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Confluent Environmental (Pty) Ltd
2016/069194/07

Date:: 13 February 2025
Ref: WU34534
To: BOCMA
By eWULA: Department of Water and Sanitation

Dear Assessor,

this correspondence is to confirm that Confluent Environmental conducted the Water Use License Application for Familie Roux Eeindomme (Pty) Ltd for the proposed housing development on Portion 91 of Farm Matjes Fontein 304, Keurboomstrand.

The following table presents all the comments received from Interested and Affected Parties during the Public Participation period, which ran from 12 September 2024 – 11 November 2024, for the proposed housing development on Portion 91/340, Matjes Fontein, Keurboomstrand. It should be noted that this was the second public participation process for this proposed development, as the Environmental Assessment Practitioner (EAP) ran a separate process in support of the Basic Assessment.

Certain groups of objectors made use of a template with which the same comments were repeated and emailed by individuals.

Similar comments from various entities, in more formal correspondence, were also sent by email during the public participation period.

All the comments were reviewed and due to the repetitive comments received from groups of individuals by email, we combined comments per topic and compiled a comprehensive response per topic. These topics were responded to by the relevant specialists. These topic-based responses, following the comments, are applicable to:

- Other Residents and Public Template type emails I&AP's and
- Milkwood Glen Homeowners Residents and Public Template type emails I&AP's.

Where letters were sent from specific entities, the comments were individually responded to in the following table. The entities who sent separate documents were:

Garden Route District Municipality
Department of Infrastructure
Driftwood Private Estate
Plettenberg Bay Community Environment Forum
Plett Ratepayers
CapeNature
Cullinan and Associates Environmental and Green Business Attorneys

Specialist reports were updated and amended where necessary, based on comments received.

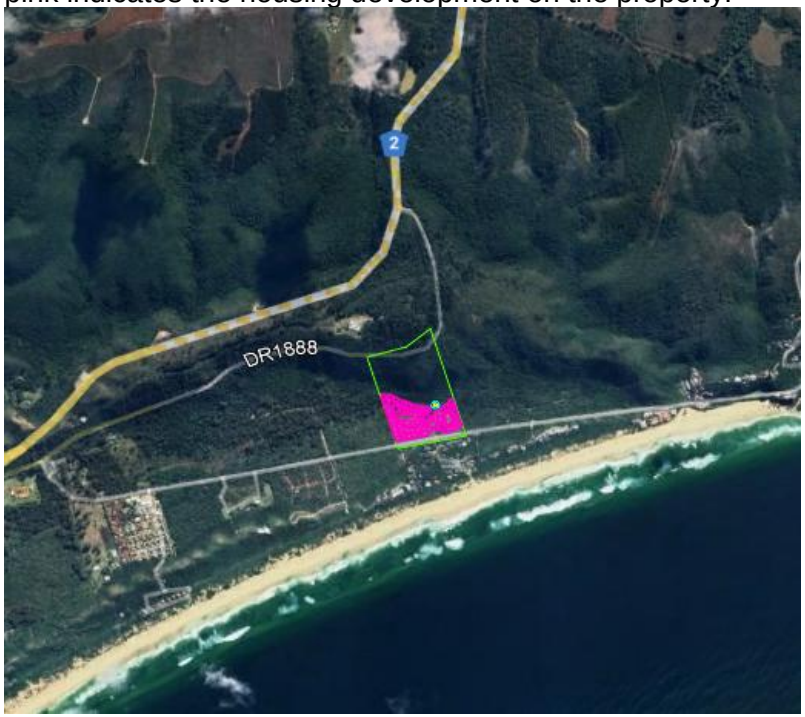
Also attached to the below Comments and Response table, is the Civil Engineering (Poise Engineering, Appendix 2) comments and responses, which provide detail to specific topics relevant to the engineering concerns raised during the public participation period.

Please feel free to engage further if you have any queries or comments.

Yours sincerely,

Dr Jackie Dabrowski
Director & Aquatic Specialist
Pr. Sci. Nat. (Aquatic Science & Ecology)
+27 83 256 3159

COMMENTS AND RESPONSE REPORT

COMMENTS	RESPONSE
SANRAL	
Nicole Abrahams 0622158945, Abrahamsn@nra.co.za The below listed project bears reference. May I request that you provide me with a locality plan in which the N2 has been indicated in relation to the proposed project please.	Please see below map, where the green line is the outline of Farm 91/304 and the pink indicates the housing development on the property: 
Western Cape Government Land Use Management Department of Agriculture	
Cor van der Walt 021808-5093, landuse.elsenburg@elsenburg.com Please ensure that this office receives a **HARD COPY** or **CD** or **USB STICK**. We unfortunately cannot afford to print	Sent copy of reports on a CD for attention of Cor van der Walt.

