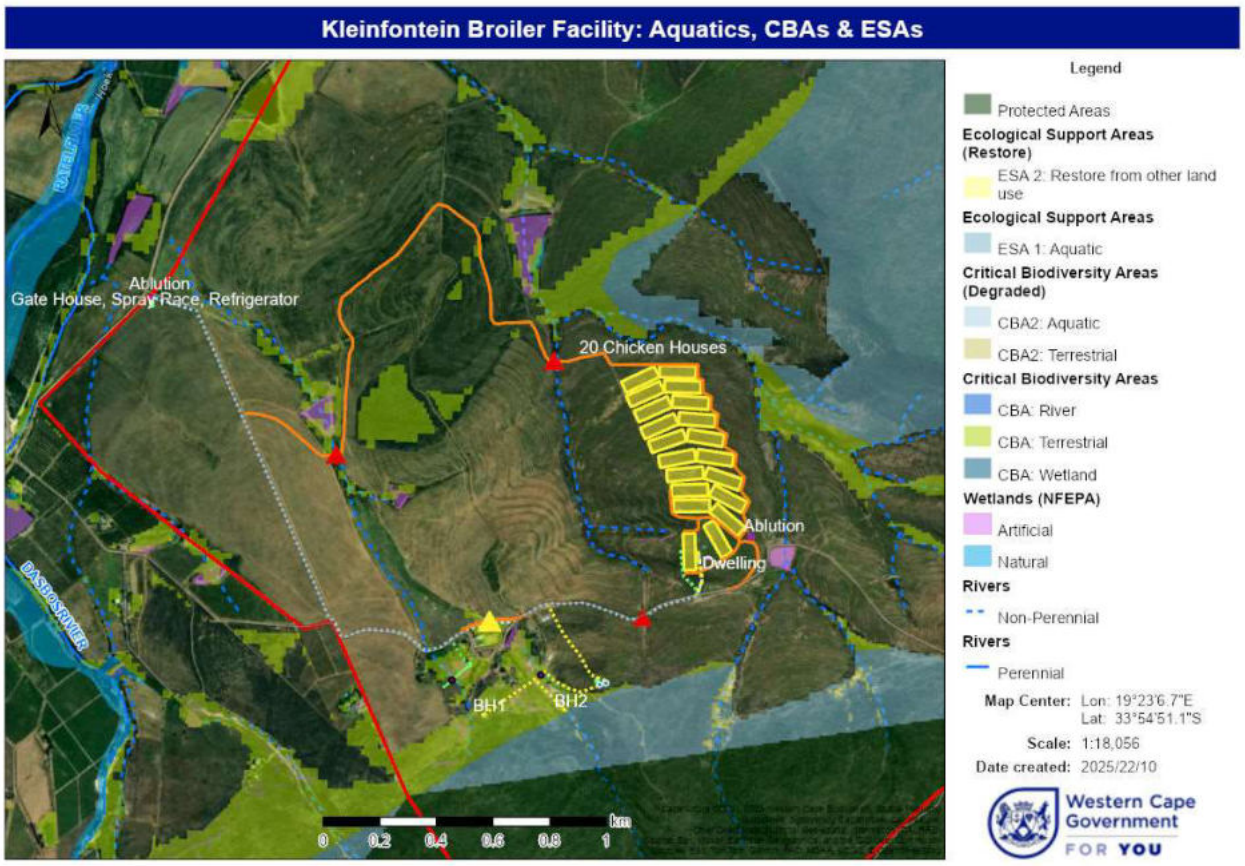

***Figure 5:** 2025 Western Cape Biodiversity Spatial Plan for the proposed activities within the site (red line) (CFM, 2025).*

Freshwater Ecosystem Priority Areas (FEPAs) are strategic spatial priorities identified to support the long-term conservation of freshwater ecosystems and the sustainable use of water resources. According to the National Freshwater Ecosystem Priority Areas (NFEPA) dataset and the National Wetlands Map (NWM5), the broader catchment in which the project site is located is classified as a FishFEPA (Fish support area).

FishFEPAs, or fish sanctuaries, are sub-quaternary catchments that are critical for the protection of threatened and near-threatened freshwater fish species indigenous to South Africa. These catchments are denoted by either a red or black fish symbol on the map. The sub-quaternary catchment associated with the project area is marked with a black fish, indicating the presence of at least one population of vulnerable or near-threatened fish species, or a population of special concern. The primary objective of FishFEPAs is to prevent further decline in the condition of aquatic ecosystems, particularly those supporting sensitive fish species. As such, no further deterioration in river condition should occur within fish sanctuaries, and no new permits should be issued for the introduction or stocking of invasive alien fish species in these catchments.

In addition to the above, the National Wetlands Map classifies the Ratel River and its larger associated floodplain as East Coast Shale Renosterveld_Floodplain wetland, currently in a C condition (FEPA rank 5). These wetlands are marked as being critically endangered – both from a vegetation and wetland ecosystem perspective.

7.	Explain how the proposed development is in line with the intention/purpose of the relevant zones as defined in the ICMA.
N/A	
8.	Explain whether the screening report has changed from the one submitted together with the application form. The screening report must be attached as Appendix I.
The Screening Tool has not changed. Refer to Appendix I.	
9.	Explain how the proposed development will optimise vacant land available within an urban area.
N/A - Located outside the urban area	
10.	Explain how the proposed development will optimise the use of existing resources and infrastructure.

The proposed development is planned on previously disturbed, unproductive agricultural land, repurposing an area no longer viable for high-yield farming. This approach avoids impacting undisturbed ecosystems and makes efficient use of degraded land. Refer to Figure 6 below showing the cultivation areas in relation to the proposed activities and site boundary. Strategically located near essential service infrastructure, including water (existing boreholes) and electricity (combination of existing Eskom and new solar facility), the development can integrate into existing networks, reducing the need for extensive new installations. The proposed development will also operate within a determined sustainable yield and existing registered water allocations. Existing farm roads and water crossings are being utilised where possible.

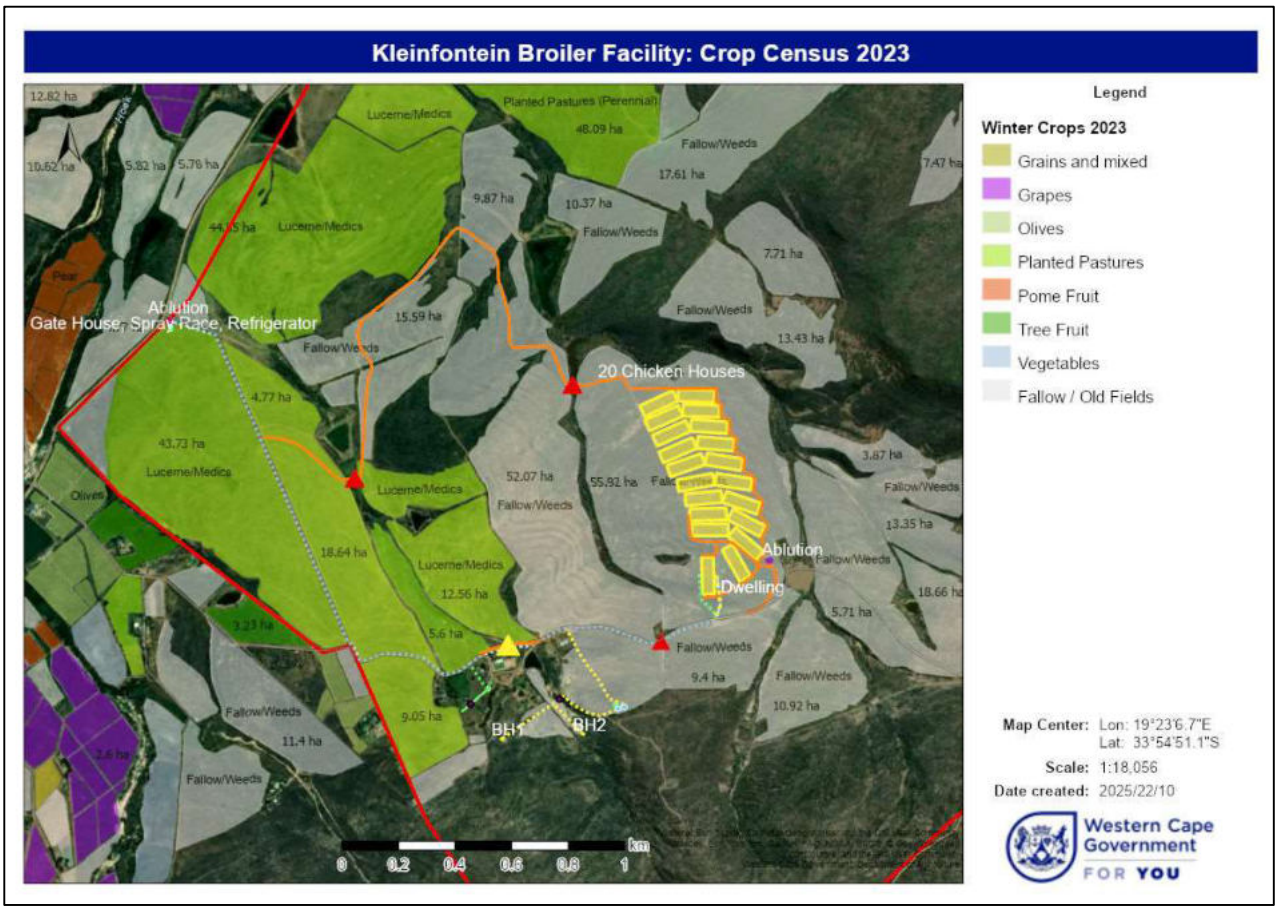

***Figure 6:** Showing the proposed activities in relation to the Crop Census undertaken in 2023. The property boundary is shown in red (CFM, 2025).*

11.	Explain whether the necessary services are available and whether the local authority has confirmed sufficient, spare, unallocated service capacity. (Confirmation of all services must be included in Appendix E16).

Electricity: The Electrical Network Service Provider (NSP) for the site is Eskom. The site is being fed from the Haamanshof-Farmers 3 11kV overhead line (OHL) feeder which is then stepped down to the 400V voltage level via a 100kVA distribution transformer. As the electrical network of Eskom currently has insufficient capacity to

supply the entire project with the necessary electricity, RenEnergy was tasked to design a plan where renewable energy is used to supply the electricity needs of the project. The existing Eskom supply will therefore be supplemented with solar energy which is more sustainable.

Based on the electrical equipment that would be installed inside each one of the 20 broiler houses, the broiler houses will have a total peak power requirement of around 301.5kVA, including the new infrastructure at the entrance of the farm and requirement of the existing infrastructure, the total load requirement for the farm is estimated to be 312kVA. Solar panels are proposed on the roofs of the chicken houses. At a designated area close to the delivery point of Eskom the containerised solar batteries (distribution station) will be placed, and a generator room will be built to house the backup generators. A bunded Diesel Tank (2200L) will also be located within close vicinity of the Generator Room. A low voltage (LV) underground cable will go from the existing Eskom point/transformer, via a trench, to the distribution station. A step-up transformer and 11KV overhead line will then distribute power from the distribution station to the proposed facilities. The electrical cable will have a copper core and isolated with PVC. Where the cable crosses the watercourse a treated timber pole will span the watercourse, and the cable will be attached to the pole.

Water: A Water Treatment Plant is proposed to treat the water from the existing Boreholes (BH1 & BH2) which will be fed via a pipeline from the boreholes to the Water Treatment Plant. Thereafter, treated water will be sent to two proposed reservoirs (300kl each) on site. Water will be sent from the reservoir directly to the broiler houses. Water storage tanks will be located at each chicken house (1 x 5000 L & 1 x 1000 L). All water pipelines will run, as far as possible, on the side of existing and the new roads. The water pipeline consists of a PVC pipe. Where the water pipeline crosses the watercourse a treated timber pole will span the watercourse, and the pipeline will be attached to the pole.

***Water will be obtained from the existing boreholes on site and authorisation will be obtained from BOCMA* (refer to Appendix G4). Proof of sustainable yield of the borehole is included in Appendix G3.**

Sewage: Underground septic tanks will be located at the new ablution and domestic dwelling to manage domestic sewerage. The tanks will have a capacity of ±11m³ and will fall outside a 100m buffer from any watercourse/ wetland. Please refer to Annexure E16 for the type of tanks proposed.

Waste:

Mortalities - Cold storage will be utilised as temporary storage for mortalities which will then be disposed of at a bio-approved landfill site or processed at an existing rendering plant (off-site).

Solid Waste – Domestic organic materials will be composted onsite as part of each households composting arrangement. The remaining solid waste will be separated into recycled and non-recycled materials and removed from the site on a weekly basis to the local municipal waste facility, as per standard procedures.

Chicken Manure: will be used directly in the agricultural industry to be collected by surrounding farmers for crop fertilisation. Manure will be dry swept and cleaned out of the chicken houses whereafter high-pressure hoses (washing pumps) will be used to clean the pens with any residual water lost through evaporation.

12.	In addition to the above, explain the need and desirability of the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013) or the DEA's Integrated Environmental Management Guideline on Need and Desirability. This may be attached to this BAR as Appendix K.

Refer Appendix K.

SECTION F: PUBLIC PARTICIPATION

The Public Participation Process ("PPP") must fulfil the requirements as outlined in the NEMA EIA Regulations and must be attached as Appendix F. Please note that if the NEM: WA and/or the NEM: AQA is applicable to the proposed development, an advertisement must be placed in at least two newspapers.

1. Exclusively for linear activities: Indicate what PPP was agreed to by the competent authority. Include proof of this agreement in Appendix E22.

All linear activities are located inside the property. The proposed roads and service infrastructure forms part of the associated infrastructure of the Broiler Facilities. The PPP is as per below.

2. Confirm that the PPP as indicated in the application form has been complied with. All the PPP must be included in Appendix F.

The section below outlines the various tasks undertaken/ to be undertaken as part of the Public Participation Process as stipulated in the EIA Regulations 2017, as amended. All documentation will be in English. Site Notices & Notification Letters will be in English and Afrikaans.

Pre-application Phase

- **Interested and Affected Parties (I&APs) were identified throughout the process (Appendix F1).**
- **Notification letters were emailed to all identified I&APs informing them of the activity and the opportunity to comment. Neighbouring landowners were requested to inform all those residing on their farms of the application and the opportunity to comment.**
- **Site notices were erected at the entrance to the farm.**
- **An advertisement was placed in the Worcester Standard.**
- **A copy of the draft Basic Assessment Report was made available on our company website www.phsconsulting.co.za or on request via email.**
- **A 30-day commenting period was allowed.**

Application Phase:

- **The official Application Form has been submitted to DEA&DP.**
- **All comments received during the pre-application phase commenting period has been included in the Statutory Draft Basic Assessment Report which has been circulated to all registered I&APs, Organs of State and State Departments for a further 30-day commenting period in the statutory process.**
- **Notification letters have been emailed to all I&APs (including all State Departments) informing them of the opportunity to comment.**
- **A Comments and Response Table has been included.**
- **Further comments on the BAR are received and responded to where applicable.**
- **Preparation of the FINAL BAR for submission to DEA&DP: to include the proof of the Public Participation Process, comments received and our responses to these comments.**

Consultation with the Competent Authority:

The Provincial Department of Environmental Affairs and Development Planning (DEA&DP) has been identified as the Competent Authority. Consultation with the competent authority will be ongoing throughout the environmental process and will include the following as a minimum:

- **Submission of the Notice of Intent to submit an application form (COMPLETED);**
- **Circulation of the Pre-Application BAR for comment (COMPLETED);**
- **Submission of Application Form (COMPLETED);**
- **Circulation of the updated BAR for comment (THIS DOCUMENT); and**
- **Submission of the updated BAR for decision making.**

3. Confirm which of the State Departments and Organs of State indicated in the Notice of Intent/application form were consulted with.

DEADP DIRECTORATE: INTEGRATED ENVIRONMENTAL MANAGEMENT (REGION 1)
Samornay Smidt

CAPE NATURE
Alana Duffell-Canham / Leandra Knoetze

WESTERN CAPE DEPARTMENT OF AGRICULTURE
Cor van der Walt

DEPARTMENT TRANSPORT AND PUBLIC WORKS
Devlin Fortuin / Venessa Stoffels

DEA&DP DIRECTORATE: WASTE MANAGEMENT
Lance McBain-Charles

DEA&DP DIRECTORATE: POLLUTION AND CHEMICAL MANAGEMENT
Gunther Frantz (cc: Rabiah Reynolds)

PROVINCIAL DEPT AGRICULTURE: VETERINARY SERVICES
Dr L Hon

HERITAGE WESTERN CAPE
Emily-Jane Vowles

BOCMA
Elkerine Rossouw
Mashudu Mmbadi-Muligidi

Department of Health and Wellness: Western Cape
Dr Keith Cloete (Head of Department)

DEADP Directorate: Air Quality Management
Dr. Joy Leaner

CAPE WINELANDS DISTRICT MUNICIPALITY
Quinton Balie - Deputy Director: Spatial Planning and Environmental Management

BREEDE VALLEY LOCAL MUNICIPALITY
Jean de Villiers – Director: Planning, Development and Integrated Services
Carisa Pieters – Manager: Town Planning

Please refer to Appendix F of the BAR.

4. If any of the State Departments and Organs of State were not consulted, indicate which and why.

N/A

5. if any of the State Departments and Organs of State did not respond, indicate which.

The first pre-application PPP ran from Thursday 21st August – Monday 22 September 2025.

The following State Departments did not respond:

- **WESTERN CAPE DEPARTMENT OF AGRICULTURE**
- **DEA&DP DIRECTORATE: WASTE MANAGEMENT**
- **DEA&DP DIRECTORATE: POLLUTION AND CHEMICAL MANAGEMENT**
- **PROVINCIAL DEPT AGRICULTURE: VETERINARY SERVICES**
- **CAPE WINELANDS DISTRICT MUNICIPALITY**
- **BREEDE VALLEY LOCAL MUNICIPALITY**

The following State Departments will be notified during the 2nd PPP:

- **DEPARTMENT OF HEALTH AND WELLNESS: WESTERN CAPE**
- **DEADP DIRECTORATE: AIR QUALITY MANAGEMENT**

6. Provide a summary of the issues raised by I&APs and an indication of the manner in which the issues were incorporated into the development proposal.

The first pre-application PPP ran from Thursday 21st August – Monday 22 September 2025.

Please refer to Appendix F3: Comments and Responses Report which includes all the comments raised by I&APs and the responses thereto.

Note:

A register of all the I&AP's notified, including the Organs of State, and all the registered I&APs must be included in Appendix F. The register must be maintained and made available to any person requesting access to the register in writing.

The EAP must notify I&AP's that all information submitted by I&AP's becomes public information.

Your attention is drawn to Regulation 40 (3) of the NEMA EIA Regulations which states that *"Potential or registered interested and affected parties, including the competent authority, may be provided with an opportunity to comment on reports and plans contemplated in subregulation (1) prior to submission of an application but **must** be provided with an opportunity to comment on such reports once an application has been submitted to the competent authority."*

All the comments received from I&APs on the pre -application BAR (if applicable and the draft BAR must be recorded, responded to and included in the Comments and Responses Report and must be included in Appendix F.

All information obtained during the PPP (the minutes of any meetings held by the EAP with I&APs and other role players wherein the views of the participants are recorded) and must be included in Appendix F.

Please note that proof of the PPP conducted must be included in Appendix F. In terms of the required "proof" the following is required:

- a site map showing where the site notice was displayed, dated photographs showing the notice displayed on site and a copy of the text displayed on the notice;
- in terms of the written notices given, a copy of the written notice sent, as well as:
  - if registered mail was sent, a list of the registered mail sent (showing the registered mail number, the name of the person the mail was sent to, the address of the person and the date the registered mail was sent);
  - if normal mail was sent, a list of the mail sent (showing the name of the person the mail was sent to, the address of the person, the date the mail was sent, and the signature of the post office worker or the post office stamp indicating that the letter was sent);
  - if a facsimile was sent, a copy of the facsimile Report;
  - if an electronic mail was sent, a copy of the electronic mail sent; and
  - if a "mail drop" was done, a signed register of "mail drops" received (showing the name of the person the notice was handed to, the address of the person, the date, and the signature of the person); and
- a copy of the newspaper advertisement ("newspaper clipping") that was placed, indicating the name of the newspaper and date of publication (of such quality that the wording in the advertisement is legible).

SECTION G: DESCRIPTION OF THE RECEIVING ENVIRONMENT

All specialist studies must be attached as **Appendix G**.

1. Groundwater

1.1.	Was a specialist study conducted?	**YES X**	NO
1.2.	Provide the name and or company who conducted the specialist study.		
Geohydrological Impact Assessment (Appendix G3): GEOSS (Groundwater & Geo-Environmental Solutions)			
1.3.	Indicate above which aquifer your proposed development will be located and explain how this has influenced your proposed development.		

The presence and characteristics of groundwater in the study area are primarily governed by the rate and volume of groundwater recharge, as well as the geological formations that serve as storage and flow pathways. The region consists of fractured aquifers, which influence groundwater availability and movement. The aquifer yield and quality classifications are based on regional datasets and provide an indication of expected conditions rather than precise site-specific measurements.

Aquifer Yield:

According to the 1:500 000 scale hydrogeological map (DWAF, 2000), the study area hosts a fractured aquifer with an average borehole yield of 0.5 L/s. A fractured aquifer is defined as a formation that contains sufficient fissures, fractures, cracks, joints and faults that yield economic quantities of water to boreholes and springs. Groundwater will then move along these fractures and joints. The fractured aquifer depicted on the map likely refers to the the Rietvlei Formation from the Table Mountain Group, which underlays the Gydo Formation.

Aquifer Quality:

Electrical conductivity (EC) is a measure of the ability of the groundwater to conduct electricity. EC is directly related to the concentration of dissolved ions in the water and this parameter is used as an indication of groundwater quality. The groundwater map indicates that the aquifer has EC values in the range of 0-70 mS/m (DWAF, 2000). This is classified as good water quality in terms of domestic water standards (DWAF, 1998). In the valley west of the farm, the water quality is poor (300 – 1 000 mS/m).

Aquifer Vulnerability Classification:

The national scale groundwater vulnerability map, which was developed according to the DRASTIC methodology (Conrad and Munch, 2007), indicates that the study area has a "very low to low/medium" vulnerability to surface-based contaminants. This "very low to low/medium" rating is likely associated with the fact that the aquifer is regionally classified as a fractured aquifer overlain by an aquitard. While still susceptible to contamination, fractured aquifers are generally less permeable than intergranular alluvial systems, and groundwater levels tend to be deeper, reducing the risk of rapid pollutant infiltration. However, contaminants can still enter the groundwater system, particularly in areas where fractured rock is exposed or where boreholes act as direct conduits for pollution.

1.4.	Indicate the depth of groundwater and explain how the depth of groundwater and type of aquifer (if present) has influenced your proposed development.

A Hydrocensus was conducted by GEOSS to assess groundwater use within the study area. Through the information gathered during the hydrocensus the following was noted:

- The depths of the boreholes were generally deep (>80 m);
- Water levels are between 15-32 mbgl;
- Groundwater is used for both domestic and irrigation purposes.

The groundwater from BH1 and BH2 is not suitable for consumption without prior treatment. The pH (4.2-5.6) is considered acidic. the electrical conductivity (34-40.8 mS/m) of BH1 and BH2 is good. while trace metals are elevated into the category of "marginal to dangerous" (DWAF. 1998). With elevated levels of turbidity and concentrations of iron, manganese, and aluminium. The water falls into the category of marginal according to the DWAF (1998) domestic standards. The turbidity has some aesthetic effects, such as murky water according to the SANS 241: 2015 standards while the trace metals can cause chronic health issues.