applications and reports. We do not have an electronic filing system but are in process of developing an electronic filing system. We hope to have an electronic filing system in the near future.	
Department of Environmental Affairs and Development Planning Environmental Officer: Coastal Management	
Mfundo Ndovela 021 483-5157, mfundo.ndovela@westerncape.gov.za Dear Sir/Madam, I hope you are well. I am trying to access the application documents. The link is not working, can you please assist?	Resent link.
Heritage Resource Management Services Specialist Heritage Officer (Archaeologist)	
Stephanie-Anne Barnardt-Delport 021 829-3315, stephanie.barnardt@westerncape.gov.za Please can you provide me with HWC reference number for me to provide you with a comment. If there was no NID trigger, please note that HWC cannot comment on matters that do not form part of our mandate. Please include your HWC reference number in future correspondence to assist in responding to your query promptly.	The Water Use License Application (WULA) has a reference number on the online eWULA system as follows: **WU34534**
Garden Route District Municipality-Community Services Head: Environmental Management (Appendix 7)	
GJ Vos; Chief Municipal Health-Bitou 044 501 1602| +27 (0)83 557 1522, gjvos@gardenroute.gov.za This office subjected to the following condition has no objection to the proposed activity,	1-3. Drinking water will be supplied by Bitou Municipality, see Bitou Municipality Bulk Services supply (Appendix 1) letter confirming availability. 4-9.On-site WWTW:

1. Purified drinking water for domestic use must comply with the bacteriological and chemical standards in terms of SANS 241-1: 2015-Edition 2 for drinking water. 2. The purified water must be monitored for bacteriological and chemical quality on a regular basis. 3. Results of such samples must be kept on record and available on request. 4. The proposed on-site Sewage Treatment Plants must be registered with the Department of Water and Sanitation and approved by Bitou Municipality. 5. The plant must have standby non electronical pumps available in case of power outages, failures or mechanical malfunction. 6. Emergency storage must be provided with an emergency-overflow storage sump (24hours). 7. A competent person must be appointed to operate and maintain proposed sewage system. 8. The final effluent must comply with the standards as determined by the Department of Water and Sanitation. 9. The effluent from plant must be monitored by water sampling on a regular basis. 10. Results of such samples must be kept on record and available on request. 11. The utilisation of the effluent is subjected to the “Guide for Permissible Utilization of Sewage Effluent”.	See the Poise Engineering Report (Appendix 2) Paragraphs under point 5.4 on the temporary wastewater treatment plant: 4. <u>WWTP registration</u> See Bitou Municipality letter (Appendix 5) confirming approval of on-site package plant for sewage treatment. The DWS will receive the application for the Water Use License for the housing development, which includes an application for the WWTP (WU34534). 5. <u>Power supply</u> The plant will be powered by a Solar/Eskom charged battery system with a backup generator for emergency supply in the event of extended Eskom down time. 6. <u>Emergency storage:</u> See the Poise Report Paragraph 5.4.6: The anaerobic tank will include for 48 hours of emergency storage. Furthermore, a gravity overflow pipe will be installed to link the anaerobic tank to the Bitou municipal sewerage system located on the opposite side of Keurboomstrand Road MR395. This overflow will only become operational in the event of the overflow of the emergency storage. 7. <u>Operation and maintenance:</u> See Poise Engineering report paragraphs 5.4.2 / 5.4.3: A Plant maintenance manager will be appointed, who will be given comprehensive up front training to obtain the skills to repair if needed and will visit the site and inspect the plant on a daily basis. Bio Sewage Systems do also have support teams available at short notice should any unusual issues arise. The Bio Sewage Systems plant is designed to be fully automated, and simple in operation. Regular inspections are only required to ensure it is running to specification. <u>8. Final effluent standard:</u> The Bio Sewage Systems plant is a containerized bio reactor plant which delivers treated sewerage to the DWAS special limits water quality standard (Poise Engineering).