The production boreholes have been correctly yield tested (according to SANS 10299 4-2003) and the results were used to determine the managed (i.e. long-term and safe) yield of the borehole. The total conservative volume, which can be abstracted from the boreholes is 154 526 m^3/a. The application volume (49 458 m^3/a) is 32% of the sustainable abstraction volume.

Please refer to the Geohydrological Impact Assessment in Appendix G3.

2. Surface water

2.1.	Was a specialist study conducted?	**YES X**	NO
2.2.	Provide the name and/or company who conducted the specialist study.		
Freshwater Impact Assessment by EverWater (Jeanne Snyman) – Appendix G2.			
2.3.	Explain how the presence of watercourse(s) and/or wetlands on the property(ies) has influenced your proposed development.		

Freshwater features found within the project site included several small seasonal tributaries of the Ratel River with their associated wet areas. For the purpose of this report, the freshwater features on site are referred to as Streams A to D (shown in Figure 7). All four streams are primarily seasonal, with permanently wet areas observed along their channels, suggesting a degree of groundwater contribution to baseflow. They originate in the hills to the southeast and flow generally in a north-northwestern direction, where Streams A and B, and Streams C and D converge, respectively, before joining the Ratel River.

The upper reaches of these streams remain largely in a natural state; however, their condition deteriorates to varying degrees (moderately to seriously modified) upon entering farmed areas. In these sections, several historic impacts have been observed, including vegetation removal, agricultural encroachment into riparian zones, the construction of instream dams, and artificial canalisation, particularly in Streams A and B. Both of these converged stream systems terminate in large farm dams shortly before reaching the Ratel River.

A large portion of the Streams A and B system likely historically comprised an unchanneled valley-bottom wetland. However, this area has been so extensively modified that it has lost all ecological function. Only a small remnant of the wetland remains at the confluence of the two streams. In contrast, Streams C and D have been the least impacted, with large sections still ranging from largely natural to moderately modified in condition.

Due to their similar condition and geomorphological characteristics, as well as the fact that they form two distinct tributaries, Streams A and B were assessed as a single unit, as were Streams C and D.

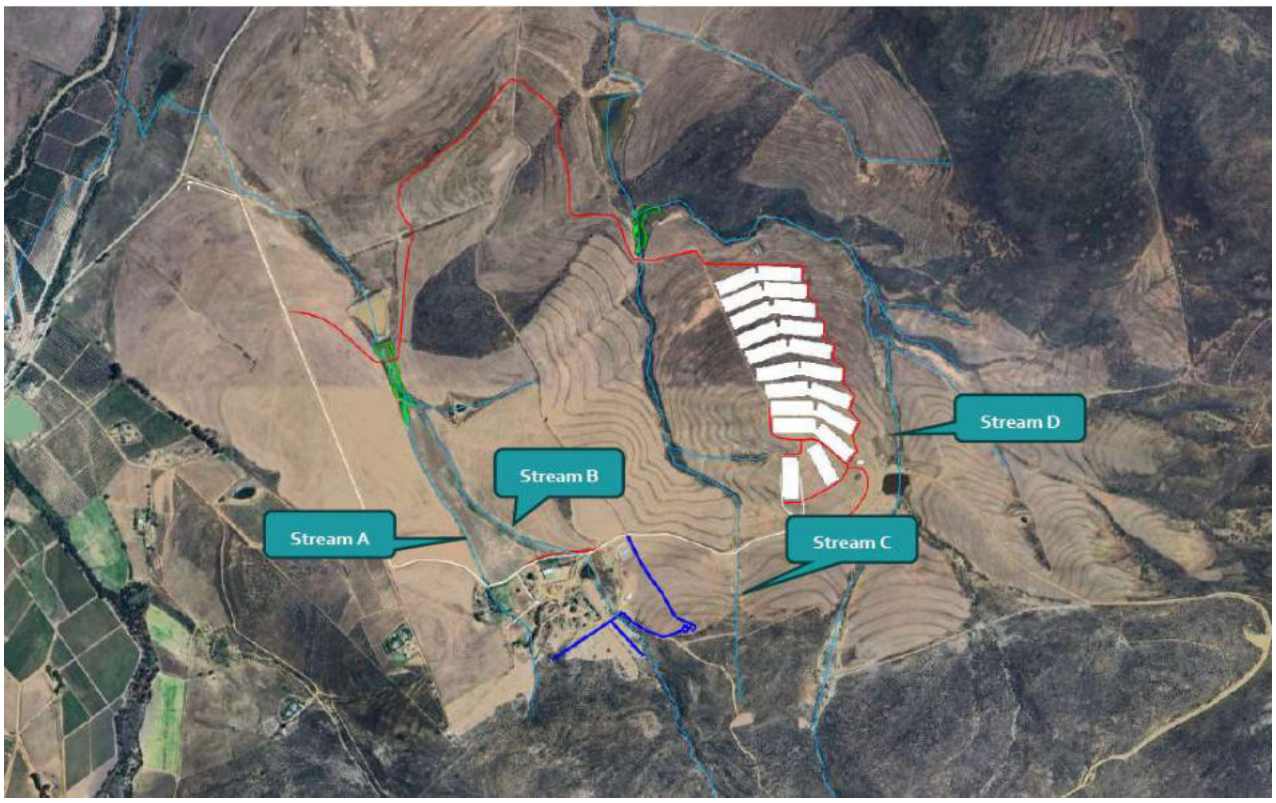

***Figure 7**: Satellite imagery indicating the project site with the proposed new roads (red lines), the broiler area (white polygons) as well as the affected streams (blue lines) with their associated wetland areas (green polygons). Dark blue line showing water pipelines between boreholes and reservoirs.*

The freshwater features mentioned above were assessed using the Classification System for Wetlands and Other Aquatic Ecosystems in South Africa (Ollis et al., 2013). Additionally, the River Index of Habitat Integrity (IHI) for rivers and streams, were utilised to determine the Present Ecological State (PES) of the affected freshwater features. Together with the Ecological Importance and Sensitivity (EIS) method, these tools were employed to evaluate the ecological condition, functional performance, and overall importance of the rivers, streams or wetlands on site. Based on the above assessments, the Recommended Management Objective (RMO) and Recommended Ecological Class (REC) were determined. These approaches provide a comprehensive understanding of the streams' current state, their ecological roles, and their significance in terms of biodiversity and resilience. They also offer valuable insights into the key ecological drivers influencing these systems. Please refer to Table 1 below for a summary in this regard.

***Table 1*: Summary of the River Assessment for the unnamed tributries.**

	Stream A and B	Streams D and E
DWA catchment	H40F	
Vegetation type	Breede Shale Renosterveld (Critically Endangered)	
Rainfall region	Winter	
System	Inland System	
Regional Setting	Western Folded Mountains	
Landscape unit	Slope to Valley Floor	
Hydrogeomorphic Unit	Stream (Seasonal)	
Longitudinal zonation/Landform/ Outflow drainage	Foothill - Sand Bed	
Landform/Inflow drainage	Active Channel	
Substratum type	Loam and Clay	
Special conservational features (from desktop study)	WCSBP (2017)	Based on the 2023 WCBSP map (Figure 6), terrestrial Critical Biodiversity Areas (CBA's) were found around the remaining natural areas on the property Furthermore, aquatic Ecological Support Areas (ESA1: Ground Water Source) were also indicated specifically towards the south and east of the property.
	NFEPA	According to the National Freshwater Ecosystem Priority Areas (NFEPA) dataset and the National Wetlands Map (NWM5) (refer to Figure 10), the broader catchment in which the project site is located is classified as a FishFEPA (Fish support area). In addition to the above, the National Wetlands Map classifies the Ratel River and its larger associated floodplain as East Coast Shale Renosterveld_Floodplain wetland, currently in a C condition (FEPA rank 5).
PES	D/E: Largely to Seriously modified	A/B: Natural to Largely Natural
EIS	Low to Moderate	High
RMO and REC	RMO – D: Maintain; REC – D	RMO – A: Maintain; REC – A/B
Proposed Buffer Zone	**Road Crossings:** As the proposed work will occur within the stream channels, the implementation of a buffer zone is not considered feasible. **Other Activities:** All other activities should be located outside a 30-meter buffer zone measured from the edge of the streams' riparian areas.	

3. Coastal Environment

3.1.	Was a specialist study conducted?	YES	**NO X**
3.2.	Provide the name and/or company who conducted the specialist study.		
N/A			
3.3.	Explain how the relevant considerations of Section 63 of the ICMA were taken into account and explain how this influenced your proposed development.		
N/A			
3.4.	Explain how estuary management plans (if applicable) has influenced the proposed development.		
N/A			
3.5.	Explain how the modelled coastal risk zones, the coastal protection zone, littoral active zone and estuarine functional zones, have influenced the proposed development.		
N/A			

4. Biodiversity

4.1.	Were specialist studies conducted?	YES	**NO X**
4.2.	Provide the name and/or company who conducted the specialist studies.		

Although no Botanical Specialist was required, the Freshwater Impact Assessment undertaken by *EverWater* did address "Loss of biodiversity and ecological structure" as an impact regarding river crossings (Appendix G2).

4.3.	Explain which systematic conservation planning and other biodiversity informants such as vegetation maps, NFEPA, NSBA etc. have been used and how has this influenced your proposed development.

The following conservation planning and biodiversity informants were used to guide the proposed development location and layout:

- **Western Cape Biodiversity Spatial Plan 2023**
- **The Vegetation Map of South Africa (National Vegetation Map 2024)**
- **The revised national list of ecosystems that are threatened and in need of protection. Government Gazette No. 2747 (2022)**
- **Wetland Freshwater Priority Areas (FEPAs) database (2011)**
- **National web based environmental screening tool (2020).**

The property is a working farm that has been under cultivation since before 1966, as such limited areas of biodiversity importance remain onsite. No activities are proposed within the area to the south which falls within a Protected Area (shown in Figure 9 below). A Freshwater Impact Assessment has been undertaken to assist furthermore in this regard.

Refer to Section 4.4 below.

4.4.	Explain how the objectives and management guidelines of the Biodiversity Spatial Plan have been used and how has this influenced your proposed development.

The 2023 Western Cape Biodiversity Spatial Plan Map and the National Freshwater Ecosystem Priority Areas Map provide information regarding the conservation value and ecological importance of the freshwater features studied. Please refer to Appendix D for Biodiversity Overlay Maps.

2023 Western Cape Biodiversity Spatial Plan

The 2023 Western Cape Biodiversity Spatial Plan (WCBSP) was formally adopted into law on 13 December 2024 (Gazette Extraordinary No. 9017), in terms of the Western Cape Biodiversity Act (Act No. 6 of 2021). This plan supersedes the 2017 WCBSP and now serves as the official spatial framework for biodiversity conservation and land-use decision-making in the province.

Based on the 2023 WCBSP map (Figure 5 above), several terrestrial Critical Biodiversity Areas (CBA's) were found along the remaining natural areas on the property. These areas are areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure, and such areas are to be maintained in a natural or near-natural state, with no further loss of natural habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land uses are appropriate.

Furthermore, aquatic Ecological Support Areas (ESA1: Ground Water Source) were also indicated specifically towards the south and east of the property. These areas play a vital role in helping to sustain the baseflow of surrounding rivers, wetlands, and streams during dry periods.

NFEPA map

Freshwater Ecosystem Priority Areas (FEPAs) are strategic spatial priorities identified to support the long-term conservation of freshwater ecosystems and the sustainable use of water resources. According to the National Freshwater Ecosystem Priority Areas (NFEPA) dataset and the National Wetlands Map (NWM5), the broader catchment in which the project site is located is classified as a FishFEPA (Fish support area).

FishFEPAs, or fish sanctuaries, are sub-quaternary catchments that are critical for the protection of threatened and near-threatened freshwater fish species indigenous to South Africa. These catchments are denoted by either a red or black fish symbol on the map. The sub-quaternary catchment associated with the project area is marked with a black fish, indicating the presence of at least one population of vulnerable or near-threatened fish species, or a population of special concern. The primary objective of FishFEPAs is to prevent further decline in the condition of aquatic ecosystems, particularly those supporting sensitive fish species. As such, no further deterioration in river condition should occur within fish sanctuaries, and no new permits should be issued for the introduction or stocking of invasive alien fish species in these catchments.

In addition to the above, the National Wetlands Map classifies the Ratel River and its larger associated floodplain as East Coast Shale Renosterveld_Floodplain wetland, currently in a C condition (FEPA rank 5). These wetlands are marked as being critically endangered – both from a vegetation and wetland ecosystem perspective.

4.5.	Explain what impact the proposed development will have on the site-specific features and/or function of the Biodiversity Spatial Plan category and how has this influenced the proposed development.

Vegetation associated with the project site is largely classified as the Endangered Breede Shale Renosterveld (FRs8), represented by the blue area in Figure 8. Smaller patches of North Sonderend Sandstone Fynbos (purple area) and Robertson Karoo (yellow area) are also present. The proposed activities are only located within the Breede Shale Renosterveld areas.

The vegetation and landscape features generally associated with this type include low hills, slightly undulating to undulating plains, and lower mountain slopes. In the eastern regions, open, tall shrublands—possibly closely affiliated with FRs12 Central Rûens Shale Renosterveld—are found, where microphyllous shrubs form the dominant layer. Breede Shale Renosterveld transitions into Robertson Karoo in the central valley. Karoo shrublands typically occur on the northern aspects, while renosterveld is found on the southern aspects, with a decline in karoo shrubland extent to the south. Heuweltjies (mound-like features) are prominent, often supporting bush clumps in moister areas and succulent shrubs in drier habitats (Mucina & Rutherford, 2006).

Vegetation found within the affected freshwater features ranged from being in a largely natural state to being largely to seriously modified condition at places. Terrestrial riparian vegetation generally found within the healthier riparian areas included: Sandolien *(Dodonaea viscosa var. angustifolia)*, Taaibos *(Rhus undulata)*, Bittergombos *(Lycium ferocissimum)*, Kraalbos *(Aizoon africanum L.)*, Renosterbos *(Elytropappus rhinocerotis)*, *Pteronia sp.* and Cotton Milkweed *(Gomphocarpus fruticosus)*. Vegetation marking wetter areas included *Ischyrolepis gaudichaudiana, Platycaulos major, Cyperus congestus, Merxmuellera stricta, Juncus sp.* and the common reed *(Phragmites australis)*.

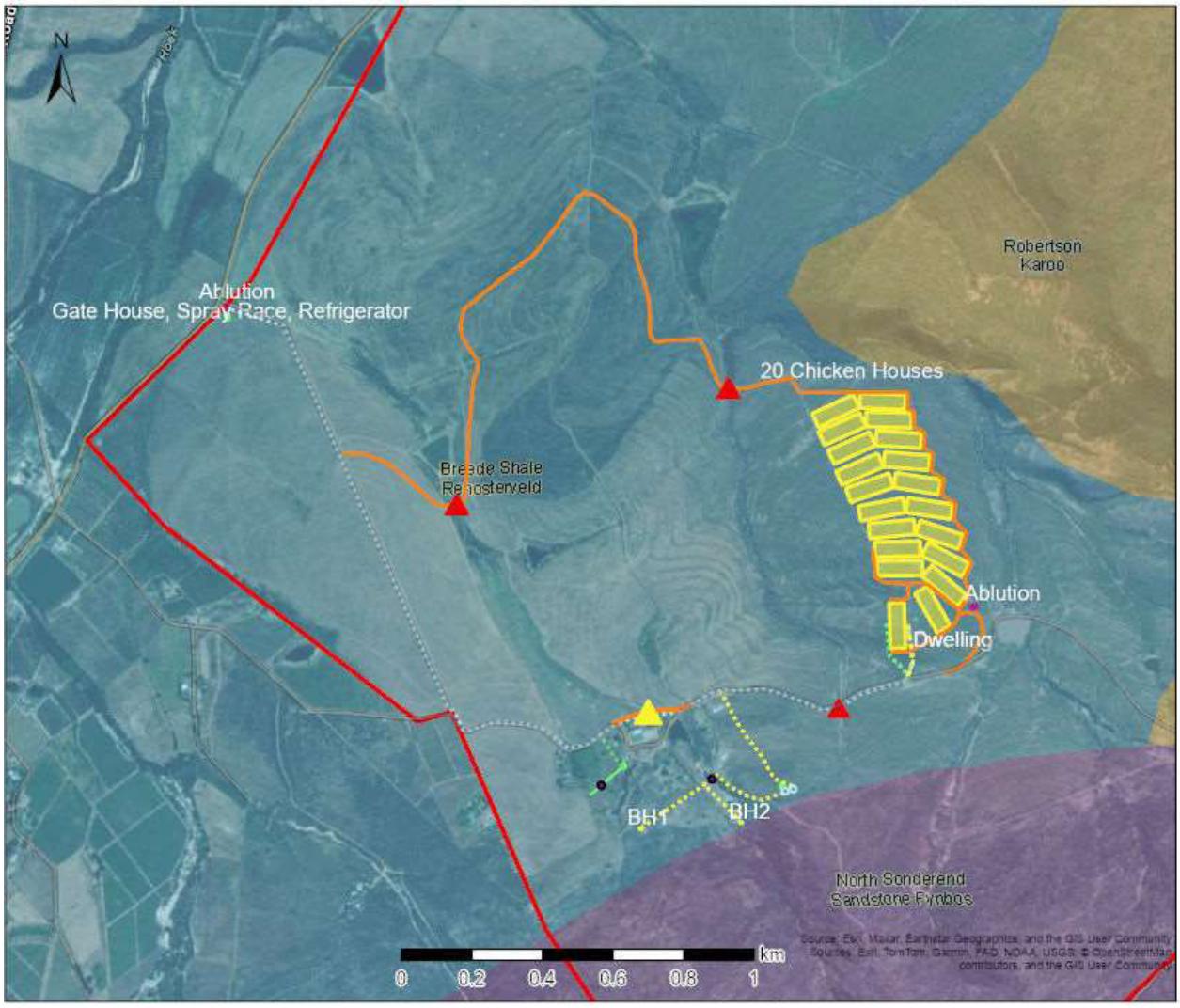

***Figure 8**: National Vegetation Map represented within the property boundaries of the site (red polygon) (CFM, 2025).*

4.6.	If your proposed development is located in a protected area, explain how the proposed development is in line with the protected area management plan.

The proposed activities fall <u>outside</u> the Riviersonderend Mountain Catchment Area. The property also falls outside the Cape Winelands Biosphere Reserve. The Main Road (R43) indicates the eastern boundary of the Biosphere Reserve. Refer to Figure 9 below.

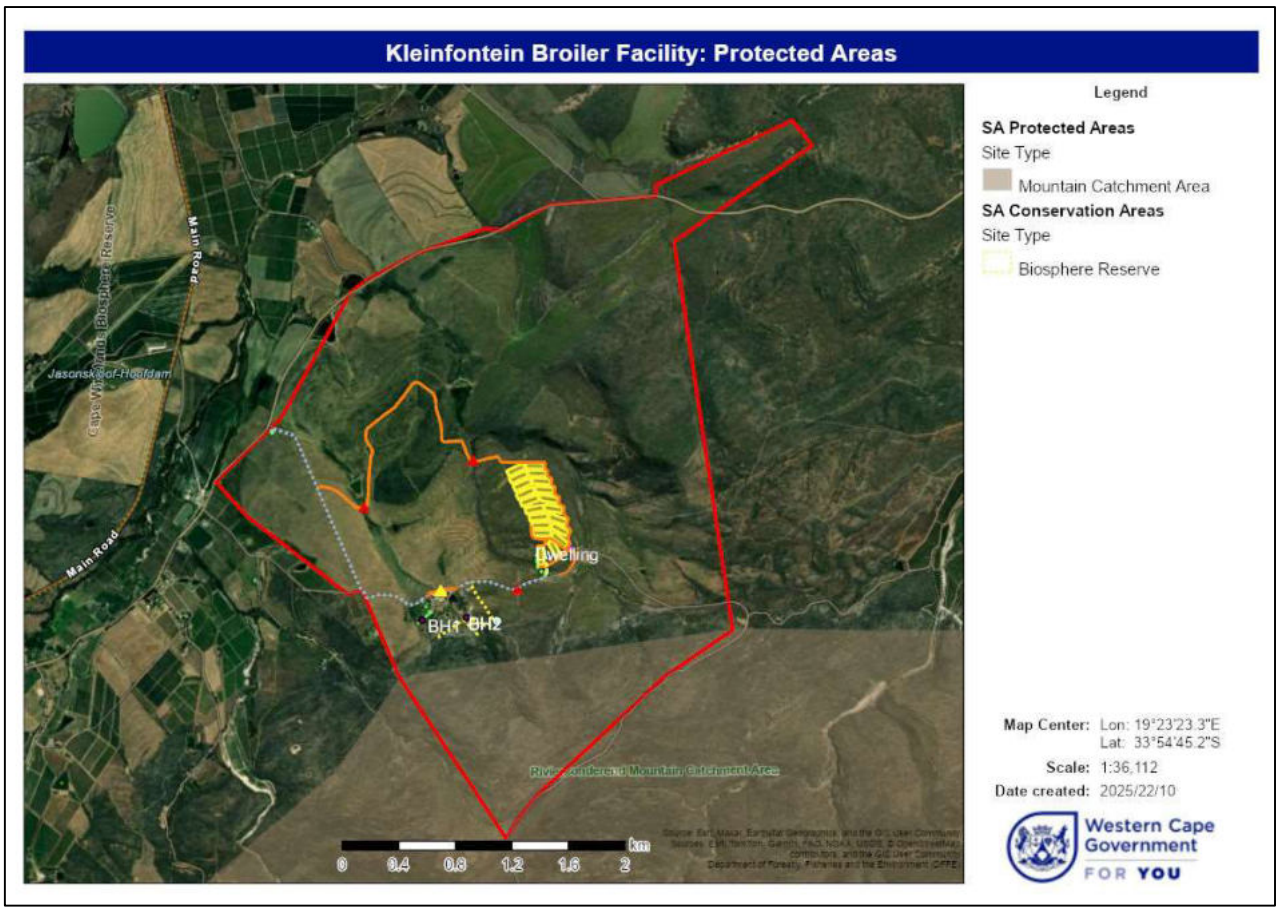

Figure 9: Protected/ Conservation Areas Map represented within the property boundaries of the site (red polygon) and surrounds (CFM, 2025).

4.7.	Explain how the presence of fauna on and adjacent to the proposed development has influenced your proposed development.

The proposed activities are largely taking place within fallow agricultural fields, as confirmed by a site visit and aerial imagery. Considering the agricultural nature of the development, its location within agricultural fields and within the existing farmyard it is thus improbable that the faunal species listed would be present within the development site and the Animal Species Sensitivity of the site is considered LOW.

No aquatic-dependent fauna of special concern was observed during the field survey; however, several bird species were noted in the wetter areas. As the site borders a protected area to the southeast, the stream corridors are also expected to serve as migration routes for surrounding wildlife. This was assessed as part of the Freshwater Impact Assessment.

5. Geographical Aspects

Explain whether any geographical aspects will be affected and how has this influenced the proposed activity or development.
The study site is located just off Koppies Road, which extends from the R43, approximately 12 km northeast of Villiersdorp. The project area falls within the larger Hoeks River Catchment, specifically within Quaternary Catchment H40F, which forms part of the Breede-Gouritz Water Management Area (WMA). The landscape is generally characterised by undulating hills and valleys, predominantly used for agricultural purposes, and includes several small tributaries of the Ratel River. Other larger landscape features surrounding the property include the Stettyns mountains located to the far west. **No other geographical aspects will be affected by the proposed activities however the proposed Broiler Houses could result in a higher intensity form of agriculture and through the increased hardened surfaces within the agricultural landscape.**

6. Heritage Resources

6.1.	Was a specialist study conducted?	**YES X**	NO
6.2.	Provide the name and/or company who conducted the specialist study.		
CTS Heritage – Jenna Lavin			
6.3.	Explain how areas that contain sensitive heritage resources have influenced the proposed development.		
A Heritage Screener was completed for input at an early stage (Appendix G1). The screener confirmed that it is it is unlikely that significant heritage resources will be negatively impacted by the proposed development and as such, no further heritage studies were recommended. A NID has been submitted to HWC and comment received from HWC confirmed that no Heritage resources are likely to occur on site and that no further studies will be required (Appendix E1).			