12. All water supply lines must be completed before commencement of the development. 13. Proposed sewage system must be completed before commencement of the development. 14. Solid waste stored on-site in a designated area approved by Bitou Municipality. 15. Refuse collection area enclosed with no rainwater or stormwater run-off, water point for proper cleaning and gully connected to sewer on lowest point of concrete floor. 16. All stormwater run-offs must include a best management practical approach to trap pollutants and minimise impacts on the nearby river/estuary system (no wash away). 17. All non-recoverable refuse is to be incorporated into the Bitou Municipality solid waste stream. 18. All service agreements between developer and Bitou Municipality must be in place.	9. <u>Effluent sampling:</u> Groundwater monitoring will be undertaken.. Refer to the Poise Report Paragraph 5.4.2. Should it be required, excess effluent will be discharged to the stormwater infiltration ponds system. This will be environmentally acceptable, the effluent being to DWS Special Limits quality. Effluent quality will be tested on a monthly basis. Samples must be collected pre-development to determine baseline water quality (at least once/month over 3 months), to monitor possible impacts over time. Samples should be analysed from the start of construction onwards and be submitted for analysis on a monthly basis. Parameters for analysis should be aligned with those indicated in the DWS general limits. Water chemistry must not vary by 10% of the background levels established through baseline sampling. If sampling shows indications that eutrophication of the groundwater is occurring for 3 months consecutively, then an alternative to irrigation with treated wastewater must be found (Aquatic Specialist, Appendix 3). 10 - 15, 17,18. Poise Engineering (Appendix 2), advised that the services agreement will define the applicable development parameters relating to sewerage, water, electricity, stormwater management, internal roads and access. 16. <u>Stormwater runoff</u> Strict recommendations have been made that no treated wastewater, or stormwater runoff from the development must be directed into the pond (Aquatic specialist, Appendix 3). Stormwater will infiltrate or run to the stormwater retention ponds (Poise Engineering, Appendix 2).
Department of Infrastructure Road Use Management **Road Use Management, Chief Executor of Road Planning, Roads Branch (Appendix 8)**	

Vanessa Stoffels; DD Fortuin vanessa.stoffels@westerncape.gov.za 1. This Branch, from an environmental point of view, offers no objection to this proposed development, provided that this Branch will be offered the opportunity to issue its comments and approvals during the land use application stage. 2. Initially this Branch wishes to mention that Main Road 394 (MR00394) and Divisional Road 1888 (DR01888), both roads for which this Branch is the Road Authority, traverse Farm 304/91. Based upon a desktop study it appears as if the proposed access off MR00394 will be ideal, but access(es) off DR01888 might pose a problem, especially to the portion north of that road (that might even had been taken up as road reserve). 3. To prevent any delays during the land use application stage this Branch recommends that access(es) off DR01888 is ensured to be in accordance with this Branch's accepted safe standards.	1. Noted 2. EcoRoute Comments and Response Report (Appendix 4) advised that a Traffic impact study has been done, please see Appendix G 8 of the Draft BAR. It found no unacceptable levels of traffic or congestion. • Under escalated (2025) background normal traffic conditions no problems are experienced at the affected junctions in terms of capacity. • Access to the development can safely be accommodated from Keurboom Road (MR00394) provided the access is configured as indicated on the SDP attached as Appendix B1. Planning Space commented that, a servitude will be made of the portion north of the road, as the property to the north belongs to the applicant for this WUL. See Appendix 19 of Planning Space with regards to the Provincial roads access. 3. Noted
Aviation Safety Infrastructure (ASI)- Aviation Environmental Compliance Department	
Nrateng Mashiloane, environment@caa.co.za **Lizell Stroh** StrohL@caa.co.za SACAA has no comments for the proposed residential development. The proposed development is outside the vicinity of aviation infrastructure which show no indication of major/negative impacts to aviation infrastructure and activities within the airport.	Noted.

However, if there are any structures or machinery whether temporary or permanent that are deemed too tall, kindly lodge an application as published on the SACAA website:www.caa.co.za/industryinformation/obstacles/ The list and contact details of the approved obstacles assessment services providers can be obtained from the CAA website: www.caa.co.za.	
Driftwood Homeowners Association (Appendix 9)	
Wessel Hamman Tel: +44 (0) 783 489 1017, whamman@clearancecap.com As a Trustee of the Driftwood Homeowners Association, and an owner and resident of the Driftwood Private Estate, situated directly opposite Keurbooms Road from the proposed development site, I wish to formally object to the Water Use License Application submitted by Familie Roux Eiendomme (Pty) Limited. This objection is being lodged on behalf of the Driftwood Homeowners Association and Driftwood 780 (Pty) Limited which is the owner of Erf 780, Erf 781, Erf 782, Erf 783, Erf 784 and Erf 785, Keurboomstrand, which collectively comprise the "Driftwood Private Estate". The Proposal poses substantial risks to both environmental integrity and the property values in our community, for the following reasons: **1. Impact on Local Water Resources Proximity to Sensitive Ecosystems:** The development site is located within 100 meters of a natural spring and pond that play a critical role in the local ecosystem. Despite suggested mitigation strategies,	1. Impact on local water resources proximity to sensitive ecosystems *Comment provided by J. Dabrowski:* As per the Aquatic specialist report (Appendix 3), the pond and associated spring are identified as a watercourse as defined in the National Water Act. A buffer of 10 m for this feature is recommended. Development should be planned to exclude this buffer area during the construction and operational phase. It is identified as a 'No-Go' area during the construction phase to prevent any disturbance, and incorporated in the 20m conservation corridor which in effect creates a much bigger buffer around the norther section of the pond and spring. This feature does not contain especially sensitive fauna or flora and the pond is artificial (man-made), commonly used for watering of livestock and horses most recently. There is little to no risk of contamination because all development-related activities are downslope of the spring. Disruption to wildlife aims to be minimised through establishment of the wildlife corridor which includes the spring. 2. Disruption of watercourses *Comment provided by J. Dabrowski:* The spring is isolated and not connected to any other surface water resource. The only reason Section 21 c) and i) water uses are even applicable here are because of the technical definition of the regulated area which includes 100m from a spring. But the development itself is not affecting the flow of spring water in any way. As such there is absolutely no impact to aquatic ecosystems or aquatic biodiversity.

including a 10-meter buffer zone, there remains a considerable risk of contamination and disruption to these aquatic systems during construction and operational activities. **2. Disruption of Watercourses:** The actions outlined in Sections 21(c) and 21(i) of the National Water Act, specifically regarding interference with and alteration of natural water flow, represent a long-term risk to the local aquatic ecosystems. Such disruptions can lead to cascading effects on biodiversity. **3. Groundwater Recharge Issues:** The addition of impervious surfaces and alterations to landscape contours could interfere with natural groundwater recharge mechanisms. These changes are understated in their potential impact and could result in long-term hydrological imbalances. **4. Inadequate Wastewater Management Systems Dependence on Temporary Sewage Solutions:** The proposal to use a temporary Bio Sewage System until municipal infrastructure enhancements are completed raises serious concerns. Such systems demand constant and expert management—something that may not be feasible due to a lack of local expertise. A failure or overflow could lead to untreated sewage contaminating groundwater and adjacent ecosystems. The application indicates that upgrades to the municipal wastewater systems are contingent upon future funding and lack a definite timeline. This creates an unacceptable dependency on an uncertain and unlikely schedule for municipal improvements. **5. Concerns Regarding Stormwater Management:**	3. Groundwater Recharge Issues Refer the Poise Report paragraph 8.4. All roads and driveway will remain permeable. The impermeable roof areas will amount to approximately 25% of the development area. By nature of the stand layout roof areas will not be in a concentrated location but will be distributed around the development area. Roofs will discharge to Rainwater Harvesting tanks from which excess water will discharge on surface between and around the units. The landscape levels will be modified, however the gradients will remain extremely flat and the majority of runoff will therefore infiltrate the ground before reaching the ponds. Under heavy rainfall conditions runoff reaching the ponds will be stored in the ponds whilst the infiltration process is in progress. Water infiltration around the houses and from within the ponds will spread laterally by capillary action. The impermeable areas will therefore have no negative impact on the groundwater recharge process. Groundwater recharge occurs over a broad region rather than being site-specific, and considering the implementation of effective stormwater and infiltration management strategies, the development is not anticipated to significantly diminish the natural recharge of the aquifer. Instead, with proper planning and mitigation, it can coexist with the surrounding hydrological system while ensuring sustainable groundwater availability (DHS Groundwater, Appendix 20). 4. The Bitou Municipality is in agreement with the temporary Bio Sewage System until such time that upgrades were done and the proposed development can connect into the Municipal sewer system (Appendix 5). See Poise Engineering report paragraphs 5.4.2 / 5.4.3: A Plant maintenance manager will be appointed, who will be given comprehensive up front training to obtain the skills to repair if needed and will visit the site and inspect the plant on a daily basis. Bio Sewage Systems do also have support teams available at short notice should any unusual issues arise

The site's permeable soil conditions may not adequately prevent surface runoff from carrying construction debris and pollutants into the nearby spring and pond. The proposed detention ponds, while intended to manage runoff, may become overwhelmed during severe weather events, heightening the risk of flooding and water contamination. The potential for contamination during construction and operational phases could negatively affect local wildlife that depend on the spring and pond for their survival. Although the proposed wildlife corridor may offer some benefits, it may not fully address these risks. 6. **Insufficient Skills for Managing Wastewater Treatment:** Effective management of the proposed Bio Sewage System requires skilled personnel, of which there is a shortage in the area. Without dedicated, expert oversight, the likelihood of system failures increases, resulting in potential sewage spills that could severely impact groundwater quality and public health. As time goes by and reduced monitoring is applied, the risks escalate meaningfully. The lack of local expertise raises the risk of operational malfunctions, thereby threatening both the safety and sustainability of the proposed development. 7. **Emergency Response and Contingency Plan Deficiencies:** There is a lack of a comprehensive emergency plan for sewage overflow incidents. The failure to establish a dedicated pump station for off-site sewage transport in the event of an overflow exacerbates the situation. During a failure, sewage production will continue at a rate of 30kL per day, intensifying the crisis. The	The Bio Sewage Systems plant is designed to be fully automated, and simple in operation. Regular inspections are only required to ensure it is running to specification. See the Poise Report Paragraph 5.4.6: The anaerobic tank will include for 48 hours of emergency storage. Furthermore, a gravity overflow pipe will be installed to link the anaerobic tank to the Bitou municipal sewerage system located on the opposite side of Keurboomstrand Road MR395. This overflow will only become operational in the event of the overflow of the emergency storage. There will therefore be no possibility of ground contamination through leakage or overflow. Poise engineer further stated that to enable the monitoring of any potential failure and consequential overflow of the system, an emergency alarm will be installed which will be activated once effluent level rises in the emergency storage component of the system. All required regular maintenance can be done within the 48-hour emergency storage period Spares will be kept on site for all critical mechanical and electrical components 5. Stormwater management and flooding prevention designs as per the Poise Engineering report (Appendix 2): The stormwater will be managed such that roof areas will drain to gardens which will fall towards roads or directly to one of three infiltration attenuation ponds to be provided. The main access roads will be surfaced with permeable paving and secondary roads with grass block paving. In either case infiltration will occur through the road structure and roadbed to the natural ground below. Excess runoff to the road surfaces which does not infiltrate will be surface discharged to the infiltration ponds.