7. Historical and Cultural Aspects

Explain whether there are any culturally or historically significant elements as defined in Section 2 of the NHRA that will be affected and how has this influenced the proposed development.
Jenna Lavin stated the following in the Heritage Screener: ***"In 2021, CTS Heritage conducted a desktop report for the proposed establishment of blueberry cultivation approximately 40km northwest of the proposed development. According to the desktop study, following increased colonial settlement, Worcester was established on 28 February 1820. The Breede River area has been extensively farmed since the 1700s, initially with cattle and later orchards and vineyards so that by 1865, viticulture yields were matching those of Stellenbosch and Paarl. Before colonial settlement, the Breede River Valley would have been home to Stone Age peoples as evidenced by Early, Middle and Later Stone Age (ESA, MSA and LSA) artefacts found in the area and later, Khoe herders and San hunter-gatherers. Before 1700, the area was teeming with big game and as such, the Dutch East India Company (DEIC) profited from the issuing of hunting licences for this area, including elephants for their tusks. By 1709, the DEIC granted grazing rights in the Breede Valley to European farmers, and by 1714, first quitrent farms were released. The proposed development falls within agricultural lands, in a valley through which the R43 passes. The R43 follows a historical route. The study area is located approximately 12km from the Brandvlei dam, which, according to Raper et al (2018), was "Encountered about 1776 in the spelling Brandvalley, it owes its name to South Africas largest thermal spring; derived from Afrikaans brand, "burn"". The dam itself was constructed between 1920-1922, and is sometimes known as Lake Marais. The proposed development is located less than 2km south of the confluence of the Klip- and Ratel Rivers.***

A declared PHS is located along the R43 - Stettyn Homestead. This property was declared in 1985. According to the gazette notice for this site, "Stettyn, which has been in the possession of the Botha family since 1818, was originally granted to Jan Cloete and Jan Jurgen Radyn on 26 September 1714. The Cape Dutch farm-house, the original portion of which was built in 1777 by the then-owner Schalk van der Merwe, was enlarged in the early nineteenth century by Phillippus Roedolph Botha. He was probably also responsible for the addition of the typical Worcester front gable. The house, which was badly damaged by Fire in 1930, was restored in 1977. The mill-house, which was in operation until approximately 1929, was presumably erected in 1850." It is noted that this structure and its protected area is located well-away from the proposed development and no direct impact to this resource is anticipated.

The landscape in which the proposed development falls is one of agriculture, with most of the nearby structures being farm buildings. The chicken farm platforms fall within cultivated land, and the satellite imagery and topographical maps indicate no existing structures within any of the proposed platform areas. The proposed guardhouse and associated facilities are also located within existing agricultural fields. Some of the other proposed developments (Containers - Solar Batteries/Generator, reservoirs, pipelines, boreholes, and water treatment plant) are located around the Kleinfontein werf. Due to their distance to existing infrastructure, no impact is anticipated."

A Notification of Intent to Develop and Heritage Screener report was submitted to HWC for comment by the Heritage Specialist. According to the Heritage Specialist, "*Based on the information available, it is unlikely that significant heritage resources will be negatively impacted by the proposed development and as such, no further heritage studies are recommended*".

8. Socio/Economic Aspects

8.1.	Describe the existing social and economic characteristics of the community in the vicinity of the proposed site.

The information in this section was sourced from the Breede Valley Municipality's IDP: 2022-2027.

The farm is situated within the Breede Valley Municipality which presides over the towns of Rawsonville, Worcester, De Doorns and Touwsrivier and covers a square kilometre area of 3 833 km^2, also known as the Breede Valley region. Worcester serves as the administrative headquarter of the municipality and is also regarded as the primary economic service node.

Apart from the formal settlement areas, the municipality has a number of informal settlements. The region recorded a counted population of 176 578 (inclusive of the informal settlements) comprising 47 569 households, based on the Community Survey 2016 Stats SA data, of which approximately 14,7% (7 000) were classified as indigent at the time (9 683 as at mid-year of 2021/22). The region's estimated population figure for 2022 amounts to 197 736 residents.

Positioned on the N1, coupled with a major railway intersection, the Breede Valley Municipality offers a unique locational advantage, as it provides ease of access to Cape Town (economic hub of the Western Cape) as well as inland markets. This locational advantage serves as catalyst for attracting and retaining businesses across all sectors to the region. In terms of economic contribution, the financial, insurance, real estate and business services sector (20.7%) currently serves as the biggest contributor to GDP within the Breede Valley. In addition to this, the wholesale & retail trade, catering and accommodation (19.3%); manufacturing (13.8%); general government (10.5%) and agriculture, forestry and fisheries (9%) are the five largest sector contributors to GDP (73.3%) within the Breede Valley. Although the agriculture, forestry and fisheries represent the fifth largest sector in terms of GDPR contribution, it remains an important sector within BVM. The region is world-renowned for its wine farms that produce export quality wines and create sustainable livelihoods for many citizens in the Breede Valley (23.5% contribution to employment). In addition, parts of the Breede Valley are integrated into wine routes frequented by overseas tourists, which form the basis of a robust tourism economy. The region has a mixed farming character, with vegetable farming, poultry farming and livestock production dominating the agricultural landscape.

Demographic Profile:

Breede Valley recorded the second largest population density in the Cape Winelands District (20,4% of the Cape Winelands District population), which has a population size of 866 223 (2016 data). The total population in Breede Valley increased significantly between 2011 and 2016. Migration due to employment prospects as well as enhanced access to basic services could be one of the reasons for the population increase experienced in Breede Valley and other municipalities in the region. The number of households in Breede Valley has also increased by 11,9 % between 2011 and 2016. An increase in the number of households implies an increase in the demand for municipal services, which should be informed by medium- to long-term municipal capital project planning. Breede Valley's population figure for 2022 is estimated at 197 736, rendering it the third most populated municipal area in the Cape Winelands District (CWD), behind Drakenstein and Stellenbosch with estimated population figures of 297 672 and 199 720 people respectively. Breede Valley's total population is estimated to increase to 200 911 by 2024 which equates to a 0.8% annual average growth rate.

Between 2021 and 2025, the largest population growth will be recorded in the "aged (65+)" cohort, which is anticipated to grow at an annual average rate of 1.9%. The "children (0-14 Years)" and "working age (16-65 years)" cohorts, in turn, are only anticipated to grow by 0.9% and 0.7% respectively. The notable increase in the "aged (65+)" cohort is expected to increase the dependency ratio from 50.7% in 2021 to 51.4% in 2025. A higher dependency ratio means a higher pressure on social systems and the delivery of basic services.

The Farmworker Household Survey Report of 2014/15 reports on general demographic trends of farmworker households within the Cape Winelands area. According to the study, Breede Valley had 1005 households and approximately 4222 people living and working on farms. The study further indicated that there is approximately an equal split between males and females with an average age of 27.37 years. It was also found that over 66% of individuals were below the age of 35, i.e. classified as youth. The study found that an overall of 62.63% of individuals living in farmworker households have permanent jobs both on and off the farm on which they reside. Approximately 18.1% of individuals living on farms were unemployed, while 19.27% had either temporary or seasonal work. It is imperative to note that the statistics presented above, is derived from a survey conducted during the 2014/15 financial period (Western Cape Department of Agriculture). It is therefore anticipated that this landscape has changed over the past ten years, hence, warranting the need for an updated survey/study to accurately reflect on the current context.

Human Development Index (HDI):

The level of human development and socio-economic wellbeing since 2014 in Breede Valley can be measured using the Human Development Index (HDI). The HDI is a measure of peoples' ability to live a long and healthy life, to communicate, participate in the community and to have sufficient means to be able to afford a decent living. The HDI is thus a composite index of factors reflecting schooling, economic prosperity and longevity. It is represented by a number between 0 and 1 where 1 indicates a high level of human development and 0 represents no human development.

In 2020, Breede Valley recorded lower levels of human development in comparison to that of the CWD (0.740) and Western Cape Province (0.769) respectively. The level of human development is relatively in line with economic growth rate (1%) and income inequality level (0.61) respectively, which echo's the national sentiment of slow economic growth, high levels of inequality and low levels of human development that remain prevalent within municipalities, provinces and the country. This is further exacerbated by the devastating impact of Covid-19 on the socio-economic wellbeing of societies across the world, Breede Valley included. In response to this, Breede Valley Municipality should strive to make the local economy more inclusive by driving local economic initiatives encapsulated in its local economic strategy.

Education & Skills:

In 2020, 58 public schools were recorded in Breede Valley, of which 46 (79.31%) of these were classified as no-fee schools. The majority of the schools are characterised as Quintile 1 or Quintile 2 schools, which indicate that they are situated in communities where high poverty indices are recorded by national government, differently put, schools that specifically cater to the poorest 20% of learners (quintile 1) and next poorest 20% of learners

(quintile 2). These schools account for 47.87% of learners within public schools throughout the Breede Valley (i.e. 18 794 out of 39 259)

The majority of people in the Breede Valley has had some level of secondary schooling (42,8%), followed by people who completed secondary schooling (26,7%). Only 9,5% of people residing in Breede Valley achieved a tertiary education qualification. This observation has massive implications for education planning, as the majority of initiatives would have to be focused on artisanal training at TVET Colleges, internships and on-the-job skills training. The low tertiary education attainment will impact on the region's ability to grow the knowledge economy in key economic sectors such as finance, business services and ICT.

There is a marked difference in the level of education between males and females in the tertiary education sphere. This observation can be explained by the historic disparity to educational access that has existed between males and females. Males account for 28,8% and 59,5% of graduates and postgraduates respectively. On the other hand, females comprise 71,2% and 40,5% of graduates and postgraduates, respectively.

Employment in the Breede Valley municipal area consisted predominantly of low-skilled (41.3%) and semi-skilled (40.3%) workers in 2019. Only 18.4% of the region's workers were classified as skilled. A significant proportion of workers in the agriculture sector (72.3%) and the community services sector (66.5%) were classified as low-skilled. Semi-skilled workers were most prevalent in the construction sector (67.3%), as well as the electricity, gas and water sector (62.7%). Most sectors in the region had a significant number of semi-skilled workers. The general government sector had the highest proportion of skilled workers (42.8 %) and the finance sector also absorbed a significant amount of skilled labour (28.0 %).

<u>Health:</u>

South Africa's healthcare system is geared in such a way that people have to move from primary, with a referral system, to secondary and tertiary levels. In terms of healthcare facilities Breede Valley had 17 primary healthcare clinics (PHC) in 2020, which comprises of 6 fixed and 9 mobile clinics. In addition, there are also 1 community day centre, 1 regional hospital as well as 11 ART clinics/sites and 19 TB treatment clinics/sites.

Access to emergency medical services is critical for rural citizens due to rural distances between towns and health facilities being much greater than in the urban areas. Combined with the relatively lower population per square kilometre in rural areas, ambulance coverage is greater in rural areas in order to maintain adequate coverage for rural communities. Provision of more operational ambulances can provide greater coverage of emergency medical services. Breede Valley has 2 ambulances per 10 000 inhabitants in 2020 which is below the district average of 2.4 ambulances per 10 000 people. It is worth noting that this number only refers to Provincial ambulances and excludes all private service providers.

HIV/AIDS management is crucial given its implications for the labour force and the demand for healthcare services. The total number of registered patients receiving ARTs in the Breede Valley municipal area increased from 5 890 patients in 2019 to 6 346 patients in 2020 (increase of 456 patients). The 6 346 patients receiving antiretroviral treatment are treated at 11 ART clinics or treatment sites. However, the number of patients decreased across the district during the same reference period. In addition, the number of new antiretroviral patients decreased from 846 in 2019/20 to 781 in 2020/21.

<u>Household Income:</u>

The majority of households in Breede Valley (53,8 %) fall under the low-income brackets. This could indicate that an increasing number of households find it difficult to survive and will ultimately become dependent on social assistance in the form of social grants in the absence of targeted sustainable employment creation programmes. Notably, income inequality intensified in Breede Valley between 2014 and 2020 with an increase in the Gini coefficient from 0.576 in 2014 to 0.611 in 2020. This inequality in income indicates that economic growth (or any form thereof) is not benefiting everyone or equally spread throughout the municipal area, hence, greater efforts (across all sectors and facets of society) must be employed to build a more inclusive local economy.

<u>Local Economy and Employment:</u>

The finance, insurance, real estate and business services sector is the leading contributor to the Breede Valley municipal area's economy. In 2019, the finance, insurance, real estate and business services sector accounted

for 20.7% of the region's total GDPR, followed by the wholesale and retail trade, catering and accommodation sector (19.3%). Another significant contributor to GDPR in the region is the manufacturing sector, which contributed 13.8% to GDPR in 2019.

The agriculture, forestry and fishing sector is the leading contributor to employment in the Breede Valley municipal area. Despite only contributing 9% to GDPR in the region in 2019, the agriculture, forestry and fishing sector accounted for 23.5% of the region's total employment. This reflects the labour-intensive nature of this sector. Conversely, the manufacturing sector, which is the third largest contributor to GDPR, only contributed 7% to employment in 2019. This is indicative of the capital-intensive nature of the manufacturing sector. The wholesale and retail trade, catering and accommodation sector is another major contributor to the Breede Valley municipal area's employment. In 2019, 21.8% of all employment in the region was in the wholesale and retail trade, catering and accommodation sector.

In 2019, the Breede Valley municipal area's tertiary sector was valued at R9.2 billion, which was 69.5% of the region's total GDPR during the year. Between 2015 and 2019, the tertiary sector experienced an annual average growth rate of 2.1%, which was largely driven by the significant average growth rate of 4.4% per annum in the finance sector. The primary sector, which is mainly driven by the agriculture sector, experienced an average annual contraction of 3.9% between 2015 and 2019. The poor performance in this sector could be the result of droughts experienced across the Province. Despite the construction sector's positive growth between 2015 and 2019, the secondary sector only grew at a marginal annual rate of 0.6%. This can be attributed to the manufacturing sector's low growth of 0.7% and the electricity, gas and water sector's average annual contraction of 2.9%.

The economy in the municipal area created an average of 1 917 jobs annually between 2015 and 2019. The tertiary sector was the leading contributor, with 646 annual jobs created in the trade sector. The agriculture sector created 365 jobs annually in the municipal area.

The COVID-19 pandemic had a significant negative impact on most sectors in the Breede Valley municipal area. Sectors such as the trade sector and the manufacturing sector contracted by 9.8% and 9.0% respectively. The decline in tourist activities as a result of travel restrictions had a significant negative impact on many local businesses in the municipal area. The assumed business closures and job losses as a result of the weak economy will influence the revenue-collection ability of the local municipality. The agriculture sector had an increase of 11.2% in 2020, which can be attributed to the improved weather conditions in the region and overall higher commodity prices experienced. The sector was also allowed to operate under the level five lockdown in 2020. The general government sector contracted less compared with other sectors (1.0%) owing to the fact that it played an integral role in managing the spread of COVID-19. However, the sector also experienced significant challenges, particularly at a local municipal level. Income loss and reprioritisation of budgets affected infrastructure projects, while necessary goods and services were unavailable at times.

The municipal area had a significant reduction in employment, with an estimated 4 706 jobs being shed in 2020. The majority of jobs lost were in the tertiary sector (2 953 jobs). The trade sector shed 1 180 jobs, followed by the community services sector with 1 139 jobs. Despite the positive growth of the agriculture sector, 848 jobs were lost in the same year. Some of the job losses in the municipal area were as a result of the closure of businesses and many businesses also had to reduce their number of staff.

8.2.	Explain the socio-economic value/contribution of the proposed development.

The chicken farm and proposed additions provide socio-economic benefits for the region in terms of job creation, economic growth and food security. The intention is facilitating production of free-range chickens in response to the growing market need for free range chicken. A number of job opportunities will be provided during the construction phase (approximately 100 jobs) and an additional 40 job opportunities will result directly from the operational phase of the development. Furthermore, additional job opportunities will result in the Elgin Free Range Hatcheries and the associated supply chain.

It is estimated that the farm turnover will amount to an estimated R55 million per annum with the farm producing 4 359 168 kg of poultry meat per annum once in operation. Furthermore, the farm will require the use of 6 357 tons of feed and a number of products that will benefit from the supply chain. The proposed development will have knock-on effect for trade in local economy of the surrounding area, facilitate the provision of protein to local markets, have direct and indirect employment opportunities (temporary and permanent) and allow for skills transfers to new employees.

8.3.	Explain what social initiatives will be implemented by applicant to address the needs of the community and to uplift the area.

The development will complement the agricultural productivity on the farm, therefore having a high positive impact to the farming operations. The turnover of the proposed operations will contribute an estimated R55 million per annum to the agricultural economy with an estimated 4 359 168 kg of poultry meat produced per annum to contribute towards food security. The economic contribution within the agricultural supply chain of the region will have significant positive impacts i.e. approximately 6357 tons of feed will be required per annum, amongst others. The development would therefore address the needs of the local community in the form of job creation, skills development and contributing significantly to the local economy resulting in the upliftment of the area.

8.4.	Explain whether the proposed development will impact on people's health and well-being (e.g. in terms of noise, odours, visual character and sense of place etc) and how has this influenced the proposed development.

The land use of the property and surrounding area is primarily agricultural in nature. The proposed broiler facilities are located centrally within the property and are therefore located well away from the boundary of the site. The natural topography is undulating and will therefore partially screen the development from the majority of visual receptors. The proposed development is unlikely to be visually intrusive within the agricultural landscape.

According to the Heritage Specialist "*the landscape in which the proposed development falls is one of agriculture, with most of the nearby structures being farm buildings. The chicken farm platforms fall within cultivated land, and the satellite imagery and topographical maps indicate no existing structures within any of the proposed platform areas. The proposed guardhouse and associated facilities are also located within existing agricultural fields. Some of the other proposed developments (containers - solar batteries/generator, reservoirs, pipelines, boreholes, and water treatment plant) are located around the Kleinfontein werf. Due to their distance to existing infrastructure, no impact is anticipated*." The sense of place of the farm within the surrounding agricultural setting will therefore be maintained.

Noise from inside the units will be largely contained as the units are completely enclosed. Noise from agricultural activities on site is deemed acceptable in the current setting. The proposed land use is agricultural and is compatible with the surrounding rural/ agricultural area. No significant odours will emanate from the proposed activities as the Broiler Facilities are well maintained to ensure biosecurity concerns are met. Biosecurity refers to measures taken to prevent the introduction and spread of harmful organisms (such as diseases, pests, and invasive species) to humans, animals, plants, and the environment. These measures are crucial for protecting agriculture, food safety, public health, and the environment from biological threats.

All potential impacts on people's health and wellbeing are anticipated to be low through the implementation of the Environmental Management Programme (EMPr) (Annexure H).

Please refer to Appendix J for a detailed Impact and Risk Assessment.

SECTION H: ALTERNATIVES, METHODOLOGY AND ASSESSMENT OF ALTERNATIVES

1. Details of the alternatives identified and considered

1.1.	**Property and site alternatives** to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.

Provide a description of the preferred property and site alternative.

The preferred property alternative involves the proposed development of a free-range poultry broiler facility to be located on the Remainder of Farm Number 563, the Remainder of Farm Number 564, the Remainder of Farm Number 565, and the Farm Kleinfontein Number 954 in the Breede Valley Municipality Division Worcester, Province Western Cape. Collectively the four farm portions are approximately 987 ha in extent and are located approximately 30 kilometres south of Worcester and approximately 13 kilometres north of Villiersdorp with access being obtained via a gravel road (Koppies Road) off the R43.

The Broiler Facility will involve the establishment of 20 Broiler Houses with free range pasture located at the side of each house. Each facility will house approximately 17 000 birds. An Ablution facility, Guard House, Spray Race and Refrigerated Container will be located at the entrance to the site. Furthermore, an additional Ablution Facility and Residential Dwelling will be located at the broiler facilities. An existing access road will be utilised and numerous internal roads will be upgraded and realigned (6m width required) where applicable for biosecurity reasons, to improve traffic flow and safety, and to improve river crossings. Service requirements will also be addressed.

The location of the proposed activities within the only property alternative has been developed based on the existing access route, topography of the property, fallow agricultural fields, environmental sensitivities and biosecurity requirements and has attempted to minimize environmental impacts as much as possible (Figure 4 above and Annexure B1).

Provide a description of any other property and site alternatives investigated.

No alternative properties were investigated, as the Applicant has entered into an agreement with the landowner with the intent to purchase the property. However, alternative locations within the property were considered during the planning and design phases. The current site was chosen for the following key reasons:

- **The site is on old, unproductive agricultural land that has been previously disturbed (since before 1966),**
- **The site is largely based on the natural topography to ensure accessibility for trucks,**
- **The site is suitably located in relation to existing onsite facilities (i.e. close enough for ease of management yet sufficiently separated for biosecurity purposes),**
- **The site is centrally located within the property allowing separation and visual screening from neighbours and vehicles travelling along Koppies Road,**

The location of the proposed development is suitable from an environmental, social, economic, and biosecurity perspective. Consideration has also been given to the layout of the development to ensure that the space is used efficiently with minimal vegetation disturbance and that all development activities take place a suitable distance away from any sensitive environmental features.

Provide a motivation for the preferred property and site alternative including the outcome of the site selection matrix.

No property or site alternatives were considered in this application. The proposed development site can effectively accommodate the proposed development. The proposed development is in line with the existing land use rights of the property. The site is easily accessible and is centrally located away from the boundaries of the property.

The location of the proposed development is suitable from an environmental, social, economic, and biosecurity perspective. Consideration has also been given to the layout of the development to ensure that the space is used efficiently with minimal vegetation disturbance and that all development activities take place a suitable distance away from any sensitive environmental features.

Refer also to Layout Alternatives in Section 1.3 below.

Provide a full description of the process followed to reach the preferred alternative within the site.

There is no property alternative and no site alternative currently under assessment. The landowners intend to establish the chicken broiler facility on the proposed property. The preferred development alternative within the property was developed between the Applicant and the EAP taking the following factors into account:

- **Current land use**
- **Productivity levels of agricultural areas onsite**
- **Environmentally sensitive features**
- **Biosecurity**
- **Accessibility**
- **Service availability**

Once a suitable development site within the property was identified, a concept SDP was outlined taking all the Applicants requirements as well as environmental sensitivities and necessary mitigation measures into account.

Provide a detailed motivation if no property and site alternatives were considered.

The Applicant has entered into an agreement with the landowner with the intent to purchase the property. The proposed development is in line with the existing land use rights. The development of a poultry broiler facility on the proposed site diversifies and complements the existing agricultural activities undertaken within the property.

List the positive and negative impacts that the property and site alternatives will have on the environment.