emergency storage capacity of the system is restricted to 48 hours. Given the likelihood of issues arising during peak periods—such as the holiday season in December, when emergency response teams may be unavailable—this storage capacity is inadequate. A malfunction on a day like December 25th would be particularly challenging to rectify within the 48-hour timeframe. 8. **Risks to Nearby Water Sources: Contamination potential for Milkwood Glen Estate borehole:** Our understanding is that the Milkwood Glen Estate relies on a borehole that supplies water to its residents. This borehole is located within 500 meters of the proposed sewage treatment system, putting it at significant risk of contamination from any potential overflow or seepage. The potential for contaminating this essential water source is unacceptable, particularly since borehole water is often irreplaceable and difficult to clean once polluted. 9. **Underestimated Sewage Production and Capacity Challenges:** The proposed system is designed for a daily sewage treatment capacity of 30kL, which translates to only 125 liters per person for a development of 60 homes, assuming each will house 4 occupants. However, the average water usage in South Africa is 237 liters per person daily. This discrepancy indicates that the sewage system is grossly undersized, particularly during peak vacation periods when occupancy will be very high.	Site levels will be designed to ensure the effective implementation of the stormwater management system. The minimum floor level of any stand will be 4.0m MSL. The site slopes and road levels will be designed to flat gradients to enable maximum infiltration whilst draining on surface to the ponds. The levels will also be designed to contain flood runoff within the ponds. The pond invert levels will be designed such that they will be no deeper than 1.5m above the existing water table. The site design levels will protect homes from flooding. There are no defined runoff exit positions from the site and the permeable conditions of the site allow that in the current state all rainwater falling on the site discharges through infiltration within the defined area of the site. Keurboomstrand Road along the southern boundary of the site forms a barrier to runoff to the south in the unlikely event of extreme flooding conditions and insufficient discharge through infiltration. The sites to the west and east of the site have similar characteristics and there is no significant overland discharge to or from either side boundary. The total area of the site to be excluded from development is approximately 9.45 hectares. In the post-development state, rainfall over the undeveloped areas will continue to discharge via infiltration over those areas and toward the natural spring and pond. All the detention ponds will also be downslope from the area of the spring. It is therefore a physical impossibility that any flooding of detention ponds will result in contamination of the spring. See point 2 above on the buffer protection for the pond. 6. See the Poise Report Paragraph 5.4.3. A trained plant maintenance manager will be appointed. A Plant maintenance manager will be appointed, who will be given comprehensive up front training and will visit site and inspect the plant on a daily

	basis. Bio Sewage Systems do also have support teams available at short notice should any unusual issues arise. The Bio Sewage Systems plant is designed to be fully automated, and simple in operation. Regular inspections are only required to ensure it is running to specification. 7. To See the Poise Report Paragraph 5.4.6: The anaerobic tank will include for 48 hours of emergency storage. Furthermore, a gravity overflow pipe will be installed to link the anaerobic tank to the Bitou municipal sewerage system located on the opposite side of Keurboomstrand Road MR395. This overflow will only become operational in the event of the overflow of the emergency storage. There will therefore be no possibility of ground contamination through leakage or overflow. Poise engineer further stated that to enable the monitoring of any potential failure and consequential overflow of the system, an emergency alarm will be installed which will be activated once effluent level rises in the emergency storage component of the system. All required regular maintenance can be done within the 48-hour emergency storage period Spares will be kept on site for all critical mechanical and electrical components 8. GN36820 of the NWA 1998, stipulates that if irrigation with treated wastewater takes place it is excluded from General Authorisation if not at least 50m above the 1:100 flood line or riparian habitat, whichever is the greatest, or alternatively at least 100 m from a water course, whichever is the greatest, or at least further than 500 m radius from a borehole that is utilised for drinking water or stock watering. In such case a WUL must be applied for, so that studies can be done to determine the impact it may have on surrounding groundwater and boreholes. As per Poise Engineering report the containment of leakage has been addressed as follows:

	The anaerobic tank will be the only underground component of the Plant. The tank will be constructed of reinforced concrete including Penetron Admixture. The durability will therefore be in excess of 50 years, but effectively infinite. The containerised plant is a fully contained unit, sealed against leakage. It is equipped with overflow protection back to the anaerobic tank in the event of an unlikely blockage within the system A subsurface drainage system will be installed beneath the anaerobic tank, including a pump sump from which any leakage can be returned to the tank. The drainage system will have an impermeable lining beneath it designed such that that no leakage will infiltrate the ground below. By implementing the recommended monitoring network and mitigation measures as prescribed in the geohydrological report, the risk of groundwater contamination during both the construction and operational phases can be reduced to negligible - negative. This will ensure that groundwater quality is continuously protected and that any potential issues are addressed promptly, safeguarding the health and sustainability of the surrounding ecosystem and water users. See mitigation measures as outlined herein under section 2 and 8 under responses to Appendix 10, Plett Environmental forum section. DHS Groundwater commented that it is important to note that the borehole in question is actually a spike/well point with poor water quality, and its water is used exclusively for irrigation purposes. Despite this, strict mitigation measures must be implemented to prevent any potential contamination from reaching the borehole. Critical Mitigation Measures: 1. Containment of Leakage from the WWTP - As highlighted in the Poise Engineering Report, all necessary measures should be taken to prevent leaks from the wastewater treatment plant (WWTP). 2. Installation of a Groundwater Monitoring Network

	- One piezometer upstream of the development. - Two piezometers downstream to track potential contaminant migration. - One piezometer near the WWTP for close monitoring of effluent impact. 3. Regular Groundwater Quality Monitoring - Monthly groundwater sampling as recommended in the Geohydrology Impact Assessment to detect any early signs of contamination. 4. Effluent Quality Testing - Frequent testing of effluent quality to assess the potential impact of the WWTP on groundwater resources. 5. Immediate Response to Contamination - If a leak is detected, a monitoring piezometer shows contamination, or effluent quality deteriorates, a Phase 1 Contamination Assessment should be conducted. - Remediation efforts must be carried out in consultation with a contamination remediation consultant and relevant authorities. By implementing the recommended monitoring network and mitigation measures outlined in both the Poise Engineering Report and the Geohydrology Report, the risk of groundwater contamination during both the construction and operational phases can be reduced to a negligible-negative impact. These proactive steps will ensure the long-term protection of groundwater quality and allow for prompt intervention should any contamination risks arise, safeguarding both the surrounding ecosystem and water users. According to the DHS Groundwater report (Appendix 20), the following mitigation measures must be adhered to prevent groundwater contamination from the WWTP: • Ensure the WWTP comply with SANS1200 Part K:Civil Engineering Standard Specifications, NWA, Water Quality Guidelines (DWAF), SANS1913:Planning, Design, and Construction of Sanitation Systems, Wastewater Treatment Plant Design and Operational Guidelines (DWAF, 2008)

	• Use synthetic/geotextile liners and impermeable surfaces approved by the Department of Water and Sanitation (DWS) in areas where sewage and associated waste are handled. • Construct all sewer lines and pipes to ensure leak-proof systems that prevent contamination. • Ensure that sewage holding tanks and accommodation facilities are properly managed to prevent overflow and spillage. • Regularly service the WWTP and inspect the integrity and efficacy of the WWTP • Ensure emergency procedures are in place to rapidly repair WWTP should failure occur. • Set up a comprehensive monitoring system to monitor the effluent quality. • Install at least three monitoring piezometers into the water table, one upstream and two downstream of site. Additionally, a piezometer should be installed in close proximity of the WWTP. • Should a leak be detected or the monitoring piezometers be contaminated, a baseline Phase 1 Contamination Assessment should be undertaken and the site remediated in consultation with a contamination remediation consultant and the Authorities. 9. The average of 237 litres per day, stated in the objections, is based on bulk volumes supplied by water authorities and includes extensive municipal leakages, irrigation of parks and sporting facilities and various other usages and is of no relevance to the development demand.. Poise Engineering stated that the water consumption adopted in the Engineering Report is 600 litres per unit per day. This is the figure recommended in the GLS bulk services report. It is also the lower figure of the consumption figures recommended in the CSIR Red Book and the Neighbourhood Planning and Design Guidelines, the latter being the default reference of Bitou Water and Sanitation Department. The lower figure is motivated with consideration to the low expected average occupancy and the water harvesting and effluent recycling measures to be adopted.