Positive Impacts:

- **Productive use of currently unproductive agricultural land.**
- **Knock-on effect for trade in local economy.**
- **Provision of more protein to local markets.**
- **Direct and indirect employment opportunities (temporary and permanent) and skills transfer to new employees.**
- **Significant financial contribution to the local economy.**

Negative Impacts:

- **Transformation of agricultural land with built-up units.**
- **Waste generation from the construction and operational phase.**
- **Potential hazardous waste generation during the operational phase – infectious mortalities.**
- **Potential nuisance factors (dust, noise and odour).**
- **Possible increase in visual intrusion within the agricultural landscape.**
- **Loss of biodiversity, aquatic habitat and ecological structure.**
- **Potential hydrology modification and change in sediment balance.**
- **Potential Water Quality impacts.**
- **Increased use of access roads and therefore generation of traffic.**
- **Potential surface water pollution from contaminated runoff (e.g. unit wash water).**
- **Depletion of the Groundwater Resource as a Result of Over-Abstraction.**
- **Quality Deterioration as a Result of Over-Abstraction.**
- **The risk of groundwater abstraction impacting surface water**
- **The risk of groundwater contamination due to a leaking septic tank, which may detrimentally impact a water resource**

1.2.	**Activity alternatives** to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.

Provide a description of the preferred activity alternative.

The Applicant proposes the development of a Free-Range Poultry Broiler Facility. The Broiler Facility will involve the establishment of 20 Broiler Houses (approx. 1044m² per facility) with free range pasture located at the side of each house. Each facility will house approximately 17 000 birds. An Ablution facility, Guard House, Spray Race and Refrigerated Container will be located at the entrance to the site. Furthermore, an additional Ablution Facility and Residential Dwelling will be located at the broiler facilities.

Access & Roads: An existing access road will be utilised and numerous internal roads will be upgraded and realigned (6m width required) where applicable for biosecurity reasons, to improve traffic flow and safety, and to improve river crossings. Four watercourse crossings are required, two are existing crossings and two are new crossings within the proposed road alignment. Three of the structures proposed will be low waterway bridges and one will be a suspended bridge structure.

Low Water Bridges:

Low waterway bridges are reinforced concrete structures with a driving surface (final top level) raised above ground (natural ground level) and these structures cross waterways nearly perpendicular to the natural water flow direction of the stream. Pipes will be installed at set intervals across the bridge length to allow water to freely pass through.

The final top level of the bridge is horizontal (level) and extends across the total width of the existing stream. Where the horizontal bridge section ends at the edge of the stream a further concrete slab on both ends extends at an incline (approach ramps) to a level 1m above natural ground level. This is to mitigate vehicle approach at a slope towards the bridge.

Bridge foundations are concrete walls with footings varying between 1,0 to 1,5m deep below natural ground level or until suitable founding material is found. G5 type materials will be used to fill the void between foundations walls to support the concrete slab (driving surface). However, where suitable founding materials is reached less than 1.0m deep below natural ground level, foundation walls are not required, and G5 type fill material is adequate.

A combination of Gabion baskets, blankets and biddim material will be used to prevent erosion directly up and downstream from the bridge. These erosion prevention measures will continue along the total length of the bridge structure, including the approach ramps on either side. Along the upstream side of the bridge the top of the gabion baskets will be level with the invert level of the pipes going through the concrete. On the downstream side the top of the gabion baskets will be flush with the top of the driving surface.

Protruding concrete blocks will be placed at intervals on top of the driving surface along the edge of the road to indicate the side of the road during flood conditions. The height of the blocks will indicate if the water level is suitable for safe vehicle crossing.

Suspended bridge structure

Where the natural runoff channel is deep and narrow) a suspended bridge will span across. Suspended bridges are reinforced concrete structures with a driving surface (final top level) raised above ground (natural ground level). The structure crosses the waterway at a skew angle to align with the approach roadway alignment. The final top level of the bridge is horizontal (level) and has upstand beams on both sides. Where the horizontal bridge section ends at the edge of the stream a further concrete slab on both ends extends at an incline (approach ramps) to natural ground level. This is to mitigate vehicle approach at a slope towards the bridge. There are 3 walls supporting the bridge, 2 on both sides of the stream and one in the centre.

Bridge support walls (3 in total) are reinforced concrete which is founded on rock. The foundations are sunk 300mm deep into the rock and water will flow in between the supporting walls. The flow area through bridge support walls is more than the width of the existing natural channel hence no channelling of the stream occurs. Gabion structures both at the upstream and downstream side of the supporting walls will protect the structure against erosion.

As there is not enough space at the suspended bridge to divert stream flow to accommodate wet works, a temporary upstream coffer dam must be constructed to temporarily divert stream water away from the wet works during construction.

The Electrical Network Service Provider (NSP) for the site is Eskom. The site is being fed from the Haamanshof-Farmers 3 11kV overhead line (OHL) feeder which is then stepped down to the 400V voltage level via a 100kVA distribution transformer. As the electrical network of Eskom currently has insufficient capacity to supply the entire project with the necessary electricity, RenEnergy was tasked to design a plan where renewable energy is used to

supply the electricity needs of the project. The existing Eskom supply will therefore be supplemented with solar energy which is more sustainable.

Based on the electrical equipment that would be installed inside each one of the 20 broiler houses, the broiler houses will have a total peak power requirement of around 301.5kVA, including the new infrastructure at the entrance of the farm and requirement of the existing infrastructure, the total load requirement for the farm is estimated to be 312kVA. Solar panels are proposed on the roofs of the chicken houses. At a designated area close to the delivery point of Eskom the containerised solar batteries (distribution station) will be placed, and a generator room will be built to house the backup generators. A bunded Diesel Tank (2200L) will also be located within close vicinity of the Generator Room and Eskom delivery point. A low voltage (LV) underground cable will go from the existing Eskom point/transformer, via a trench, to the distribution station. A step-up transformer and 11KV overhead line will then distribute power from the distribution station to the proposed facilities. The electrical cable will have a copper core and isolated with PVC. Where the cable crosses the watercourse a treated timber pole will span the watercourse, and the cable will be attached to the pole.

The existing Eskom supply will therefore be supplemented with solar energy which is more sustainable.

A Water Treatment Plant is proposed to treat the water from the existing Boreholes (BH1 & BH2) which will be fed via a pipeline from the boreholes to the Water Treatment Plant. Thereafter, treated water will be sent to two proposed reservoirs (300kl each) on site. Water will be sent from the reservoir directly to the broiler houses. Water storage tanks will be located at each chicken house (1 x 5000 L & 1 x 1000 L). All water pipelines will run, as far as possible, on the side of existing and the new roads. The water pipeline consists of a PVC pipe. Where the water pipeline crosses the watercourse a treated timber pole will span the watercourse, and the pipeline will be attached to the pole.

Underground septic tanks will be located at the new ablution and domestic dwelling to manage domestic sewerage. The tanks will have a capacity of ±11m³ and will fall outside a 100m buffer from any watercourse/ wetland. Cold storage will be utilised as temporary storage for mortalities which will then be disposed of at a bio-approved landfill site or processed at an existing rendering plant (off-site). Domestic organic materials will be composted onsite as part of each households composting arrangement. The remaining solid waste will be separated into recycled and non-recycled materials and removed from the site on a weekly basis to the local municipal waste facility.

Manure will be dry swept and cleaned out of the chicken houses whereafter high-pressure hoses (washing pumps) will be used to clean the pens with any residual water being washed onto free range pastures and lost through evaporation. Chicken Manure will be used directly in the agricultural industry to be collected by surrounding farmers for crop fertilisation.

Refer to Appendix B1 for the proposed Site Development Plan.

Provide a description of any other activity alternatives investigated.

There are no activity alternatives. The development of a poultry broiler facility on the proposed site diversifies and complements the existing agricultural activities undertaken within the property.

Provide a motivation for the preferred activity alternative.

The development of a poultry broiler facility on the proposed site diversifies and complements the existing agricultural activities undertaken within the property and is in line with the existing land use rights. The proposed development site has been cultivated since before 1966 yet is currently unproductive.

The chicken farm and proposed additions provides socio-economic benefits for the region in terms of job creation, economic growth and food security. The intention is facilitating production of free-range chickens in response to the growing market need for free range chicken. A number of job opportunities will be provided during the construction phase (approximately 100 jobs) and an additional 40 job opportunities (approx.) will result directly from the operational phase of the development. Furthermore, additional job opportunities will result in the Elgin Free Range Hatcheries and the associated supply chain.

The development will complement the agricultural productivity on the farm, therefore having a high positive impact to the farming operations. The turnover of the proposed operations will contribute an estimated R55 million per annum to the agricultural economy with an estimated 4 359 168 kg of poultry meat produced per annum to contribute towards food security. The economic contribution within the agricultural supply chain of the region will have significant positive impacts i.e. approximately 6357 tons of feed will be required per annum, amongst others.

The proposed development will have knock-on effect for trade in local economy of the surrounding area, facilitate the provision of more protein to local markets, have direct and indirect employment opportunities (temporary and permanent), allow for skills transfers to new employees and contributing significantly to the local economy resulting in the upliftment of the area.

Provide a detailed motivation if no activity alternatives exist.

The development of a poultry broiler facility on the proposed site diversifies and complements the existing agricultural activates undertaken within the property and is in line with the existing land use rights. The proposed development site has been cultivating since before 1966 yet is currently unproductive. The proposed development will allow for a productive agricultural use to replace the current unproductive agricultural use of the proposed development footprint.

List the positive and negative impacts that the activity alternatives will have on the environment.

Positive Impacts:

- **Productive use of currently unproductive agricultural land.**
- **Knock-on effect for trade in local economy.**
- **Provision of more sustainable protein to local markets.**
- **Direct and indirect employment opportunities (temporary and permanent) and skills transfer to new employees.**
- **Significant financial contribution to the local economy.**

Negative Impacts:

- **Transformation of agricultural land with built-up units.**
- **Waste generation from the construction and operational phase.**
- **Potential hazardous waste generation during the operational phase – infectious mortalities.**
- **Potential nuisance factors (dust, noise and odor).**
- **Possible increase in visual intrusion within the agricultural landscape.**
- **Loss of biodiversity, aquatic habitat and ecological structure.**
- **Potential hydrology modification and change in sediment balance.**
- **Potential Water Quality impacts.**
- **Increased use of access roads and therefore generation of traffic.**
- **Potential surface water pollution from contaminated runoff (e.g. unit wash water).**
- **Depletion of the Groundwater Resource as a Result of Over-Abstraction.**
- **Quality Deterioration as a Result of Over-Abstraction.**
- **The risk of groundwater abstraction impacting surface water**
- **The risk of groundwater contamination due to a leaking septic tank, which may detrimentally impact a water resource**

1.3.	**Design or layout alternatives** to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts

Provide a description of the preferred design or layout alternative.

The preferred (Conceptual) Site Development Plan can be seen in Annexure B1.

The preferred layout alternative comprises of the following structures/ infrastructure:

The Broiler Facility will involve the establishment of 20 Broiler Houses (approx. 1044m² per facility) with free range pasture located at the side of each house. An Ablution facility, Guard House, Spray Race and Refrigerated Container (chicken mortalities) will be located at the entrance to the site. Furthermore, an additional Ablution Facility and Residential Dwelling will be located at the broiler facilities.

An existing access road will be utilised however numerous internal roads will be upgraded and realigned (6m width required) where applicable for biosecurity reasons, to improve traffic flow and safety, and to improve river crossings. Four watercourse crossings are required, two are existing crossings and two are new crossings within the proposed road alignment. Three of the structures proposed will be low waterway bridges and one will be a suspended bridge structure.

Low Water Bridges:

Low waterway bridges are reinforced concrete structures with a driving surface (final top level) raised above ground (natural ground level) and these structures cross waterways nearly perpendicular to the natural water flow direction of the stream. Pipes will be installed at set intervals across the bridge length to allow water to freely pass through.

The final top level of the bridge is horizontal (level) and extends across the total width of the existing stream. Where the horizontal bridge section ends at the edge of the stream a further concrete slab on both ends extends at an incline (approach ramps) to a level 1m above natural ground level. This is to mitigate vehicle approach at a slope towards the bridge.

Bridge foundations are concrete walls with footings varying between 1,0 to 1,5m deep below natural ground level or until suitable founding material is found. G5 type materials will be used to fill the void between foundations walls to support the concrete slab (driving surface). However, where suitable founding materials is reached less than 1.0m deep below natural ground level, foundation walls are not required, and G5 type fill material is adequate.

A combination of Gabion baskets, blankets and biddim material will be used to prevent erosion directly up and downstream from the bridge. These erosion prevention measures will continue along the total length of the bridge structure, including the approach ramps on either side. Along the upstream side of the bridge the top of the gabion baskets will be level with the invert level of the pipes going through the concrete. On the downstream side the top of the gabion baskets will be flush with the top of the driving surface.

Protruding concrete blocks will be placed at intervals on top of the driving surface along the edge of the road to indicate the side of the road during flood conditions. The height of the blocks will indicate if the water level is suitable for safe vehicle crossing.

Suspended bridge structure

Where the natural runoff channel is deep and narrow) a suspended bridge will span across. Suspended bridges are reinforced concrete structures with a driving surface (final top level) raised above ground (natural ground level). The structure crosses the waterway at a skew angle to align with the approach roadway alignment. The final top level of the bridge is horizontal (level) and has upstand beams on both sides. Where the horizontal bridge section ends at the edge of the stream a further concrete slab on both ends extends at an incline (approach ramps) to natural ground level. This is to mitigate vehicle approach at a slope towards the bridge. There are 3 walls supporting the bridge, 2 on both sides of the stream and one in the centre.

Bridge support walls (3 in total) are reinforced concrete which is founded on rock. The foundations are sunk 300mm deep into the rock and water will flow in between the supporting walls. The flow area through bridge support walls is more than the width of the existing natural channel hence no channelling of the stream occurs. Gabion structures both at the upstream and downstream side of the supporting walls will protect the structure against erosion.

As there is not enough space at the suspended bridge to divert stream flow to accommodate wet works, a temporary upstream coffer dam must be constructed to temporarily divert stream water away from the wet works during construction.

The Electrical Network Service Provider (NSP) for the site is Eskom. The site is being fed from the existing Haamanshof-Farmers 3 11kV overhead line (OHL) feeder which is then stepped down to the 400V voltage level via a 100kVA distribution transformer. Solar panels are proposed on the roofs of the chicken houses. At a designated area close to the delivery point of Eskom the containerised solar batteries (distribution station) will be placed, and a generator room will be built to house the backup generators. A bunded Diesel Tank (2200L) will also be located within close vicinity of the Generator Room. A low voltage (LV) underground cable will go from

the existing Eskom point/transformer, via a trench, to the distribution station. A step-up transformer and 11KV overhead line will then distribute power from the distribution station to the proposed facilities. The electrical cable will have a copper core and isolated with PVC. Where the cable crosses the watercourse a treated timber pole will span the watercourse, and the cable will be attached to the pole.

A Water Treatment Plant is proposed to treat the water from the existing Boreholes (BH1 & BH2) which will be fed via a pipeline from the boreholes to the Water Treatment Plant. Thereafter, treated water will be sent to two proposed reservoirs (300kl each) on site. Water will be sent from the reservoir directly to the broiler houses. Water storage tanks will be located at each chicken house (1 x 5000 L & 1 x 1000 L). All water pipelines will run, as far as possible, on the side of existing and the new roads. The water pipeline consists of a PVC pipe. Where the water pipeline crosses the watercourse a treated timber pole will span the watercourse, and the pipeline will be attached to the pole.

Underground septic tanks will be located at the new ablution and domestic dwelling to manage domestic sewerage. The tanks will have a capacity of ±11m^3 and will fall outside a 100m buffer from any watercourse/ wetland.

Provide a description of any other design or layout alternatives investigated.

A. The following layout alternatives were considered for the new proposed development regarding the internal road network:

Initially, the preferred layout alternative indicated the internal road network to follow the alignment depicted in Figure 10 below. This was the Applicants preferred alternative as the road would follow the natural contours of the property and provide the easy movement of trucks onto site. However, this would entail the construction of a new watercourse crossing slightly south of the existing watercourse crossing. The EAP raised the concern after a site visit to the property however the Freshwater Specialist was asked to consider the proposed route. The freshwater specialist confirmed that the proposed crossing area is still largely in a natural state, with vegetation classified as critically endangered which extends to the permanently wet areas around the site as well. The stream in question was also assessed as having High Ecological Importance and Sensitivity, which places it in a Recommended Ecological Category A which requires that its current ecological condition be maintained.

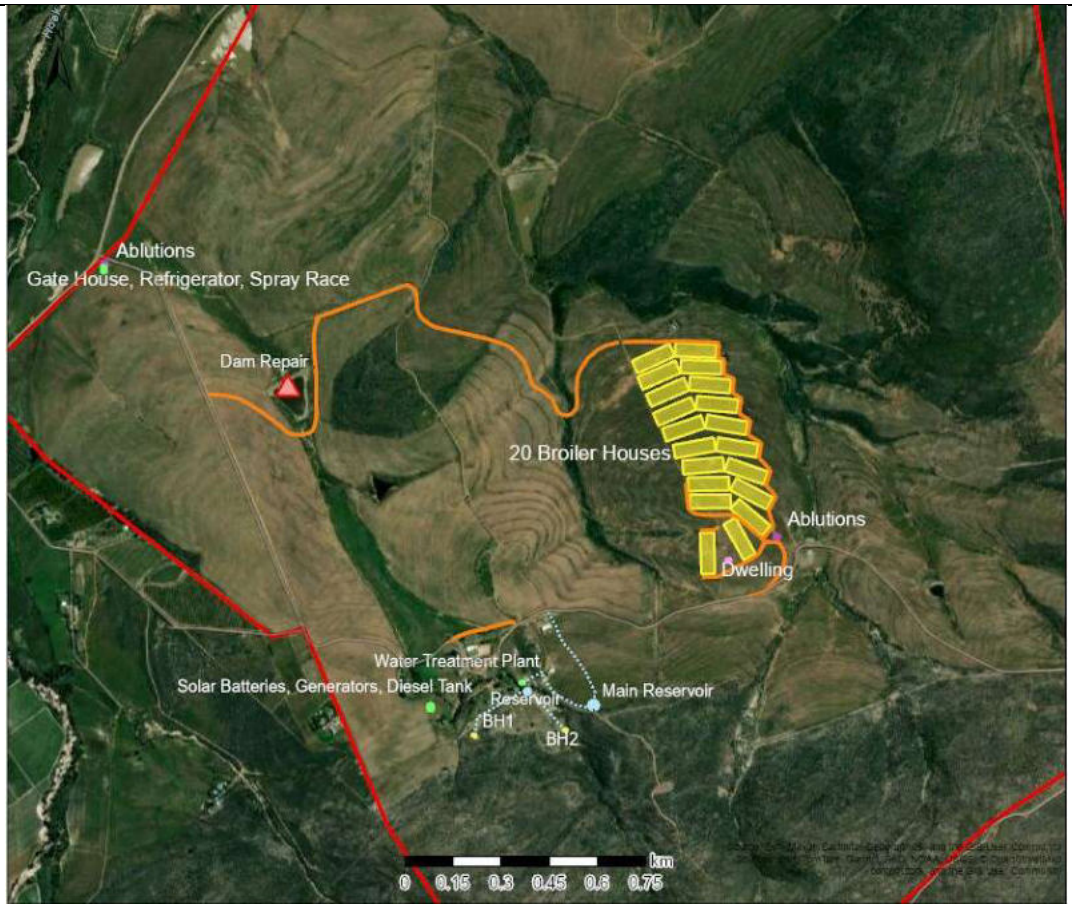

***Figure 10**: The initial layout for the proposed activities showing the old road layout.*

In consultation between the EAP, Freshwater Specialist and the Applicant it was agreed that this route would be avoided and no longer be considered a viable alternative and therefore scoped out. The existing watercourse crossing indicated in Figure 11 below would therefore be utilised.

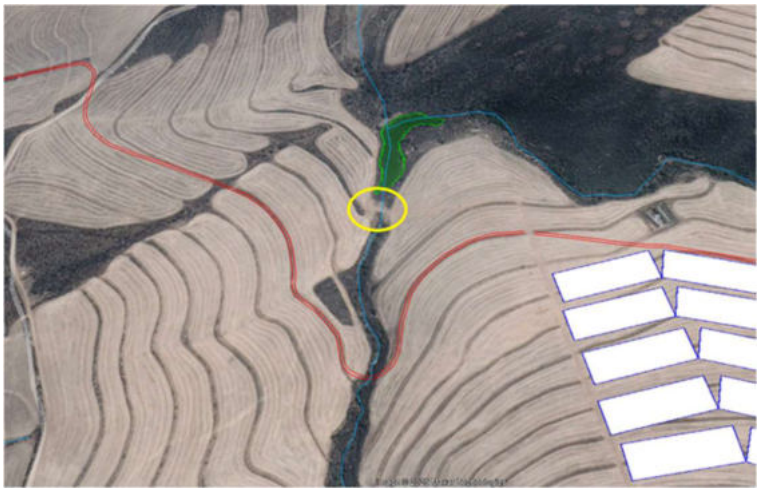

***Figure 11**: Showing the initial route alignment and water crossing (red) location in relation to the existing crossing (yellow circle).*

The road network was therefore realigned to accommodate the existing crossing instead. The preferred internal road network realignment is indicated in Figure 12. Therefore, if the crossing had remained in its original location, it would result in a medium - high negative impact on the stream, even with mitigation measures and rehabilitation of the downstream area. However, by utilising the existing crossing, the impact is Low negative. The impact was therefore avoided by proposing to formalise the existing crossing.

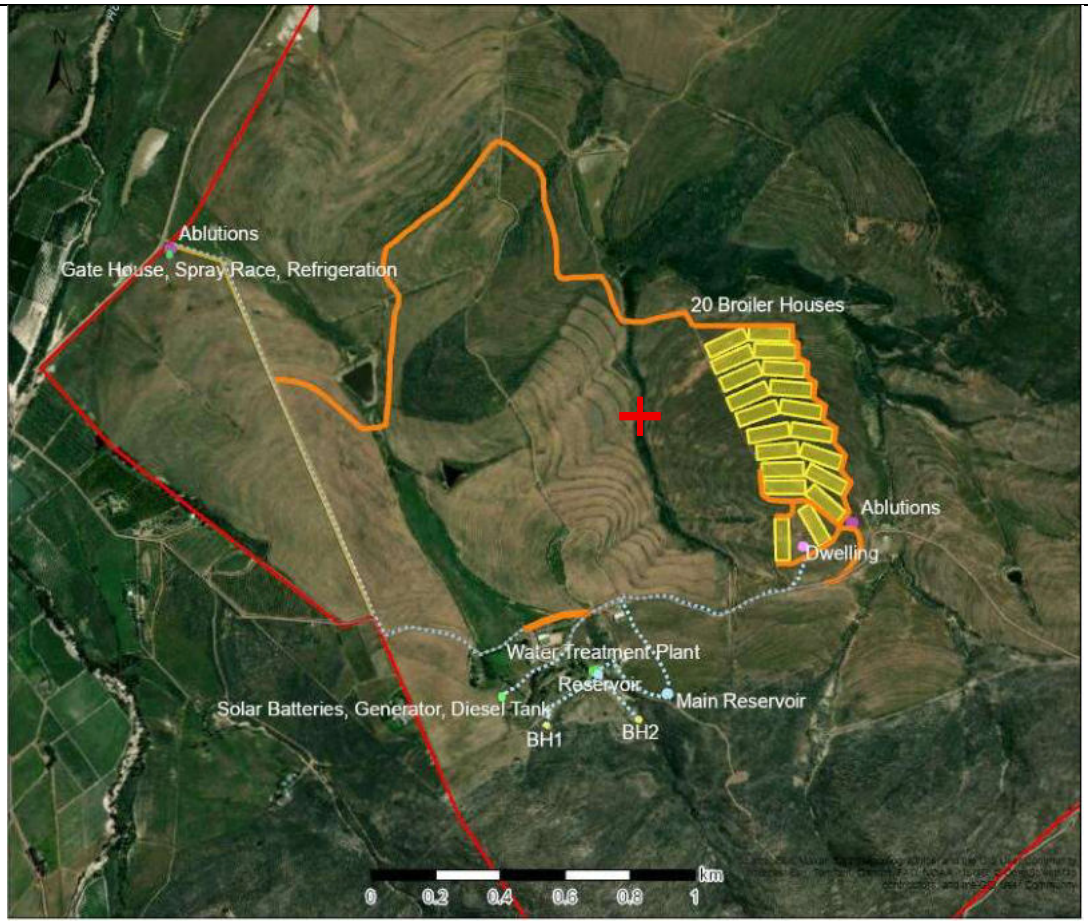

***Figure 12**: Showing the revised SDP with the new road realignment (orange) making use of the existing river crossing (showing the alternative crossing at the red X which was avoided).*

B. The following design alternatives were considered for the new proposed development regarding the river road crossings:

The initial design for the proposed stream crossings, particularly at the confluence of Streams A and B and at the lower crossing over Stream C, did not accommodate subsurface flow. This would have impeded groundwater movement and likely caused fragmentation and possible desiccation of downstream wetland areas associated with these reaches. In response, these impacts have been avoided, through the preferred option which now incorporates subsurface drainage via a no-fines sub-soil drain and an embedded pipe network to maintain hydrological connectivity and lower any flow modification impacts associated with these structures.