Plett Environmental Forum (Appendix 10)	
Nikki Mann info@plettenvironmental.co.za, 082 322 2209 1. Water Quality and Flow of the Spring - Hydrology and Recharge Patterns: Alterations in water flow to the spring threaten the natural hydrological balance, which could reduce water levels in the spring and disrupt the surrounding ecosystem's water cycle. These changes could also affect the functioning of the aquifer/groundwater below, which is connected to the wetlands and surface water on neighbouring properties. - Risks to Water Quality: Modifications to the spring's flow or chemical composition could degrade water quality. Increased nutrient or pollutant levels could destabilise the natural balance, threatening ecosystem resilience. - Reduction in Recharge and Water Availability: Changes to the spring's characteristics could reduce its capacity to recharge naturally, limiting water availability for surrounding ecosystems and further impacting flora and fauna reliant on this resource. - Wildlife Water Dependency: Springs are often crucial water sources for local wildlife especially in drier months. Any alteration to the spring's quality or flow may lead to loss of species that are unable to adapt to these changes, thereby weakening ecosystem resilience and reducing biodiversity. - Downstream Effects on Soil Moisture and Vegetation Health:	1. Water quality and flow of spring *Comment provided by J. Dabrowski:* The spring flow originates from the slope. As the spring is at a higher elevation than the development area, its flow is very unlikely to be impacted. The only alteration in flow would be due to intercepted stormwater off the slope in the proposed swale at the base of the slope which directs water in the general vicinity of the man-made pond (not the spring). This surface runoff (if any actually occurs) will have zero pollutants (washed down the slope). The spring and associated pond are very small and are certainly not connected to any surface water or wetlands on neighbouring properties. There are no **risks to water quality** of the spring. The entire development and associated wastewater irrigation is located at a lower altitude. While the water source for the spring is the slope above it, which will not be disturbed in any way. The **dependency of wildlife** on water is acknowledge through the proposed 20m wildlife corridor which incorporates the spring. No hydrological modifications are possible for the spring, and if anything, the pond may gain some additional water from the slope, as directed by the swale. Therefore the value of the spring as a water source for wildlife is preserved in the proposed layout along with mitigation measures to protect this area in both the construction and operational phases. In terms of **downstream effects** there will firstly be no change in flow reaching the spring as the sloped and vegetated area is not being developed. Secondly, the spring is very small, and only a small amount of vegetation in immediate proximity is dependent on the high soil moisture provided. Beyond the 10m buffer there is no indication of vegetation dependent on high soil moisture. And this is certainly not the case for areas beyond the development. The site levels will be reshaped to drain toward the new ponds, and the surrounding pond catchment crest levels will be designed such that the overall

Changes in the flow reaching the spring may reduce soil moisture levels in areas beyond the development, putting vegetation under stress and increasing the risk of die-off, which would further disrupt the area's ecological stability. - No use of water from the spring can be permitted for human consumption, irrigation or any other potential or perceived requirements. 2. Aquifer/groundwater Impact: - The aquifer/groundwater has not been sufficiently researched, and there is no mention of the periodic wet conditions typically experienced in October and November. There are concerns about the potential risks of polluting the aquifer/groundwater if the greywater used for irrigation is not properly treated or monitored. Questions remain regarding who will monitor and report on the quality of the greywater, as developers or homeowners may have conflicting interests. 3. Quality of Greywater for Irrigation - Nutrient and Pathogen Introduction Risks: Irrigation using treated wastewater may still introduce residual chemicals or pathogens into the spring or surrounding ecosystems (groundwater), disturbing sensitive species and affecting biodiversity. - Groundwater Seepage and Contamination: The close proximity of treated wastewater irrigation to the spring increases the risk of wastewater contaminating the spring, leading to long-term environmental impacts. There is a high likelihood that treated effluent discharge, especially during heavy rainfall or flood events, could carry pollutants	site flood storage volume is not reduced from that of its current natural state. The site will continue to serve as a soakaway (Poise Engineering). The aquatic specialist stated that as the groundwater level was substantially deeper than this (refer to geotechnical report), and no wetland / estuarine vegetation was observed at the soil surface, it is concluded that no estuarine or wetland habitat could form at the site All the detention ponds will also be downslope from the area of the spring. It is therefore a physical impossibility that any flooding of detention ponds will result in contamination of the spring (Poise Engineering, Appendix 2). In addition to the 10m buffer around the pond, a 20 m wildlife corridor be established along the base of the steep slope which is continuous with neighbouring properties and remains unfenced. The purpose is to provide animals with sustained access to water and opportunities for movement in areas of low gradient. This also protects the slope base in terms of groundwater recharge which is an important function of this zone. Water will not be taken from the spring or discharged into the stream and is mitigation measures in the aquatic report (Appendix 3). Groundwater recharge occurs over a broad region rather than being site-specific, and considering the implementation of effective stormwater and infiltration management strategies, the development is not anticipated to significantly diminish the natural recharge of the aquifer. Instead, with proper planning and mitigation, it can coexist with the surrounding hydrological system while ensuring sustainable groundwater availability (DHS Groundwater, Appendix 20). Comment from DHS Groundwater on the **recharge of the spring**: The spring is situated upstream/upgradient of the proposed development, with recharge primarily occurring from the higher surrounding topography to the north of the site. Additionally, it is important to note that recharge is not confined solely to the development site but rather occurs across a broader regional area, further reinforcing the natural sustainability of the spring.