Engineering plans for the preferred alternative have been included in Annexure B1.

C. The following design alternatives were considered for the electrical power distribution cable/ line:

The proposed HT power distribution lines (11kv) were originally going to be located within a trench system. However, it has since been determined that the cost of trenching the power lines far outweighs the cost of erecting the cables overhead. The power distribution lines will therefore be located along the same route indicated however they will be overhead transmission lines (except for a short section from the existing Eskom point/transformer to the proposed distribution station which will be trench (solid green line on SDP)).

D. The following layout alternatives were considered for the new proposed development regarding the Farmyard area:

Initially, the infrastructure within the farmyard area was lain out as per Figure 13 below. It has since been decided that the two reservoirs and the water treatment plant move away from the drainage line found running between the original placement of the main reservoir and BH2. The two reservoirs and water treatment plant will be located within a disturbed location (cultivated fields) that will allow for gravity flow to the broiler facility. It was also decided

to move the 'solar batteries, generator and diesel tank' closer to the farm shed and further away from the boundary of the property. Refer to Figure 14 for the revised layout within the farmyard.

Figure 13: Showing the intial layout within the Farmyard.

Figure 14: Showing the new revised layout within the Farmyard (the yellow triangle depicts the proposed suspended bridge location and the two purple dots indicate the stream crossings).

The solar batteries, generator and diesel tank have moved slightly away from the Eskom point/ transformer. A low voltage (LV) underground cable will go from the Eskom point/transformer, via a trench (solid green line), to a

distribution station (green block) where the batteries etc., switch gear and rectifier will be located. This location is closer to the current sheds/workshop for easy access. A step-up transformer and 11KV overhead line (grey/ blue dotted line) will distribute power from the distribution station to the broiler facility and entrance facilities. Where the cable crosses the stream (purple dot) a treated timber pole will span the stream, and the cable will be attached to the pole.

Water pipelines (yellow dotted line) will run directly from BH1 and BH2 directly to the consolidated reservoirs and water treatment plant away from the drainage line. The water pipeline will then continue to run to the east and the west along the approximate position of the blue/ grey dotted line (along with the overhead powerlines). Where the water pipeline crosses the stream (purple dot) a treated timber pole will span the watercourse, and the pipeline will be attached to the pole.

Provide a motivation for the preferred design or layout alternative.

The preferred layout alternative avoids constructing a river crossing within an area that is still largely in a natural state, with vegetation classified as a critically endangered and the stream being classified as having a High Ecological Importance and Sensitivity, which places it in a Recommended Ecological Category A requiring that its current ecological condition be maintained.

The preferred layout for the internal road network will accommodate the existing crossing which already has a disturbed footprint. If the crossing had remained in its original location, it would result in a medium - high negative impact on the stream, even with mitigation measures and rehabilitation of the downstream area. However, by utilising the existing crossing, the impact is Low.

The preferred river crossing designs accommodate subsurface flow and therefore maintains hydrological connectivity and lowers any flow modification impacts associated with these structures.

The preferred farmyard layout will consolidate the reservoir and water treatment plant away from the stream and allow a gravity fed water system, reducing pumping and therefore electricity usage. The repositioning of the 'solar batteries, generator and diesel tank' allows for more consolidated infrastructure within the existing farmyard and thereby further away from the boundary of the property.

Provide a detailed motivation if no design or layout alternatives exist.

If the crossing had remained in its original location, it would result in a medium - high negative impact on the stream, even with mitigation measures and rehabilitation of the downstream area. However, by utilising the existing crossing, the impact is Low. The preferred layout alternative will therefore be the only layout option to take forward.

The preferred river crossing designs accommodate subsurface flow and therefore maintains hydrological connectivity and lowers any flow modification impacts associated with these structures. The preferred design alternative will therefore be the only design option to take forward. The engineering plans have been included in Annexure B1.

List the positive and negative impacts that the design alternatives will have on the environment.

Positive Impacts:

- **Productive use of currently unproductive agricultural land.**
- **Knock-on effect for trade in local economy.**
- **Provision of more sustainable protein to local markets.**
- **Direct and indirect employment opportunities (temporary and permanent) and skills transfer to new employees.**
- **Significant financial contribution to the local economy.**

Negative Impacts:

- **Transformation of agricultural land with built-up units.**
- **Waste generation from the construction and operational phase.**
- **Potential hazardous waste generation during the operational phase – infectious mortalities.**
- **Potential nuisance factors (dust, noise and odor).**
- **Possible increase in visual intrusion within the agricultural landscape.**

- **Loss of biodiversity, aquatic habitat and ecological structure.**
- **Potential hydrology modification and change in sediment balance.**
- **Potential Water Quality impacts.**
- **Increased use of access roads and therefore generation of traffic.**
- **Potential surface water pollution from contaminated runoff (e.g. unit wash water).**
- **Depletion of the Groundwater Resource as a Result of Over-Abstraction.**
- **Quality Deterioration as a Result of Over-Abstraction.**
- **The risk of groundwater abstraction impacting surface water.**
- **The risk of groundwater contamination due to a leaking septic tank, which may detrimentally impact a water resource.**

1.4.	**Technology alternatives** (e.g., to reduce resource demand and increase resource use efficiency) to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.

Provide a description of the preferred technology alternative:

High pressure pumps will be used for the cleaning of the chicken houses after every cycle is completed. There will be six to seven cycles per annum. This will ensure minimal water usage.

The applicant intends to install solar panels to supplement the power supply.

Provide a description of any other technology alternatives investigated.

The technology used within the poultry broiler facilities will continue to be upgraded as technology improves to ensure all resources are used as efficiently as possible.

Provide a motivation for the preferred technology alternative.

The technology used within the poultry broiler facilities will continue to be upgraded as technology improves to ensure all resources are used as efficiently as possible.

Provide a detailed motivation if no alternatives exist.

The technology used within the poultry broiler facilities will continue to be upgraded as technology improves to ensure all resources are used as efficiently as possible.

List the positive and negative impacts that the technology alternatives will have on the environment.

Positive:

- **Minimal water usage**
- **Reduced potential for resource contamination**
- **Utilising alternative energy which is more sustainable**

1.5.	**Operational alternatives** to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts.

Provide a description of the preferred operational alternative.

The preferred operational alternative entails the operation of 20 chicken houses with free range grazing between the houses. Each chicken pen will be able to house a maximum of 17 000 birds at any given time. Chicken rearing will take place in ±2-month cycles whereafter the chickens will be removed from the site. The manure will be loaded and taken to neighbouring farmers who will buy the manure to use on their grain producing fields. Chicken pens will be cleaned using high pressure pumps.

Refer also to the description of the preferred "Activity Alternatives" in Section 1.2 above.

Provide a description of any other operational alternatives investigated.

There are no operational alternatives. The development site is a working farm. The proposed development will diversify the existing onsite agricultural activities and improve self-sufficiency of the existing farming operation as the chicken manure is used to fertilise fields. Through the implementation of the operational goals of the EMPr any negative impacts associated with the poultry broiler facilities can be avoided or mitigated to LOW impact.

Provide a motivation for the preferred operational alternative.

There are no operational alternatives. The development site is a working farm. The proposed development will diversify the existing onsite agricultural activities and improve self-sufficiency of the existing farming operation as the chicken manure is used to fertilise fields. Through the implementation of the operational goals of the EMPr any negative impacts associated with the poultry broiler facilities can be avoided or mitigated to LOW impact.

Provide a detailed motivation if no alternatives exist.

There are no operational alternatives. The development site is a working farm. The proposed development will diversify the existing onsite agricultural activities and improve self-sufficiency of the existing farming operation as the chicken manure is used to fertilise on site and neighbouring fields.

List the positive and negative impacts that the operational alternatives will have on the environment.

Positive Impacts:

- **Productive use of currently unproductive agricultural land.**
- **Knock-on effect for trade in local economy.**
- **Provision of more sustainable protein to local markets.**
- **Direct and indirect employment opportunities (temporary and permanent) and skills transfer to new employees.**
- **Significant financial contribution to the local economy.**

Negative Impacts:

- **Transformation of agricultural land with built-up units.**
- **Waste generation from the operational phase.**
- **Potential hazardous waste generation during the operational phase – infectious mortalities.**
- **Potential nuisance factors (dust, noise and odor).**
- **Possible increase in visual intrusion within the agricultural landscape.**
- **Loss of biodiversity, aquatic habitat and ecological structure.**
- **Potential hydrology modification and change in sediment balance.**
- **Potential Water Quality impacts.**
- **Increased use of access roads and therefore generation of traffic.**
- **Potential surface water pollution from contaminated runoff (e.g. unit wash water).**
- **Depletion of the Groundwater Resource as a Result of Over-Abstraction.**
- **Quality Deterioration as a Result of Over-Abstraction.**
- **The risk of groundwater abstraction impacting surface water.**
- **The risk of groundwater contamination due to a leaking septic tank, which may detrimentally impact a water resource**

1.6.	The option of not implementing the activity (the '**No-Go' Option**).

Provide an explanation as to why the 'No-Go' Option is not preferred.

The 'No-Go' option, where the development of the poultry broiler facility is not pursued, was evaluated. This alternative would result in the loss of positive socio-economic opportunities in the form of significant income generating employment opportunities and a significant financial contribution within the local economy. The company needs to expand its chicken broiler operations to meet the growing demand in the market and this will not be realised within the no-go alternative. Minor negative environmental impacts are associated with the Preferred Alternative however these have been avoided or mitigated to be of a LOW significance. The no-go option will result in the loss of the Medium – High positive socio-economic impacts associated with the proposed activities. Therefore, the No-Go option is not considered the best-practicable environmental option. The no-go option identifies the most beneficial or least damaging option for the environment, considering both short-term and long-term impacts and emphasizes a holistic approach, balancing environmental, economic, and social factors.

1.7.	Provide and explanation as to whether any other alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist.

No other alternatives (other than the alternatives listed above) have been identified.

1.8.	Provide a concluding statement indicating the preferred alternatives, including the preferred location of the activity.

The preferred alternative involves the proposed development of a free-range poultry broiler facility to be located on the Remainder of Farm Number 563, the Remainder of Farm Number 564, the Remainder of Farm Number 565, and the Farm Kleinfontein Number 954 in the Breede Valley Municipality Division Worcester, Province Western Cape. Collectively the four farm portions are approximately 987 ha in extent and are located approximately 30 kilometres south of Worcester and approximately 13 kilometres north of Villiersdorp with access being obtained via a gravel road (Koppies Road) off the R43.

The location of the proposed activities within the only property alternative has been developed based on the existing access route, topography of the property, fallow agricultural fields, environmental sensitivities and biosecurity requirements and has attempted to minimize environmental impacts as much as possible.

The Applicant proposes the development of a Free-Range Poultry Broiler Facility. The Broiler Facility will involve the establishment of 20 Broiler Houses (approx. 1044m² per facility) with free range pasture located at the side of each house. Each facility will house approximately 17 000 birds. Chicken rearing will take place in 2-month cycles whereafter the chickens will be removed from the site, the manure will be taken to the or relevant use location and the chicken pens cleaned using high pressure hoses (washing pumps). An Ablution facility, Guard House, Spray Race and Refrigerated Container will be located at the entrance to the site. Furthermore, an additional Ablution Facility and Residential Dwelling will be located at the broiler facilities.

An existing access road will be utilised and numerous internal roads will be upgraded and realigned (6m width required) where applicable for biosecurity reasons, to improve traffic flow and safety, and to improve river crossings but utilising existing river crossings where possible. The preferred layout for the internal road network will accommodate the existing crossing which already has a disturbed footprint and avoids a section where the stream is in a natural state. Four watercourse crossings are required, two are existing crossings and two are new crossings within the proposed road alignment. Three of the structures proposed will be low waterway bridges and one will be a suspended bridge structure.

Low Water Bridges:

Low waterway bridges are reinforced concrete structures with a driving surface (final top level) raised above ground (natural ground level) and these structures cross waterways nearly perpendicular to the natural water flow direction of the stream. Pipes will be installed at set intervals across the bridge length to allow water to freely pass through.

The final top level of the bridge is horizontal (level) and extends across the total width of the existing stream. Where the horizontal bridge section ends at the edge of the stream a further concrete slab on both ends extends at an incline (approach ramps) to a level 1m above natural ground level. This is to mitigate vehicle approach at a slope towards the bridge.

Bridge foundations are concrete walls with footings varying between 1,0 to 1,5m deep below natural ground level or until suitable founding material is found. G5 type materials will be used to fill the void between foundations walls to support the concrete slab (driving surface). However, where suitable founding materials is reached less than 1.0m deep below natural ground level, foundation walls are not required, and G5 type fill material is adequate.

A combination of Gabion baskets, blankets and biddim material will be used to prevent erosion directly up and downstream from the bridge. These erosion prevention measures will continue along the total length of the bridge structure, including the approach ramps on either side. Along the upstream side of the bridge the top of the gabion baskets will be level with the invert level of the pipes going through the concrete. On the downstream side the top of the gabion baskets will be flush with the top of the driving surface.

Protruding concrete blocks will be placed at intervals on top of the driving surface along the edge of the road to indicate the side of the road during flood conditions. The height of the blocks will indicate if the water level is suitable for safe vehicle crossing.

Suspended bridge structure

Where the natural runoff channel is deep and narrow) a suspended bridge will span across. Suspended bridges are reinforced concrete structures with a driving surface (final top level) raised above ground (natural ground

level). The structure crosses the waterway at a skew angle to align with the approach roadway alignment. The final top level of the bridge is horizontal (level) and has upstand beams on both sides. Where the horizontal bridge section ends at the edge of the stream a further concrete slab on both ends extends at an incline (approach ramps) to natural ground level. This is to mitigate vehicle approach at a slope towards the bridge. There are 3 walls supporting the bridge, 2 on both sides of the stream and one in the centre.

Bridge support walls (3 in total) are reinforced concrete which is founded on rock. The foundations are sunk 300mm deep into the rock and water will flow in between the supporting walls. The flow area through bridge support walls is more than the width of the existing natural channel hence no channelling of the stream occurs. Gabion structures both at the upstream and downstream side of the supporting walls will protect the structure against erosion.

As there is not enough space at the suspended bridge to divert stream flow to accommodate wet works, a temporary upstream coffer dam must be constructed to temporarily divert stream water away from the wet works during construction.

The site is being fed from the Haamanshof-Farmers 3 11kV overhead line (OHL) feeder which is then stepped down to the 400V voltage level via a 100kVA distribution transformer. Based on the electrical equipment that would be installed inside each one of the 20 broiler houses, the broiler houses will have a total peak power requirement of around 301.5kVA, including the new infrastructure at the entrance of the farm and requirement of the existing infrastructure, the total load requirement for the farm is estimated to be 312kVA. Solar panels are proposed on the roofs of the chicken houses. At a designated area close to the delivery point of Eskom the containerised solar batteries (distribution station) will be placed, and a generator room will be built to house the backup generators. A bunded Diesel Tank (2200L) will also be located within close vicinity of the Generator Room. The existing Eskom supply will therefore be supplemented with solar energy which is more sustainable. A low voltage (LV) underground cable will go from the existing Eskom point/transformer, via a trench, to the distribution station. A step-up transformer and 11KV overhead line will then distribute power from the distribution station to the proposed facilities. Where the cable crosses the stream (purple dot) a treated timber pole will span the stream, and the cable will be attached to the pole.

A Water Treatment Plant is proposed to treat the water from the existing Boreholes (BH1 & BH2) which will be fed via a pipeline from the boreholes to the Water Treatment Plant. Thereafter, treated water will be sent to two proposed reservoirs (300kl each) on site. Water will be sent from the reservoir directly to the broiler houses. Water storage tanks will be located at each chicken house. All water pipelines will run, as far as possible, on the side of existing and the new roads. The water pipeline consists of a PVC pipe. Where the water pipeline crosses the watercourse a treated timber pole will span the watercourse, and the pipeline will be attached to the pole.

Underground septic tanks will be located at the new ablution and domestic dwelling to manage domestic sewerage. The tanks will have a capacity of ±11m^3 and will fall outside a 100m buffer from any watercourse/ wetland. Cold storage will be utilised as temporary storage for mortalities which will then be disposed of at a bio-approved landfill site or processed at an existing rendering plant (off-site). Organic materials will be composted onsite as part of each households composting arrangement. The remaining solid waste will be separated into recycled and non-recycled materials and removed from the site on a weekly basis to the local municipal waste facility.

Manure will be dry swept and cleaned out of the chicken houses whereafter high-pressure pumps will be used to clean the pens with any residual water lost through evaporation. Chicken Manure will be used directly in the agricultural industry to be collected by surrounding farmers for crop fertilisation.

The technology used within the poultry broiler facilities will continue to be upgraded as technology improves to ensure all resources are used as efficiently as possible.

Refer to Appendix B1 for the proposed Site Development Plan.

The development plan adheres to existing land use rights and diversifies the property's agricultural activities while minimizing environmental impact. The proposed layout ensures compliance with biosecurity requirements. This

alternative represents the most viable option for the landowners, effectively balancing operational efficiency with sustainability and regulatory compliance.

The 'No-Go' option, where the development of the poultry broiler facility is not pursued, was evaluated. This alternative would result in the loss of positive socio-economic opportunities in the form of significant income generating employment opportunities and a significant financial contribution within the local economy. The company needs to expand its chicken broiler operations to meet the growing demand in the market and this will not be realised within the no-go alternative. Minor negative environmental impacts are associated with the Preferred Alternative however these have been avoided or mitigated to be of a LOW significance. The no-go option will result in the loss of the Medium – High positive socio-economic impacts associated with the proposed activities. Therefore, the No-Go option is not considered the best-practicable environmental option.

2. "No-Go" areas

Explain what "no-go" area(s) have been identified during identification of the alternatives and provide the co-ordinates of the "no-go" area(s).

The Freshwater Specialist identified four streams (Stream A - D) which include any wetland areas. All four streams are considered no-go areas except where river crossings are required for the internal access roads or the two river crossings for the electrical cable/ water pipeline. A buffer zone extending 6 meters upstream and downstream of the construction footprint (within the stream channel) should be clearly demarcated. No disturbance or activity should occur beyond these designated areas within the stream channel. The boundaries of this buffer zone must be physically demarcated using high-visibility fencing or flagging prior to the commencement of any construction activities.

All areas of indigenous vegetation are to be considered no-go areas unless these fall within the approved river crossing locations (where less than 300 sqm will be removed).

Environmental Sensitivities Map (Appendix B3).

3. Methodology to determine the significance ratings of the potential environmental impacts and risks associated with the alternatives.

Describe the methodology to be used in determining and ranking the nature, significance, consequences, extent, duration of the potential environmental impacts and risks associated with the proposed activity or development and alternatives, the degree to which the impact or risk can be reversed and the degree to which the impact and risk may cause irreplaceable loss of resources.

IMPACT RATING METHODOLOGY

Nature of the impact - This is an appraisal of the type of effect the construction, operation and maintenance of a development would have on the affected environment. This description should include what is to be affected and how.

Extent of the impact - Describe whether the impact will be: local extending only as far as the development site area; or limited to the site and its immediate surroundings; or will have an impact on the region, or will have an impact on a national scale or across international borders.

Reversibility -

- Completely reversible – the impact can be reversed with the implementation of minor mitigation measures.
- Partly reversible – the impact is reversible, but more intense mitigation measures are required.
- Barely reversible – the impact is unlikely to be reversed even with intense mitigation measures.
- Irreversible – the impact is irreversible, no mitigation measures exist.

Irreplaceable loss of resources - Describes the degree to which resources will be irreplaceably lost due to the proposed activity. It can be no loss of resources, marginal loss, significant loss or complete loss of resources.

The significance of each impact identified was assessed according to the following variables (evaluation components):

Significance is the product of ***probability and severity***. Probability describes the likelihood of the impact actually occurring, and is rated as follows:

Probability:

Probability		
Improbable	Low possibility of impact to occur either because of design or historic experience.	Rating = 1
Probable	Distinct possibility that impact will occur.	Rating = 2
Highly probable	Most likely that impact will occur.	Rating = 3
Definite	Impact will occur, in the case of adverse impacts regardless of any prevention measures.	Rating = 4

The ***severity factor*** is calculated from the factors given to "***intensity" and "duration***". Intensity and duration factors are awarded to each impact, as described below.

The ***intensity factor*** is awarded to each impact according to the following method:

Intensity factor		
Low intensity	Natural and man-made functions not affected.	Factor 1
Medium intensity	Environment affected but natural and man-made functions and processes continue.	Factor 2
High intensity	Environment affected - natural or man-made functions are altered to the extent that it will temporarily or permanently cease or become dysfunctional.	Factor 3

Duration is assessed and a factor awarded in accordance with the following:

Duration		
Short term	<1 to 5 years	Factor 1
Medium term	5 to 15 years	Factor 2
Long term	Impact will only cease After the operational life of the activity, either because of natural process or by human intervention	Factor 3
Permanent	Mitigation, either by Natural process or by human intervention, will not occur in such a way or in such a time span that the impact can be considered transient	Factor 4

The ***severity rating*** is obtained from calculating a severity factor and comparing the severity factor to the rating in the table below. For example:

The severity factor = intensity factor x duration factor

= 2 x 3

= 6

A ***severity factor*** of six (6) equals a severity rating of medium severity (rating 3) as per table below:

RATING	**FACTOR**
Low severity (rating 2)	Calculated values 2 to 4
Medium severity (rating 3)	Calculated values 5 to 8
High severity (rating 4)	Calculated values 9 to 12
Very high severity (rating 5)	Calculated values 13 to 16
Severity factors below 3 indicate no impact	

A significance rating is calculated by multiplying the severity rating with the probability rating.

The ***significance rating*** should influence the development project as described below:

SIGNIFICANCE RATING		
Low significance	Calculated significance rating 4 to 6	Positive impact and negative impacts of low significance should have no influence on the proposed development project.
Medium significance	Calculated significance rating >6 to 15	Positive impact: Should weigh towards a decision to continue Negative impact: Should be mitigated to a level where the impact would be of medium significance before project can be approved.
High significance	Calculated significance rating 16 and more	Positive impact: Should weigh towards a decision to continue, should be enhanced in final design. Negative impact: Should weigh towards a decision to terminate proposal, or mitigation should be performed to reduce significance to at least medium significance rating.

The impacts were assessed for all feasible and reasonable Alternatives including the "no - go" option, with and without the implementation of proposed mitigation measures.

Cumulative impact: in relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities.

4. Assessment of each impact and risk identified for each alternative

Note: The following table serves as a guide for summarising each alternative. The table should be repeated for each alternative to ensure a comparative assessment. The EAP may decide to include this section as Appendix J to this BAR.

Please refer to Appendix J for the impact and risk assessment.

SECTION I: FINDINGS, IMPACT MANAGEMENT AND MITIGATION MEASURES

1.	Provide a summary of the findings and impact management measures identified by all Specialist and an indication of how these findings and recommendations have influenced the proposed development.

HERITAGE:

A Notification of Intent to Develop and Heritage Screener report was submitted to HWC for comment by the Heritage Specialist. According to the Heritage Specialist, "*Based on the information available, it is unlikely that significant heritage resources will be negatively impacted by the proposed development and as such, no further heritage studies are recommended*". Comment received from HWC confirmed that no Heritage resources are likely to occur on site and that no further studies will be required.

Please refer to Appendix G1 (Heritage NID and Screener) and Appendix E1 (Final Comment from HWC)

FRESHWATER:

Of the proposed project components, only the new stream crossings will directly impact the freshwater features on site. Additionally, the nature of the development (a chicken broiler facility) could potentially pose a risk of indirect impacts on water quality, primarily affecting Streams C and D, as well as some limited hydrological impacts during the maintenance phase.

These activities might impact on the following:

1. POTENTIAL IMPACT – LOSS OF BIODIVERSITY AND ECOLOGICAL STRUCTURE:

The proposed activities involve the installation of three new road crossings, two over Streams A and B, and one over Stream C, as well as one pipeline crossing over Stream B. The road crossings will require soil excavation, vegetation clearance, and in-stream construction, and are therefore expected to have a definite impact on biodiversity and ecological structure at the crossing points. In contrast, the pipeline crossing will consist of a treated timber pole spanning the watercourse, with the pipeline mounted above the stream. As this method avoids direct disturbance to the streambed and banks, it is expected to have minimal impact on the aquatic environment.

Streams A and B have already been assessed as being in a largely to seriously modified state with low EIS at the proposed crossing locations, with significant existing alterations to the streambed and banks, as well as extensive vegetation removal. Consequently, the construction of road crossings over Streams A and B is expected to result in a short-term, low negative impact.

Although the general condition of Stream C was found to be in a largely natural state with high EIS, the proposed road crossing will be located at an existing informal crossing that has already undergone vegetation clearance and soil compaction. The formalisation of this crossing, combined with the rehabilitation of the surrounding disturbed areas, is anticipated to result in a long-term, low to medium positive impact on the directly surrounding section of the stream.

Mitigation measures:

To try and minimise this impact, the following mitigation measures are proposed.

Construction Phase:

- **All road crossing structures must be designed to avoid obstruction of streamflow, including low flows.**
- **Construction activities directly involving freshwater features (i.e., road and pipeline crossings) should preferably be scheduled during the dry summer months—typically from December to March—when rainfall and runoff are at their lowest.**
- **If any flow is present within the streams during construction, appropriate measures must be taken to divert the water around the work area and ensure its release downstream.**
- **A buffer zone extending 6 meters upstream and downstream of the construction footprint should be clearly demarcated. No disturbance or activity should occur beyond these designated areas within the stream channel.**
- **The boundaries of this buffer zone must be physically demarcated using high-visibility fencing or flagging prior to the commencement of any construction activities.**

- **Work within the stream channels should be limited strictly to essential areas.**
- **Clearing of riparian or wetland vegetation must be avoided where possible or otherwise kept to a minimum. Where practicable, vegetation should be pruned or topped rather than grubbed or uprooted.**
- **All wetland/stream areas disturbed during construction must be rehabilitated and revegetated with appropriate indigenous wetland and riparian buffer species once construction is complete.**

Operational Phase:

- **All rehabilitated and revegetated areas within the wetland/stream areas should be monitored for the following 2 years, ensuring the establishment of good plant biodiversity.**
- **Monitoring of all stream crossings for signs of erosion, debris build-up or nuisance growth around the culverts, should be included and addressed in a formal Maintenance and Management Plan for the project.**
- **No use of machinery is allowed within any wetland/stream channels for the operational phase.**
- **All debris must be removed and properly disposed of.**
- **No dumping of debris should be allowed in the stream/wetland areas.**
- **Any wetland/ riparian or instream areas disturbed by Maintenance activities to be rehabilitated and revegetated (if necessary) after maintenance works**

<u>Impact with mitigation measures:</u>

Should all mitigation measures be taken into account, the general impact of the above activities would be:

- **Construction Phase: Short-term, Low Negative nature**
- **Operational Phase: Long Term, Low to Medium Positive nature.**

2. POTENTIAL IMPACT - WATER QUALITY IMPAIRMENT:

During the construction phase, vegetation clearing and physical disturbances to stream banks and wetland areas at freshwater crossings may increase the risk of erosion and subsequent sedimentation in downstream freshwater systems. Additionally, construction activities inherently carry a risk of general pollution, which could lead to the degradation of surface water quality in receiving freshwater features. This impact is expected to be of a short-term, low to medium negative nature, affecting the immediate surrounding freshwater environment.

Looking at operational phase impacts, the nature of the proposed development, a chicken broiler facility located on a slope, poses a potential risk of significant water quality degradation in nearby freshwater systems. Broiler litter is typically rich in nutrients, microbes, organics, and trace metals; therefore, runoff from the broiler site could lead to eutrophication in downstream areas, particularly following the first seasonal rains. If not properly mitigated, such runoff could substantially degrade water quality and indirectly impact aquatic biodiversity associated with the streams.

The client has indicated that management practices will include dry sweeping and the removal of manure, followed by high-pressure washing of broiler areas, with wash water directed into surrounding pastures. In addition, as part of a stormwater management plan, the construction of stormwater swales along access roads is proposed, designed to accumulate runoff in designated dry pans.

Should the above be applied, the operational phase of the project is expected to have a very low negative impact on water quality within Streams C and D.

<u>Mitigation measures:</u>

The following mitigation measures are proposed to minimise any impacts:

Construction Phase:

- **As mentioned above, construction activities should preferably take place during the drier months, and special attention should be given to managing water quality impacts in the construction Environmental Management Programme (EMP).**
- **Temporary silt fencing, sandbags, or berms should be installed within downstream channels to prevent sediment generated during construction from entering downstream freshwater features.**

- **Implement a phased clearing approach, limiting vegetation clearance to areas required for active construction only.**
- **Designate stockpile locations at least 50 metres away from any watercourses or wetland areas.**
- **Prevent contaminated runoff from construction sites from entering adjacent streams or wetlands by using diversion drains and berms. Temporary detention basins or sediment traps should be constructed to capture excess sediment before it reaches wetland or stream areas.**
- **Good Site Management Practices include:**
    - **Portable chemical toilets must be provided at all work sites, or ensure that conveniently located site toilets are available. Toilet facilities must not be located within 100 metres of any stream or wetland areas.**
    - **Maintain and clean toilets regularly to ensure they remain in good working order and hygienic condition.**
    - **No waste or foreign materials may be dumped into streams or wetlands. These areas must also not be used for cleaning clothing, tools, or equipment.**
    - **Prevent the discharge of water containing polluting matter or visible suspended solids directly into streams or wetland areas.**
    - **Immediately clean any accidental oil or fuel spills or leaks. Do not hose or wash spills into the surrounding natural environment.**
    - **All operations involving the use of cement and concrete (outside of the batching plant) must be carefully controlled.**
    - **Limit cement and concrete mixing to designated sites wherever possible.**

Operational Phase

- **The existing plans would sufficiently address the possible water quality impacts posed by the broiler site.**

<u>Impact with mitigation measures:</u>

If these mitigation measures are adhered to, the impact of the proposed upgrade works is expected to have a Low to very low negative impact on the water quality of downstream freshwater features.

3. POTENTIAL IMPACT – FLOW MODIFICATION AND CHANGE IN SEDIMENT BALANCE:

The following flow modification impacts are expected during the construction and operational phases of the project.

Construction Phase

- **If flow is present during construction, activities within the streams and associated wetland areas may impede flow, resulting in short-term hydrological modifications to downstream wetland features and potentially causing prolonged inundation of upstream wetland areas.**
- **Although construction is planned for the drier summer months, the risk of flow disruption remains. Warm and dry conditions may exacerbate impacts by reducing the availability of low/baseflows, thereby affecting ecosystems downstream that rely on these flows for ecological functioning.**

Operational Phase

- **The initial design for the proposed stream crossings (now the alternative option), particularly at the confluence of Streams A and B and at the lower crossing over Stream C, did not accommodate subsurface flow. This would have impeded groundwater movement and likely caused fragmentation and possible desiccation of downstream wetland areas associated with these reaches. In response, the preferred option now incorporates subsurface drainage via a no-fines sub-soil drain and an embedded pipe**

network to maintain hydrological connectivity and lower any flow modification impacts associated with these structures.

Mitigation measures:

In order to reduce the possible impact of any flow modifications occurring, the following mitigation is proposed:

Construction Phase:

- **All new culverts must be designed to accommodate anticipated peak flow volumes to prevent flow impedance and minimize the risk of erosion following high-rainfall events.**
- **Culverts should be installed at or slightly below the natural streambed level to avoid obstructing low flows and to facilitate the unimpeded movement of aquatic biota.**
- **As mentioned under "Loss of Biodiversity", should flow be present during construction, temporary diversion structures should be implemented to reroute stream and wetland flow around the active work area, ensuring that low flows remain uninterrupted throughout the construction period.**
- **As the client proposes to include subsoil drainage in the low-water bridge structures, the following mitigation should be taken into account:**
    - **Drainage should consist of several pipes or a continuous stone layer.**
    - **The subsoil drain's cross-sectional area should roughly match or exceed the flow cross-section of the natural subsurface seepage path, both up and downstream of the bridge. This should be at a minimum 0.3–0.5 m depth and width.**
    - **The subsoil drain must be wrapped in geotextile or similar to keep fine wetland sediments out.**
    - **Stone size must be uniform and coarse to maintain voids for long-term flow.**

Operational Phase

- **Regular maintenance should be conducted to remove debris accumulation and control nuisance vegetation growth, as outlined under the "Loss of Biodiversity" section, to prevent blockages and ensure continued flow through culverts.**

Impact with mitigation measures:

Should all mitigation measures be taken into account, the general impact of the above activities would be:

- **Construction Phase: Short-term, Low Negative nature**
- **Operational Phase: Long Term, Low to Negligible Negative nature.**

With the implementation of appropriate mitigation measures, the proposed activities with their expected operational phase are expected to result in a general short-term low negative impact on the site's freshwater features.

Please refer to Appendix G2 for the Freshwater Impact Assessment.

GEOHYDROLOGY:

The site is located on a fractured aquifer, which has a "low to medium" vulnerability classification indicating that the aquifer has low susceptibility to contamination from anthropogenic activities.

The impact assessment included in this section address the potential negative impacts of the proposed groundwater abstraction, focusing on the following identified risks:

- The risk of depletion of the groundwater due to over-abstraction;
- The risk of groundwater quality deterioration as a result of over-abstraction;
- The risk of groundwater abstraction impacting surface water; and
- The risk of groundwater contamination due to a leaking septic tank, which may detrimentally impact a water resource

The risk assessment includes the identification and rating of the potential risks associated with the proposed groundwater abstraction for Kleinfontein, along with possible mitigation measures. Each risk is qualitatively assessed based on the existing information.

Depletion of the Groundwater Resource as a Result of Over-Abstraction

Over-abstraction of groundwater from boreholes is likely to lead to depletion of the water levels in the area over time. This can cause damage to the aquifer and groundwater-dependent ecosystems and impact neighbouring groundwater users. Since there is a lot of groundwater use in the area, it is essential that the boreholes are well managed and not over-abstract to ensure impact on the neighbouring properties does not occur. The boreholes have been tested according to SANS 10299 4-2003, and the total managed yield has been determined to be 154 526 m^3/a. The application volume (49 458 m^3/a) is 32% of the recommended abstraction volume. The yields calculated are conservative and if abstraction is kept to the recommended rate, over abstraction is unlikely to occur.

Groundwater level monitoring is recommended to ensure that groundwater abstraction is sustainable. The monitoring will also indicate if the groundwater resource is impacted and if mitigation measures can be instituted before long-term impacts occur. Mitigation for over-abstraction would be a reduction in abstraction.

Quality Deterioration as a Result of Over-Abstraction

Over-abstraction of groundwater can have negative impacts on water quality. One major concern is the potential of iron clogging occurring due to over-abstraction. It is recommended to maintain a constant and continuous pumping schedule as much as possible. Thus, should a daily volume of less than 319 680 L/d for KF BH1 and 103 680 L/d for KF BH2 be abstracted from the aquifer. Additionally, the lowering of the water table can expose previously saturated minerals to air, leading to the oxidation of sulphide minerals and other geochemical changes. This oxidation process can produce acidic conditions and release harmful substances, such as metals, into the groundwater. When the water table eventually recovers, these oxidized minerals can dissolve back into the groundwater, further degrading water quality and posing risks to ecosystems and water users.

Indicated by the regional datasets, the groundwater EC is in the range of 0 - 70 m S/m and is of good quality, while west of the site poorer quality is observed according to DWA 1998 domestic standards.

Groundwater quality monitoring is recommended to ensure that groundwater abstraction is sustainable. The monitoring will also indicate if the groundwater resource is impacted and mitigation measures can be instituted before long term impacts occur. Mitigation for over-abstraction would be a reduction in abstraction.

Groundwater abstraction impacting surface water

The risk of groundwater abstraction impacting the non-perennial streams near the boreholes is considered low based on the available data, although some uncertainty remains. KF BH01 is located in the Rietvlei Formation (a water-bearing fractured aquifer) overlain by the Gydo Formation (an aquitard). For KF BH02, the geology is not fully known; however, the borehole is cased to 5 m depth. Resting water levels for KF BH02 were recorded at 5.31 mbgl in February 2025 and 19.54 mbgl during the hydrocensus on 19 August 2025. This discrepancy may be attributed to seasonal variations, short-term drawdown, or measurement differences and highlights the uncertainty in interpreting groundwater-surface water connectivity. Despite this, given the depth of the aquifer relative to the surface water and the other hydrogeological data available, the perceived risk of abstraction impacting the streams remains low. The dynamic water levels for KF BH01 and KF BH02 are 34 mbgl and 77 mbgl, respectively, significantly deeper than the surface water, indicating that the groundwater and surface water systems are most likely not hydraulically connected.

The aquifer vulnerability classification is very low to low/medium. This is consistent with a fractured aquifer overlain by an aquitard, which restricts groundwater movement. The deeper water-bearing fractures further reduce the risk of depleting or influencing surface water. Proper management of the boreholes is essential to avoid over-abstraction. The boreholes have been tested according to SANS 10299 4-2003, with a total managed yield of 154 526 m^3/a. The proposed application volume of 49 458 m^3/a represents 32% of the recommended yield, indicating that over-abstraction is unlikely if the recommended limits are adhered to.

Groundwater monitoring is recommended to ensure sustainable abstraction and to detect any potential impacts on surface water early. Mitigation measures can then be implemented to prevent long-term impacts. In the event of over-abstraction, a reduction in pumping is the primary mitigation measure.

The risk of groundwater contamination due to a leaking septic tank, which may detrimentally impact a water resource

The risk associated is leakage of wastewater from the septic tanks that may contaminate the groundwater quality. It is advised that the boreholes be tested for the parameters outlined in Table 2 which refers to the General Notice 169 of 2013, Table 2.2: Monitoring requirements for domestic wastewater discharge. These parameters are also listed in Section 12, where the boreholes should be tested quarterly for these parameters. If this is not adhered to and the conservancy tank begins to leak, it will harm the surrounding groundwater users.

Table 2: General Notice 169 of 2013, Table 2.2: Monitoring requirements for domestic wastewater discharges

Discharge volume on any given day	Minimum Monitoring Requirements
10-100 cubic meters	Faecal Coliforms (per 100 ml)
	pH
	Electrical Conductivity (mS/m)

The aquifer vulnerability is 'low to medium' as determined by the DRASTIC methodology, the risks associated with leakage of wastewater from the septic tank are determined as medium risk since the upper formation of the aquifer consists of the Gydo Formation, which acts as an aquitard. Even with a low vulnerability, there is always a chance that leakage can occur. Therefore, management and preventative measures are crucial to safeguard the aquifer from contamination and mitigate its potentially severe consequences.

By implementing these measures, the risk of groundwater contamination can be significantly reduced (LOW), protecting both water quality and the surrounding ecosystems.

The groundwater from KF_BH1 and KF_BH2 is not suitable for consumption without prior treatment. The pH (4.2-5.6) is considered acidic, the electrical conductivity (34-40.8 mS/m) of KF_BH1 and KF_BH02 is good, while trace metals are elevated into the category of "marginal to dangerous" (DWAF, 1998). With elevated levels of turbidity and concentrations of iron, manganese, and aluminium, the water falls into the category of marginal according to the DWAF (1998) domestic standards. The turbidity has some aesthetic effects, such as murky water according to the SANS 241:2015 standards while the trace metals can cause chronic health issues.

The production boreholes have been correctly yield tested (according to SANS 10299_4-2003) and the results were used to determine the managed (i.e. long-term and safe) yield of the borehole. The total conservative volume, which can be abstracted from the boreholes are 154 526 m^3/a. The application volume (49 958 m^3/a) is 32% of the sustainable abstraction volume.

It is recommended that the general Groundwater Management guidelines (Section 11 of the Geohydrological Impact Assessment) be included in the licence conditions of the WULA/ EA.

Please refer to Appendix G3 for the Geohydrological Impact Assessment.

2.	List the impact management measures that were identified by all Specialist that will be included in the EMPr

All the management methods outlined by specialists as well as all impact management measures outlined in the Impact and Risk Assessment (Appendix J) will be included in the EMPr for the development. These have been summaries below:

FRESHWATER:

1. POTENTIAL IMPACT – LOSS OF BIODIVERSITY AND ECOLOGICAL STRUCTURE:

Mitigation measures:

Construction Phase:

- **All road crossing structures must be designed to avoid obstruction of streamflow, including low flows.**
- **Construction activities directly involving freshwater features (i.e., road and pipeline crossings) should preferably be scheduled during the dry summer months—typically from December to March—when rainfall and runoff are at their lowest.**
- **If any flow is present within the streams during construction, appropriate measures must be taken to divert the water around the work area and ensure its release downstream.**
- **A buffer zone extending 6 meters upstream and downstream of the construction footprint should be clearly demarcated. No disturbance or activity should occur beyond these designated areas within the stream channel.**
- **The boundaries of this buffer zone must be physically demarcated using high-visibility fencing or flagging prior to the commencement of any construction activities.**
- **Work within the stream channels should be limited strictly to essential areas.**
- **Clearing of riparian or wetland vegetation must be avoided where possible or otherwise kept to a minimum. Where practicable, vegetation should be pruned or topped rather than grubbed or uprooted.**
- **All wetland/stream areas disturbed during construction must be rehabilitated and revegetated with appropriate indigenous wetland and riparian buffer species once construction is complete.**

Operational Phase:

- **All rehabilitated and revegetated areas within the wetland/stream areas should be monitored for the following 2 years, ensuring the establishment of good plant biodiversity.**
- **Monitoring of all stream crossings for signs of erosion, debris build-up or nuisance growth around the culverts, should be included and addressed in a formal Maintenance and Management Plan for the project.**
- **No use of machinery is allowed within any wetland/stream channels for the operational phase.**
- **All debris must be removed and properly disposed of.**
- **No dumping of debris should be allowed in the stream/wetland areas.**
- **Any wetland/ riparian or instream areas disturbed by Maintenance activities to be rehabilitated and revegetated (if necessary) after maintenance works**

2. POTENTIAL IMPACT - WATER QUALITY IMPAIRMENT:

Mitigation measures:

Construction Phase:

- **As mentioned above, construction activities should preferably take place during the drier months, and special attention should be given to managing water quality impacts in the construction Environmental Management Programme (EMP).**
- **Temporary silt fencing, sandbags, or berms should be installed within downstream channels to prevent sediment generated during construction from entering downstream freshwater features.**
- **Implement a phased clearing approach, limiting vegetation clearance to areas required for active construction only.**
- **Designate stockpile locations at least 50 metres away from any watercourses or wetland areas.**
- **Prevent contaminated runoff from construction sites from entering adjacent streams or wetlands by using diversion drains and berms. Temporary detention basins or sediment traps should be constructed to capture excess sediment before it reaches wetland or stream areas.**
- **Good Site Management Practices include:**

- Portable chemical toilets must be provided at all work sites, or ensure that conveniently located site toilets are available. Toilet facilities must not be located within 100 metres of any stream or wetland areas.
- Maintain and clean toilets regularly to ensure they remain in good working order and hygienic condition.
- No waste or foreign materials may be dumped into streams or wetlands. These areas must also not be used for cleaning clothing, tools, or equipment.
- Prevent the discharge of water containing polluting matter or visible suspended solids directly into streams or wetland areas.
- Immediately clean any accidental oil or fuel spills or leaks. Do not hose or wash spills into the surrounding natural environment.
- All operations involving the use of cement and concrete (outside of the batching plant) must be carefully controlled.
- Limit cement and concrete mixing to designated sites wherever possible.

Operational Phase

- **The existing plans would sufficiently address the possible water quality impacts posed by the broiler site.**

3. POTENTIAL IMPACT – FLOW MODIFICATION AND CHANGE IN SEDIMENT BALANCE:

Mitigation measures:

Construction Phase:

- **All new culverts must be designed to accommodate anticipated peak flow volumes to prevent flow impedance and minimize the risk of erosion following high-rainfall events.**
- **Culverts should be installed at or slightly below the natural streambed level to avoid obstructing low flows and to facilitate the unimpeded movement of aquatic biota.**
- **As mentioned under "Loss of Biodiversity", should flow be present during construction, temporary diversion structures should be implemented to reroute stream and wetland flow around the active work area, ensuring that low flows remain uninterrupted throughout the construction period.**
- **As the client proposes to include subsoil drainage in the low-water bridge structures, the following mitigation should be taken into account:**
  - **Drainage should consist of several pipes or a continuous stone layer.**
  - **The subsoil drain's cross-sectional area should roughly match or exceed the flow cross-section of the natural subsurface seepage path, both up and downstream of the bridge. This should be at a minimum 0.3–0.5 m depth and width.**
  - **The subsoil drain must be wrapped in geotextile or similar to keep fine wetland sediments out.**
  - **Stone size must be uniform and coarse to maintain voids for long-term flow.**

Operational Phase

- **Regular maintenance should be conducted to remove debris accumulation and control nuisance vegetation growth, as outlined under the "Loss of Biodiversity" section, to prevent blockages and ensure continued flow through culverts.**

GEOHYDROLOGY:

Depletion of the Groundwater Resource as a Result of Over-Abstraction

Groundwater level monitoring is recommended to ensure that groundwater abstraction is sustainable. The monitoring will also indicate if the groundwater resource is impacted and if mitigation measures can be instituted before long-term impacts occur. Mitigation for over-abstraction would be a reduction in abstraction.

Quality Deterioration as a Result of Over-Abstraction

Groundwater quality monitoring is recommended to ensure that groundwater abstraction is sustainable. The monitoring will also indicate if the groundwater resource is impacted and mitigation measures can be instituted before long term impacts occur. Mitigation for over-abstraction would be a reduction in abstraction.

Groundwater abstraction impacting surface water

Groundwater monitoring is recommended to ensure sustainable abstraction and to detect any potential impacts on surface water early. Mitigation measures can then be implemented to prevent long-term impacts. In the event of over-abstraction, a reduction in pumping is the primary mitigation measure.

The risk of groundwater contamination due to a leaking septic tank, which may detrimentally impact a water resource

It is advised that the boreholes be tested for the parameters outlined in Table 2 above which refers to the General Notice 169 of 2013, Table 2.2: Monitoring requirements for domestic wastewater discharge. By implementing these measures, the risk of groundwater contamination can be significantly reduced (LOW), protecting both water quality and the surrounding ecosystems.

It is recommended that general Groundwater Management guidelines be included in the licence conditions of the WULA / EA:

The management of the groundwater abstraction includes the following recommendations:

1. It is recommended to maintain a constant and continuous pumping schedule as much as possible. Thus, should a daily volume of less than 319 680 L/d for KF BH1 and 103 680 L/d for KF BH2 be required. it is recommended to decrease the pumping rate and not the pumping duration. By pumping continuously instead of a stop-start schedule, iron oxidation in the borehole is minimised, decreasing the amount of iron precipitation inside the boreholes and pumps.
2. An "observation pipe" needs to be installed (32 mm inner diameter, class 10 - Figure 15) from the pump depth to the surface, closed at the bottom and slotted for the bottom 5 – 10 m, for the production borehole. This allows for a 'window' of access down the borehole which enables manual water level monitoring and can house an electronic water level logger.
3. Continuous monitoring of groundwater levels using pressure transducers in the borehole is ideal. The water level in the borehole may not drop below the critical water level (Table 3). If the water level in the borehole drops below the critical water level, abstraction must be immediately reduced by 10 %. Monitoring must continue and after 30 days, if the water level in the borehole does not recover to above the critical water level, abstraction must be reduced by a further 10%. This process must continue until the water level in the borehole is stable.
4. Water quality monitoring which includes sampling and analysis of the groundwater at an accredited laboratory, is important. A sampling interval of quarterly is recommended for the first year of monitoring; thereafter, the water quality monitoring should be reviewed and can potentially be reduced to annual as proposed in Table 4.
5. The monitoring data should be reviewed on quarterly basis for the first two years and can then be scaled down to bi-annually.
6. Installation of a sampling tap at the production borehole (to monitor water quality) is essential.
7. Installation of a flow volume meter at the production borehole (to monitor abstraction rates and volumes) is also important. External flow (e.g. mag-flow) meters are recommended.
8. Abstraction volumes must be monitored and recorded by a designated person on site. Depending on the frequency of use, daily, weekly or monthly abstraction should be recorded.
9. The appropriate borehole pump must be installed. i.e. not an over-sized pump that is choked with a gate valve. If the monitoring shows that more water can be abstracted, then the duration of pumping time can be increased (not the flow rate).
10. If required, the pump and borehole casing (and associated infrastructure) can be serviced annually and cleaned.

11. A geohydrologist should review the above information at least annually to ensure optimal groundwater abstraction and management occurs.
12. The relevant DWS monitoring officer (as specified in the Water Use Licence) should be informed if water levels are dropping to critical level or if any parameters, as specified in Table 4. Changes by 20%.

The groundwater abstraction should be reviewed to ensure that it is sustainable based on the monitoring data obtained.

Table 3: Borehole Abstraction Recommendations.

Borehole Details				
Borehole Name	Latitude (DD)	Longitude (DD)	Borehole Depth (m)	Inner Diameter (mm)
KF_BH1	-33.922230	19.385410	96.	150
KF_BH2	-33.922080°	19.388520°	163.00	210
Abstraction Recommendations				
Borehole Name	Abstraction rate (L/s)	Abstraction Duration (hrs)	Recovery Duration (hrs)	Possible Volume Abstracted (L/d)
KF_BH1	3.7	24	0	319 680
KF_BH2	1.2	24	0	103 680
			Total	**423 360**
Pump Installation Details				

Borehole Name	Pump Installation Depth (mbgl)	Critical Water Level (mbgl)	Dynamic Water Level (mbgl)*	Rest Water Level (mbgl)
KF_BH1	55.00	47.33	34.00	22.97
KF_BH2	115.00	110.80	77.00	5.31

* Typical water level expected during long-term production

Table 4: Proposed groundwater monitoring parameters.

Parameter	Frequency
Groundwater Level	Ideally every 15 minutes with a data logger
Chemical parameters	
pH (at 25 °C)	Quarterly (Field Chemistry)
Conductivity (mS/m) (at 25 °C)	Quarterly (Field Chemistry)
Total Dissolved Solids (mg/L)	Quarterly (Field Chemistry)
Turbidity (NTU)	Quarterly*
Colour (mg/L as Pt)	Quarterly*
Sodium (mg/L as Na)	Quarterly*
Potassium (mg/L as K)	Quarterly*
Magnesium (mg/L as Mg)	Quarterly*
Calcium (mg/L as Ca)	Quarterly*
Chloride (mg/L as Cl)	Quarterly*
Sulphate (mg/L as SO_4)	Quarterly*
Nitrate & Nitrite Nitrogen (as a ratio)	Quarterly*
Nitrate Nitrogen (mg/L as N)	Quarterly*
Nitrite Nitrogen (mg/L as N)	Quarterly*
Ammonia Nitrogen (mg/L as N)	Quarterly*
Total Alkalinity (mg/L as $CaCO_3$)	Quarterly*

Total Hardness (mg/L as $CaCO_3$)	Quarterly*
Fluoride (mg/L as F)	Quarterly*
Aluminium (mg/L as Al)	Quarterly*
Total Chromium (mg/L as Cr)	Quarterly*
Manganese (mg/L as Mn)	Quarterly*
Iron (mg/L as Fe)	Quarterly*
Nickel (mg/L as Ni)	Quarterly*
Copper (mg/L as Cu)	Quarterly*
Zinc (mg/L as Zn)	Quarterly*
Arsenic (mg/L as As)	Quarterly*
Selenium (mg/L as Se)	Quarterly*
Cadmium (mg/L as Cd)	Quarterly*
Antimony (mg/L as Sb)	Quarterly*
Mercury (mg/L as Hg)	Quarterly*
Lead (mg/L as Pb)	Quarterly*
Uranium (mg/L as U)	Quarterly*
Cyanide (mg/L as CN-)	Quarterly*
Total Organic Carbon (mg/L as C)	Quarterly*
E.coli (count per 100 ml)	Quarterly*
Total Coliform Bacteria (count per 100 ml)	Quarterly*
Heterotrophic Plate Count (count per ml)	Quarterly*
Total Petroleum Hydrocarbons (TPH)	Quarterly*
*Quarterly for first year, can be reduced to annual if reviewed and deemed appropriate	

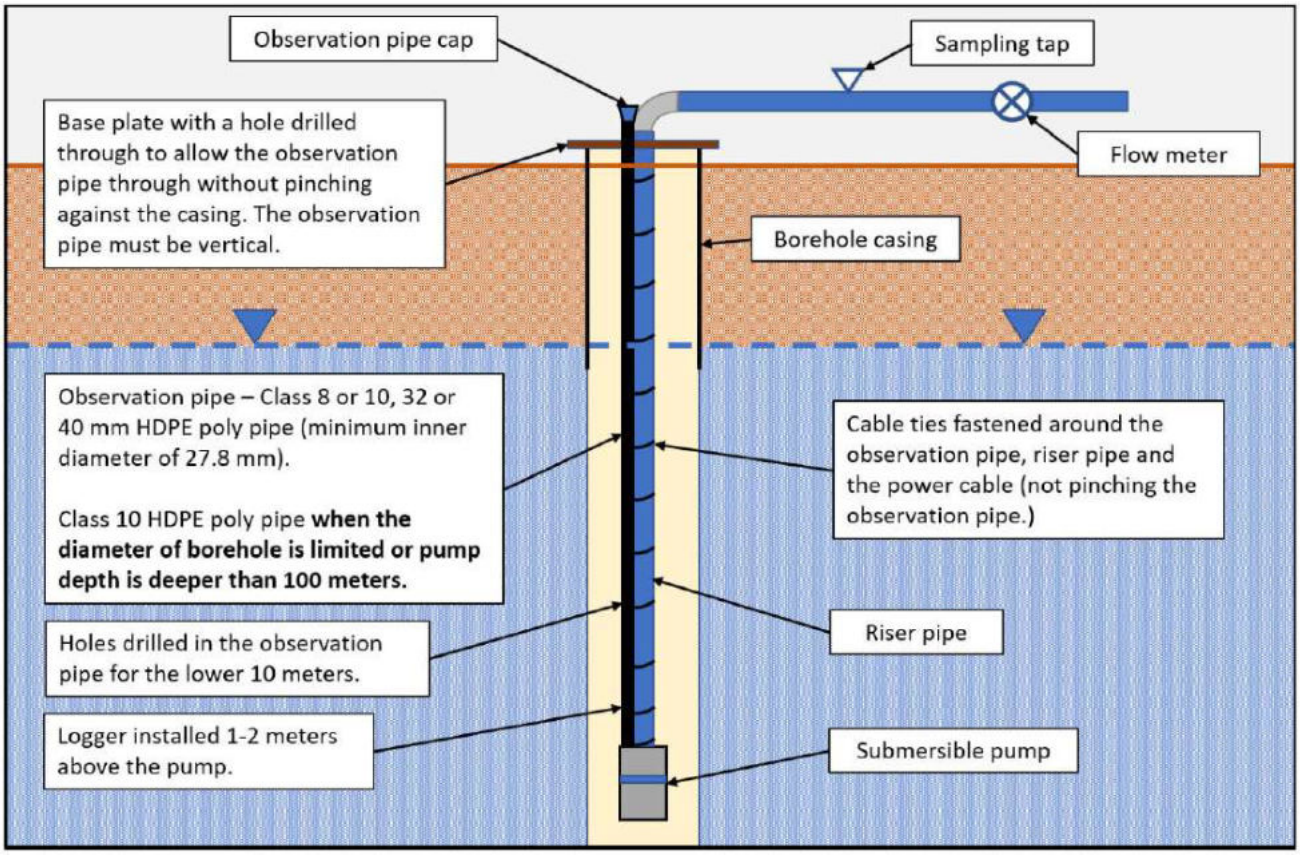

Figure 15A: Monitoring Infrastructure.

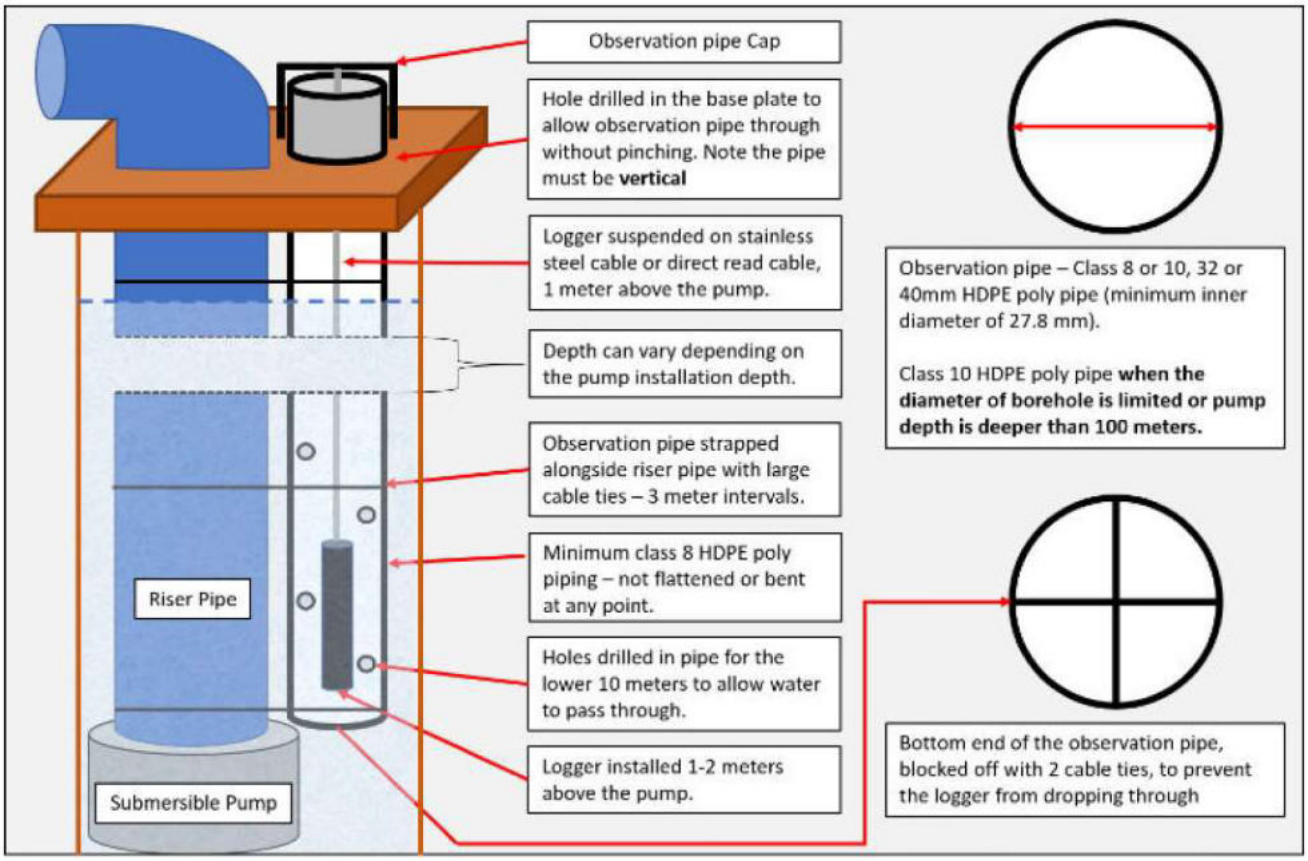

Figure 15B: Monitoring Infrastructure.

3.	List the specialist investigations and the impact management measures that will **not** be implemented and provide an explanation as to why these measures will not be implemented.

All identified impact management measures will be implemented. No further specialist studies are required in terms of NEMA, please refer to Appendix I2 for further details.

4.	Explain how the proposed development will impact the surrounding communities.

The proposed development will create jobs amongst low-income families during the construction and operational phases. The development does not result in a loss of amenity or air quality degradation. Potential water quality impacts are manageable and unlikely to extend beyond the immediate site. Any nuisance factors such as dust and noise will be localized with no anticipated health impacts. Visually, the development will integrate into the landscape, being minimally intrusive. Although visible from certain viewsheds, the broiler facility is centrally located within the property and therefore, limiting the visual impact to neighbouring farms and surrounding road network. The project does not alter the area's character or landscape. All identified impacts can be mitigated to acceptable significance rating, thus the negative impacts on surrounding communities during construction and operation is deemed very low.

The proposed development will somewhat increase the current number of vehicles entering and exiting the farm. However, this is only estimated to create an additional 2.4 trips per day (approximately 2 additional vehicles will enter and exit the site every day). Given the surrounding land use and the fact that access to the development areas is direct and existing, the potential traffic impact is anticipated to be LOW.

A number of positive socio-economic benefits for the region in terms of job creation, economic growth and food security will also result from the proposed broiler facility. A number of job opportunities will be provided during the construction phase (approximately 100 jobs) and an additional 40 job opportunities (approx.) will result directly from the operational phase of the development. Furthermore, additional job opportunities will result in the Elgin Free Range Hatcheries and the associated supply chain for the greater Elgin Chicken Operations.

It is estimated that the farm turnover will amount to an estimated R55 million per annum with the farm producing 4,359,168 kg of poultry meat per annum once in operation. Furthermore, the farm will require the use of 6 357 tons of feed and a number of associated products that will benefit from the supply chain. The proposed development will have knock-on effect for trade in local economy of the surrounding area, facilitate the provision of more sustainable protein to local markets, have direct and indirect employment opportunities (temporary and permanent) and allow for skills transfers to new employees.

5.	Explain how the risk of climate change may influence the proposed activity or development and how has the potential impacts of climate change been considered and addressed.

According to the Western Cape Department of Environmental Affairs and Development Planning, the province will experience an increase in annual temperatures, increased maximum temperature, more heat waves, fewer frost days, reduced rainfall, sea-level rise, increased fire risks, and increased frequency and intensity of severe weather events. The primary factors that may influence the proposed development is temperature increase and water scarcity. Rising temperatures may increase the risk of heat stress in poultry. The proposed development layout and orientation has been designed to advantage of prevailing wind directions for optimal ventilation which will help reduce the effects of increased temperatures. Furthermore, the following measures are in place on site to minimise usage of water on site: Chicken pens are dry-swept; When the pens are washed down it is done with a high-pressure hose and minimal water usage; The bio-security wash down area and its associated showers use water saving devices to minimise the use of water on site. Furthermore, the proposed development will utilise ground water and not make use of potable water. In addition, rainwater will be harvested from the Chicken Houses. Solar Energy will be supplementing the existing Eskom availability on site which is more sustainable.

6.	Explain whether there are any conflicting recommendations between the specialists. If so, explain how these have been addressed and resolved.

There are no conflicting recommendations between Specialists.

7.	Explain how the findings and recommendations of the different specialist studies have been integrated to inform the most appropriate mitigation measures that should be implemented to manage the potential impacts of the proposed activity or development.

There are no conflicting recommendations between Specialists. All the mitigation measures proposed by the Freshwater and Geohydrology Specialists have been included and will be implemented to manage the potential impacts of the proposed activity.

8.	Explain how the mitigation hierarchy has been applied to arrive at the best practicable environmental option.

The NEMA EIA regulations require that a hierarchical approach is taken with regards to impact management. Implementation of the mitigation hierarchy requires that potential impact management measures are implemented in order from the most beneficial method of impact mitigation to the least beneficial method of impact mitigation. A visual illustration of the mitigation hierarchy is provided in Figure 14.

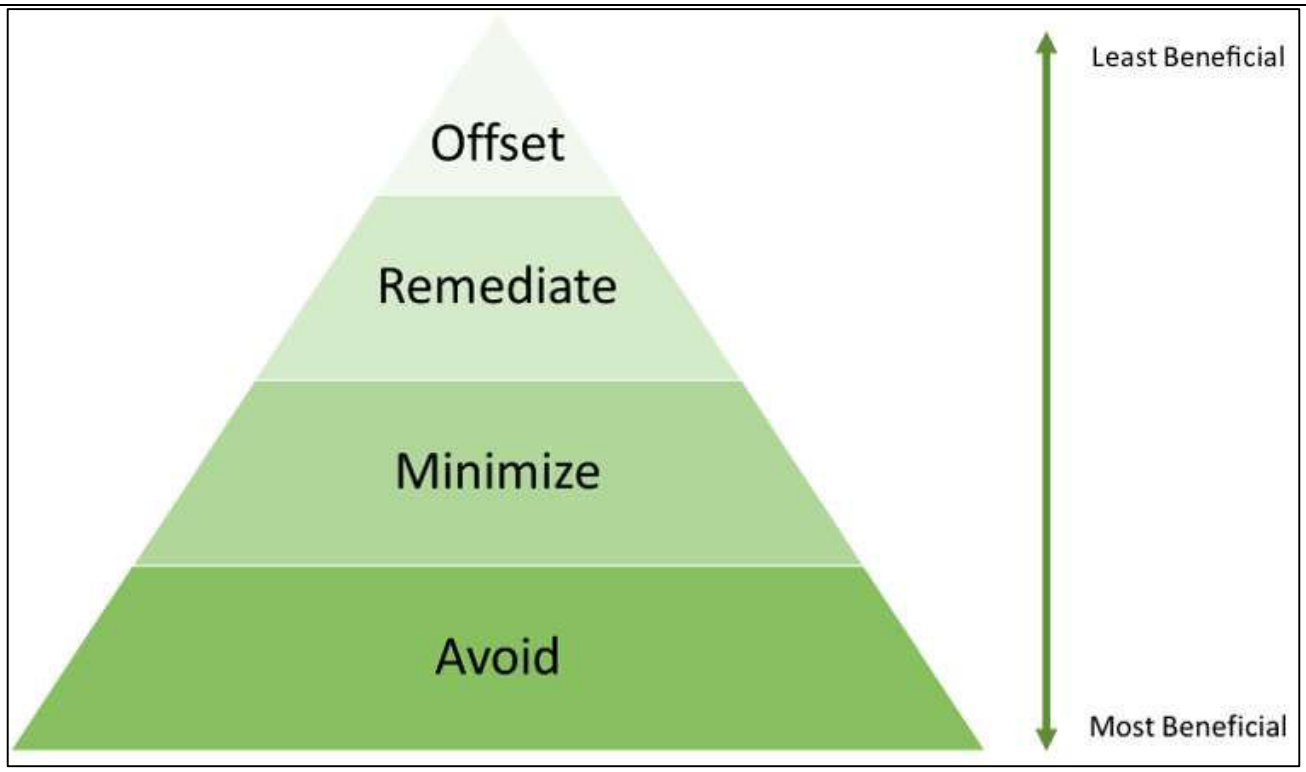

***Figure 14**: The mitigation hierarchy.*

This hierarchy was applied to identify the best practicable and environmentally sensitive layout option for the proposed development:

Avoidance: This is the first step of the mitigation hierarchy which comprises measures taken to avoid impacts from the outset, such as careful spatial or temporal placement of infrastructure or disturbance. The preferred development layout takes no-go and sensitive areas into consideration and has utilised the existing water crossing rather than disturb an area within its natural state.

Minimisation: This entails measures taken to reduce the duration, intensity and/or extent of impacts that cannot be completely avoided. All mitigation measures have been included in management documents (EMPr) for approval and implementation during the various phases of the development management.

Rehabilitation: This entails measures taken to improve degraded or removed ecosystems following exposure to impacts that cannot be completely avoided or minimised. No rehabilitation will be required for the proposed development.

Offset: this entails measures taken to compensate for any residual, adverse impacts after full implementation of the previous three steps of the mitigation hierarchy. No offset is required.

SECTION J: GENERAL

1. Environmental Impact Statement

1.1.	Provide a summary of the key findings of the EIA.

The key findings of the EIA indicate that the proposed development will have both positive and negative impacts, however, all negative impacts can be significantly mitigated through implementation of reasonable and practical mitigation measures. The ratings of all negative impacts can be mitigated to LOW – VERY LOW.

Positive Impacts:

- **Productive use of currently unproductive agricultural land.**
- **Knock-on effect for trade in local economy.**
- **Provision of more sustainable protein to local markets.**
- **Direct and indirect employment opportunities (temporary and permanent) and skills transfer to new employees.**
- **Significant financial contribution to the local economy.**

Negative Impacts:

- **Transformation of agricultural land with built-up units.**
- **Waste generation from the construction and operational phase.**
- **Potential hazardous waste generation during the operational phase – infectious mortalities.**
- **Potential nuisance factors (dust, noise and odor).**
- **Possible increase in visual intrusion within the agricultural landscape.**
- **Loss of biodiversity, aquatic habitat and ecological structure.**
- **Potential hydrology modification and change in sediment balance.**
- **Potential Water Quality impacts.**
- **Increased use of access roads and therefore generation of traffic.**
- **Potential surface water pollution from contaminated runoff (e.g. unit wash water).**
- **Depletion of the Groundwater Resource as a Result of Over-Abstraction**
- **Quality Deterioration as a Result of Over-Abstraction**
- **The risk of groundwater abstraction impacting surface water**
- **The risk of groundwater contamination due to a leaking septic tank, which may detrimentally impact a water resource**

As per the findings of the risk and impact assessment it has been determined that the proposed development is environmentally and socially acceptable provided that the identified mitigation measures are strictly implemented.

1.2.	Provide a map that superimposes the preferred activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. (Attach map to this BAR as Appendix B2)

Please refer to Appendix B2.

1.3.	Provide a summary of the positive and negative impacts and risks that the proposed activity or development and alternatives will have on the environment and community.

Impacts	Significance prior to mitigation	Significance post mitigation
IMPACTS DURING PLANNING, DESIGN & CONSTRUCTION PHASES		
Higher intensity agriculture - increased hardened surfaces within the agricultural landscape.	**MEDIUM (-)**	**LOW (-)**
Loss of biodiversity, aquatic habitat and ecological structure (Water quality impairment and possible erosion, as well as flow modification within the marked streams and associated wet areas.)	**Medium - LOW (-)**	**LOW (-) – low (+)**

Temporary Employment opportunities during the construction phase. Financial stimulation of the local economy.	MEDIUM (+)	MEDIUM (+)
Waste generation from construction activities – general construction waste.	LOW (-)	LOW (-)
Dust generation from construction activities	LOW (-)	VERY LOW (-)
Noise generated from construction activities	LOW (-)	VERY LOW (-)
Increase in visual intrusion within the agricultural landscape	LOW / MEDIUM (-)	LOW (-)
IMPACTS DURING OPERATIONAL PHASE		
Intensified use of access roads and traffic generation	LOW (-)	LOW (-)
Potential surface water pollution from contaminated runoff (e.g. unit wash water)	MEDIUM (-)	LOW (-)
Limited flow modification and loss of biodiversity resulting from ongoing future maintenance activities. A small possibility of a reduction in water quality through the operation of the broiler, which could cause eutrophication and limited loss in biodiversity in the surrounding streams C and D (where only the most sensitive species will be affected).	Low to medium – Low (-)	LOW (-)
Waste generation from operational phase	LOW – MEDIUM (-)	LOW (-)
Hazardous waste – infections mortalities	MEDIUM (-)	LOW (-)
Direct and indirect employment opportunities (temporary and permanent) and skills transfer to new employees. Significant financial contribution to the local economy and a knock-on effect for trade in local economy.	MEDIUM - HIGH (+)	MEDIUM - HIGH (+)
Noise, Odour & Dust generation from operational phase	LOW (-)	LOW (-)
Increase in visual intrusion within the agricultural landscape	LOW - MEDIUM (-)	LOW (-)
The risk of depletion of the groundwater due to over-abstraction	MEDIUM (-)	LOW (-)
The risk of groundwater quality deterioration as a result of over-abstraction	MEDIUM (-)	LOW (-)
The risk of groundwater abstraction impacting surface water	LOW (1)	VERY LOW (-)
The risk of groundwater contamination due to a leaking septic tank, which may detrimentally impact a water resource	MEDIUM (-)	LOW (-)
IMPACTS ASSOCIATED WITH THE NO-GO ALTERNATIVE		
Loss of socio- economic opportunities: No new jobs will be created onsite. Reduced support for local suppliers.	MEDIUM (-)	MEDIUM (-)
Limits increase in sustainable protein supply	LOW (-)	LOW (-)
Underutilization of agricultural land	LOW (-)	LOW (-)

3. Recommendation of the Environmental Assessment Practitioner ("EAP")

2.1.	Provide Impact management outcomes (based on the assessment and where applicable, specialist assessments) for the proposed activity or development for inclusion in the EMPr

All the impact management outcomes recommended by the Freshwater and Geohydrology Specialists, as listed in question 2.2 below, will be included in the EMPr (Appendix H).

2.2.	Provide a description of any aspects that were conditional to the findings of the assessment either by the EAP or specialist that must be included as conditions of the authorisation.

FRESHWATER:

Construction Phase:

- **All road crossing structures must be designed to avoid obstruction of streamflow, including low flows.**
- **Construction activities directly involving freshwater features (i.e., road and pipeline crossings) should preferably be scheduled during the dry summer months—typically from December to March—when rainfall and runoff are at their lowest.**
- **If any flow is present within the streams during construction, appropriate measures must be taken to divert the water around the work area and ensure its release downstream (ensuring that low flows remain uninterrupted throughout the construction period).**
- **A buffer zone extending 6 meters upstream and downstream of the construction footprint should be clearly demarcated. No disturbance or activity should occur beyond these designated areas within the stream channel.**
- **The boundaries of this buffer zone must be physically demarcated using high-visibility fencing or flagging prior to the commencement of any construction activities.**
- **Work within the stream channels should be limited strictly to essential areas.**
- **Clearing of riparian or wetland vegetation must be avoided where possible or otherwise kept to a minimum. Where practicable, vegetation should be pruned or topped rather than grubbed or uprooted.**
- **All wetland/stream areas disturbed during construction must be rehabilitated and revegetated with appropriate indigenous wetland and riparian buffer species once construction is complete.**
- **Special attention should be given to managing water quality impacts in the construction Environmental Management Programme (EMP).**
- **Temporary silt fencing, sandbags, or berms should be installed within downstream channels to prevent sediment generated during construction from entering downstream freshwater features.**
- **Implement a phased clearing approach, limiting vegetation clearance to areas required for active construction only.**
- **Designate stockpile locations at least 50 metres away from any watercourses or wetland areas.**
- **Prevent contaminated runoff from construction sites from entering adjacent streams or wetlands by using diversion drains and berms. Temporary detention basins or sediment traps should be constructed to capture excess sediment before it reaches wetland or stream areas.**
- **Good Site Management Practices include:**
  - **Portable chemical toilets must be provided at all work sites, or ensure that conveniently located site toilets are available. Toilet facilities must not be located within 100 metres of any stream or wetland areas.**
  - **Maintain and clean toilets regularly to ensure they remain in good working order and hygienic condition.**
  - **No waste or foreign materials may be dumped into streams or wetlands. These areas must also not be used for cleaning clothing, tools, or equipment.**
  - **Prevent the discharge of water containing polluting matter or visible suspended solids directly into streams or wetland areas.**
  - **Immediately clean any accidental oil or fuel spills or leaks. Do not hose or wash spills into the surrounding natural environment.**
  - **All operations involving the use of cement and concrete (outside of the batching plant) must be carefully controlled.**
  - **Limit cement and concrete mixing to designated sites wherever possible.**

- **All new culverts must be designed to accommodate anticipated peak flow volumes to prevent flow impedance and minimize the risk of erosion following high-rainfall events.**
- **Culverts should be installed at or slightly below the natural streambed level to avoid obstructing low flows and to facilitate the unimpeded movement of aquatic biota.**
- **As the client proposes to include subsoil drainage in the low-water bridge structures, the following mitigation should be taken into account:**
    - **Drainage should consist of several pipes or a continuous stone layer.**
    - **The subsoil drain's cross-sectional area should roughly match or exceed the flow cross-section of the natural subsurface seepage path, both up and downstream of the bridge. This should be at a minimum 0.3–0.5 m depth and width.**
    - **The subsoil drain must be wrapped in geotextile or similar to keep fine wetland sediments out.**
    - **Stone size must be uniform and coarse to maintain voids for long-term flow.**

Operational Phase:

- **All rehabilitated and revegetated areas within the wetland/stream areas should be monitored for the following 2 years, ensuring the establishment of good plant biodiversity.**
- **Monitoring of all stream crossings for signs of erosion, debris build-up or nuisance growth around the culverts, should be included and addressed in a formal Maintenance and Management Plan for the project.**
- **No use of machinery is allowed within any wetland/stream channels for the operational phase.**
- **All debris must be removed and properly disposed of.**
- **No dumping of debris should be allowed in the stream/wetland areas.**
- **Any wetland/ riparian or instream areas disturbed by Maintenance activities to be rehabilitated and revegetated (if necessary) after maintenance works**

GEOHYDROLGY:

It is advised that the boreholes be tested for the parameters outlined in Table 2 above which refers to the General Notice 169 of 2013, Table 2.2: Monitoring requirements for domestic wastewater discharge. By implementing these measures, the risk of groundwater contamination can be significantly reduced (LOW), protecting both water quality and the surrounding ecosystems.

The management of the groundwater abstraction includes the following recommendations:

1. **It is recommended to maintain a constant and continuous pumping schedule as much as possible. Thus, should a daily volume of less than 319 680 L/d for KF BH1 and 103 680 L/d for KF BH2 be required. it is recommended to decrease the pumping rate and not the pumping duration. By pumping continuously instead of a stop-start schedule, iron oxidation in the borehole is minimised, decreasing the amount of iron precipitation inside the boreholes and pumps.**
2. **An "observation pipe" needs to be installed (32 mm inner diameter. class 10 – Figures 15 above) from the pump depth to the surface, closed at the bottom and slotted for the bottom 5 – 10 m, for the production borehole. This allows for a 'window' of access down the borehole which enables manual water level monitoring and can house an electronic water level logger.**
3. **Continuous monitoring of groundwater levels using pressure transducers in the borehole is ideal. The water level in the borehole may not drop below the critical water level (Table 2). If the water level in the borehole drops below the critical water level, abstraction must be immediately reduced by 10 %. Monitoring must continue and after 30 days, if the water level in the borehole does not recover to above the critical water level, abstraction must be reduced by a further 10%. This process must continue until the water level in the borehole is stable.**
4. **Water quality monitoring which includes sampling and analysis of the groundwater at an accredited laboratory, is important. A sampling interval of quarterly is recommended for the first year of monitoring; thereafter, the water quality monitoring should be reviewed and can potentially be reduced to annual as proposed in Table 3 above.**
5. **The monitoring data should be reviewed on quarterly basis for the first two years and can then be scaled down to bi-annually.**

6. Installation of a sampling tap at the production borehole (to monitor water quality) is essential.
7. Installation of a flow volume meter at the production borehole (to monitor abstraction rates and volumes) is also important. External flow (e.g. mag-flow) meters are recommended.
8. Abstraction volumes must be monitored and recorded by a designated person on site. Depending on the frequency of use, daily, weekly or monthly abstraction should be recorded.
9. The appropriate borehole pump must be installed. i.e. not an over-sized pump that is choked with a gate valve. If the monitoring shows that more water can be abstracted, then the duration of pumping time can be increased (not the flow rate).
10. If required, the pump and borehole casing (and associated infrastructure) can be serviced annually and cleaned.
11. A geohydrologist should review the above information at least annually to ensure optimal groundwater abstraction and management occurs.
12. The relevant DWS monitoring officer (as specified in the Water Use Licence) should be informed if water levels are dropping to critical level or if any parameters, as specified in Table 3 above. Changes by 20%.

The groundwater abstraction should be reviewed to ensure that it is sustainable based on the monitoring data obtained.

GENERAL:

- **The Environmental Management Programme (Appendix H) be approved and implemented (which addresses all the mitigation measures outlined in this report).**
- **An Environmental Control Officer (ECO) must be appointed to monitor compliance and implementation of the approved EMPr, mitigation measures outlined in Appendix J, and all Environmental Authorisation conditions.**
- **All requirements in terms of the National Water Act must be met.**

2.3.	Provide a reasoned opinion as to whether the proposed activity or development should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be included in the authorisation.

The proposed development should be authorised for the following reasons:

- **The development is situated on previously cultivated, unproductive agricultural land, avoiding environmentally sensitive areas.**
- **The proposed activity aligns with the property's zoning as Agriculture 1 and complements the agricultural activities undertaken on the farm.**
- **The preferred alternative, developed in consultation with the EAP and Specialists, includes detailed construction and operational guidelines. These measures ensure that potential ecological impacts will be effectively managed, mitigated, and monitored.**
- **All identified impacts can be successfully mitigated, with minimal residual effects on the environment when proper management measures are implemented.**
- **The proposed development supports local economic growth by creating employment opportunities, allowing for skills transfers to new employees and significantly contributing to the stimulation of the local economy directly and indirectly through a number of associated products that will benefit from the supply chain. The proposed development will therefore have a knock-on effect for trade in local economy of the surrounding area. It is estimated that the farm turnover will amount to an estimated ±R55 million per annum with the farm producing ±4,359,168 kg of poultry meat per annum once in operation.**
- **HWC confirmed that no Heritage resources are likely to occur on site and that no further studies will be required.**
- **With the implementation of appropriate mitigation measures, the proposed activities with their expected operational phase are expected to result in a general short-term low negative impact on the site's freshwater and geohydrological features.**
- **The DWS Risk Assessment Matrix resulted in a Low-risk score, for both the construction and operational phases of the development, regarding the impacts on the freshwater features.**

It is recommended that the following mitigation measures be included as conditions of approval:

1. **The mitigation measures as recommended by the Freshwater Specialist (Appendix G2) and summarised in Section J 2.2 above;**
2. **The mitigation measures as recommended by the Geohydrology Specialist (Appendix G3) and summarised in Section J 2.2 above; and**
4. **The implementation and approval of the EMPR (Appendix H).**

2.4.	Provide a description of any assumptions, uncertainties and gaps in knowledge that relate to the assessment and mitigation measures proposed.

The experience and competency of the EAP, the public participation process currently being undertaken and information gathered during the NEMA processes followed for existing development should ensure that there are very few to no gaps in knowledge regarding the completion of the BA Process.

Limitations and uncertainties often exist within the various techniques adopted to assess the condition of ecosystems. The following limitations apply to the techniques and methodology utilised to undertake the Freshwater Impact Assessment:

- ***The purpose of [the Freshwater Impact Assessment] is to comment on the Present Ecological State (PES), Ecological Importance and Sensitivity (EIS), Ecoservices, Recommended Management Objectives (RMO's) and Recommended Ecological Class (REC's) of the freshwater features found within the project area, as well as determine the impact of the proposed activities on such freshwater features.***
- ***The determination of the watercourse boundaries and the assessment thereof is confined to the watercourses within the defined investigation area. Only the affected areas of the watercourses identified were delineated based on the findings of the field assessment undertaken by EverWater Freshwater Consulting on 13 November 2024, and in fulfilment of Government Notice 509 of 2016 as it relates to activities as stipulated in Section 21(c) and (i) of the National Water Act, 1998 (Act No. 36 of 1998) (NWA). The larger surrounding freshwater system was delineated on a desktop level.***
- ***The WET-health assessment was carried out using the South African Department of Water and Sanitation's developed methodologies. These assessments were carried out to provide information on the ecological condition and ecological importance, and sensitivity of the river systems impacted.***
- ***Watercourses and terrestrial areas create transitional zones, or ecotones, where vegetation gradually shifts from terrestrial species to facultative and obligate freshwater species. Within these transition zones, there may be some variation in the opinion of the exact watercourse boundary. However, by applying the DWAF (2008) method, assessors should generally arrive at consistent and comparable results.***
- ***The project deliverables, including the reported results, comments, recommendations and conclusions, are based on the author's professional knowledge as well as available information. Even though every care was taken to ensure the accuracy of this report, environmental assessment studies are limited in scope, time, and budget. Discussions and proposed mitigations are, to some extent, made on reasonable and informed assumptions built on bona fide information sources, as well as deductive reasoning. No biomonitoring or physical-chemical aspects of the water found in the study were done.***
- ***The author reserves the right to modify aspects of the report, including the recommendations, if and when new information becomes available from ongoing research or further work in this field or pertaining to this investigation.***
- ***The author has exercised reasonable skill, care and diligence in the provision of services; however, accepts no liability or consequential liability for the use of the supplied project deliverables and any information or material contained therein. The client, including their agents, by receiving these deliverables indemnifies EverWater Freshwater Consulting (including its members, employees and sub-consultants) against any actions, claims, demands, losses, liabilities, costs, damages and expenses arising directly or indirectly from or in connection with services rendered, directly or indirectly by EverWater Freshwater Consulting.***

GEOYDROLOGY:

During the Geohydrological Assessment certain assumptions limited the accuracy of the data acquired and the outcome of the report:

- ***Available data was sourced from the relevant groundwater databases and sources. The aquifer vulnerability, yield and quality data are predominantly accurate, albeit mapped at a regional scale.***

- *The groundwater quality was assessed from one set of test results. Seasonal changes may occur in the chemistry of the water from the borehole and this has not been accounted for.*
- *The coordinates of the NGA boreholes are sometimes found to be inaccurate. Hence, it was difficult to incorporate the NGA data accurately into the field hydrocensus.*
- *All active, registered, verified, and lawful abstraction volumes (that could be obtained from the WARMS database. which was last updated in May 2025) were taken into account when calculating the available volumes within the firm yield of the GRU. This database is updated continuously, however, access to the latest data is limited and not easily accessible. Also, it should be noted that not all groundwater abstraction is suitably registered and documented, and this study could only take into account what has been registered and active.*
- *Limited water level data could be obtained through the NGA database as well as through the hydrocensus and assumptions had to be made without this data available.*
- *The Aquifer Firm Yield model does not incorporate lateral groundwater flow as the model is a linear model.*
- *The water requirement was provided by PHS Consulting, and it is assumed that the demand is worked out accordingly to the property's water requirement.*

It is assumed that treatment of the water is necessary; however, without an approved treatment plan, the risk associated with the plan cannot be determined.

2.5.	The period for which the EA is required, the date the activity will be concluded and when the post construction monitoring requirements should be finalised.

Period for which the EA is required: 10 Years
Date the activity will be concluded: Unknown at this planning stage.
Post construction monitoring requirements should be finalised: Unknown at this planning stage.

5. Water

Since the Western Cape is a water scarce area explain what measures will be implemented to avoid the use of potable water during the development and operational phase and what measures will be implemented to reduce your water demand, save water and measures to reuse or recycle water.

Construction Phase:

- **No running water will be utilized for the cleaning of equipment, buckets will be used instead.**
- **Rainwater capturing and use onsite will be considered and encouraged.**

Operational Phase:

- **Chicken pens will be dry-swept.**
- **When the pens are washed down it will be done with a high-pressure hoses (washing pumps) and minimal water usage.**
- **The bio-security wash down area and its associated showers will use water saving devices to minimise the use of water on site.**
- **Waterwise indigenous vegetation will be used for landscaping.**
- **Water used in the facility will be measured by a meter and read monthly.**
- **The water reticulation system will be checked on a regular basis for leaks in pipes or taps to prevent unnecessary water losses.**

The proponent has initiated the water use authorisation application process regarding the proposed S21 (a) for the abstraction from the 2 boreholes on site; S21(c) and (i) for the proximity of infrastructure and boreholes to regulated areas of wetlands and drainage lines, and S21(g) for the installation of 3 septic tanks. The ELU has been confirmed by BOCMA. Please refer to Appendix G4: WULA.

6. Waste

Explain what measures have been taken to reduce, reuse or recycle waste.
The poultry broiler operation incorporates sustainable waste management practices, supporting circular agriculture by using the chicken manure as compost onsite as well as supplying it to growers within the surrounding area. The manure is directly applied to agricultural lands. The operation prioritizes minimizing new materials brought onsite, maximizing recycling and waste separation, and reusing existing materials where possible. Organic domestic waste will be composted on site with solid waste being separated into recycled and non-recycled waste to be removed on a weekly basis to the local municipal facility. These measures effectively reduce, reuse, and recycle waste while promoting sustainability.

7. Energy Efficiency

8.1.	Explain what design measures have been taken to ensure that the development proposal will be energy efficient.

The pens have been located in such a manner as to ensure that they optimise the use of the natural elements for cooling and heating in their orientation and layout. The overall designs minimise the need for additional heating and cooling mechanisms and methods.

The Electrical Network Service Provider (NSP) for the site is Eskom. The site is being fed from the Haamanshof-Farmers 3 11kV overhead line (OHL) feeder which is then stepped down to the 400V voltage level via a 100kVA distribution transformer. As the electrical network of Eskom currently has insufficient capacity to supply the entire project with the necessary electricity, RenEnergy was tasked to design a plan where renewable energy is used to supply the electricity needs of the project instead. The existing Eskom supply will therefore be supplemented with solar energy which is more sustainable.

Based on the electrical equipment that would be installed inside each one of the 20 broiler houses, the broiler houses will have a total peak power requirement of around 301.5kVA, including the new infrastructure at the entrance of the farm and requirement of the existing infrastructure, the total load requirement for the farm is estimated to be 312kVA. Solar panels are proposed on the roofs of the chicken houses. At a designated area close to the delivery point of Eskom the containerised solar batteries will be placed, and a generator room will be built to house the backup generators. A bunded Diesel Tank (2200L) will also be located within close vicinity of the Generator Room. A low voltage (LV) underground cable will go from the existing Eskom point/transformer, via a trench, to the distribution station. A step-up transformer and 11KV overhead line will then distribute power from the distribution station to the proposed facilities.

The reservoirs and water treatment facility has been repositioned to allow for gravity flow thereby reducing pumping and using less electricity.

DECLARATION OF THE APPLICANT

Note: Duplicate this section where there is more than one Applicant.

I, **Roedolf Steenkamp**, ID number **6607155236082**, ~~in my personal capacity or~~ duly authorised thereto hereby declare/affirm that all the information submitted or to be submitted as part of this application form is true and correct, and that:

- EFRC is fully aware of its responsibilities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), the Environmental Impact Assessment ("EIA") Regulations, and any relevant Specific Environmental Management Act and that failure to comply with these requirements may constitute an offence in terms of relevant environmental legislation;
- EFRC is aware of its general duty of care in terms of Section 28 of the NEMA;

- EFRC is aware that it is an offence in terms of Section 24F of the NEMA should it commence with a listed activity prior to obtaining an Environmental Authorisation;

- EFRC appointed the Environmental Assessment Practitioner ("EAP") (if not exempted from this requirement) which:
  - meets all the requirements in terms of Regulation 13 of the NEMA EIA Regulations; or
  - meets all the requirements other than the requirement to be independent in terms of Regulation 13 of the NEMA EIA Regulations, but a review EAP has been appointed who does meet all the requirements of Regulation 13 of the NEMA EIA Regulations;

- EFRC will provide the EAP and any specialist, where applicable, and the Competent Authority with access to all information at my disposal that is relevant to the application;

- EFRC will be responsible for the costs incurred in complying with the NEMA EIA Regulations and other environmental legislation including but not limited to –
  - costs incurred for the appointment of the EAP or any legitimately person contracted by the EAP;
  - costs in respect of any fee prescribed by the Minister or MEC in respect of the NEMA EIA Regulations;
  - Legitimate costs in respect of specialist(s) reviews; and
  - the provision of security to ensure compliance with applicable management and mitigation measures;

- EFRC is responsible for complying with conditions that may be attached to any decision(s) issued by the Competent Authority, hereby indemnify, the government of the Republic, the Competent Authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which I or the EAP is responsible in terms of the NEMA EIA Regulations and any Specific Environmental Management Act.

Note: If acting in a representative capacity, a certified copy of the resolution or power of attorney must be attached.

Signature of the Applicant: Date: 24 October 2025

EFRC Agri Operations (Pty) Ltd.

Name of company (if applicable):

DECLARATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

I **Jenna Theron**, EAP Registration number **2022-5926** as the appointed EAP hereby declare/affirm the correctness of the:

- Information provided in this BAR and any other documents/reports submitted in support of this BAR;
- The inclusion of comments and inputs from stakeholders and I&APs;
- The inclusion of inputs and recommendations from the specialist reports where relevant; and
- Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties, and that:
- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or
  - am not independent, but another EAP that meets the general requirements set out in Regulation 13 of NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review EAP must be submitted);
- In terms of the remainder of the general requirements for an EAP, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- I have disclosed, to the Applicant, the specialist (if any), the Competent Authority and registered interested and affected parties, all material information that have or may have the potential to influence the decision of the Competent Authority or the objectivity of any report, plan or document prepared or to be prepared as part of this application;
- I have ensured that information containing all relevant facts in respect of the application was distributed or was made available to registered interested and affected parties and that participation will be facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments;
- I have ensured that the comments of all interested and affected parties were considered, recorded, responded to and submitted to the Competent Authority in respect of this application;
- I have ensured the inclusion of inputs and recommendations from the specialist reports in respect of the application, where relevant;
- I have kept a register of all interested and affected parties that participated in the public participation process; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations;

23 October 2025

Signature of the EAP: Date:

PHS Consulting

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I Jeanne Snyman, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or

  - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);

- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;

- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and

- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.

27/10/2025

Signature of the EAP: Date:

EverWater Freshwater Consulting

Name of company (if applicable):

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I Danita Hohne....., as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or

  - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);

- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;

- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and

- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.

30 October 2025

Signature of the EAP: Specialist Date:

GEOSS SA

Name of company (if applicable):