into the aquifer/groundwater and disrupting its natural state. Specific measures need to be put in place to ensure that the retention ponds and irrigation systems do not contribute to water pollution during and after the construction phase. It is imperative that treated water meets the necessary standards - Monitoring and Enforcement: Clear protocols need to be established for monitoring and managing water quality, particularly concerning treated effluent. Who will be responsible for ensuring that water quality standards are upheld, and what actions will be taken if pollution or contamination is detected? It is essential to involve an independent ECO for ongoing monitoring during both the development and operational phases, as the interests of developers and homeowners may not always align with environmental protection goals. Stringent water quality controls should be enforced, with regular monitoring protocols implemented, as recommended in the WULA report (monthly testing with results sent to BOCMA and Bitou Municipality) to protect the health of the surrounding environment for the duration of the on-site package plant being operational. Within the Environmental Management & Maintenance Programme (EMMPr), an ECO should conduct regular audits of the water treatment plant twice a year. This monitoring process should be ongoing throughout the life of the estate to ensure that all environmental safeguards are effectively maintained. Approval conditions should require the HOA constitution to implement and fund these monitoring and reporting measures, ensuring that the Developer/Applicant does not become the sole party responsible during the operational phase. 4. Safety for Wildlife Around Retention Ponds:	Given this widespread recharge zone, it is highly unlikely that the proposed development will have any measurable impact on the recharge capacity of the spring. The hydrological system supplying the spring is largely independent of localized land-use changes, and no significant alterations to groundwater flow patterns or infiltration rates are expected as a result of the development. Furthermore, mitigation measures and responsible site management as stated within the POISE Engineering Report and Geohydrology Report will ensure that surface runoff and groundwater flow dynamics remain unaffected, thereby preserving the natural recharge function of the spring and maintaining its long-term ecological and hydrological integrity. 2. Aquifer/groundwater Impact: Refer to the Poise Report Paragraph 5.4.2. Groundwater monitoring will be undertaken and effluent quality will be tested on a monthly basis. Permanent groundwater sampling wells will be installed, strategically positioned for the purposes of regular monitoring of the quality of groundwater which has been subjected to irrigation infiltration. Should it be required, excess effluent will be discharged to the stormwater infiltration ponds system. This will be environmentally acceptable, the effluent being to DWAS Special Limits quality. The aquatic specialist report states the following: Plettenberg Bay where similar circumstances have arisen (ie. Residential development with no municipal wastewater treatment capacity available, with proposed irrigation of treated wastewater) the recommendation has been to: - Install two groundwater spikes or wells at 8-10m depth to monitor groundwater quality. These should be located at least 200 m apart and provide easy access during construction and operational phases of the development.

- Safety to wildlife around the proposed ponds needs to be carefully considered, as this could pose a direct risk to the local fauna.	- Wells must not be located in any areas of natural vegetation, rather opting for locations in previously disturbed grassy areas. - Samples must be collected pre-development to determine baseline water quality (at least once/month over 3 months), to monitor possible impacts over time. Samples should be analysed from the start of construction onwards and be submitted for analysis on a monthly basis. Parameters for analysis should be aligned with those indicated in the DWS general limits. Water chemistry must not vary by 10% of the background levels established through baseline sampling. If sampling shows indications that eutrophication of the groundwater is occurring for 3 months consecutively, then an alternative to irrigation with treated wastewater must be found. - Water samples must be submitted to BOCMA, the Bitou Municipality and reviewed by an aquatic ecologist on a quarterly basis for at least two years from commencement of the development (Aquatic report). In order to effectively monitor and protect groundwater quality and levels, the installation of piezometers is crucial. It is recommended that three monitoring piezometers be strategically installed within the vicinity of the proposed development. These piezometers should be installed to a depth of 10 meters below ground level (mbgl), with one placed up-gradient of the proposed development (to monitor background groundwater quality) and two placed down-gradient (to track any potential movement of contaminants). Additionally, a fourth piezometer should be placed adjacent to the wastewater treatment plant (WWTP), particularly near the underground sewage storage tank, as this is a critical area for potential contamination. The placement of these piezometers will provide comprehensive coverage for groundwater monitoring across the site, both prior to and after construction. To track changes in groundwater quality, water levels and chemical parameters should be recorded monthly from each of the installed piezometers. Additionally, effluent quality should also be regularly tested to assess the potential impact of the wastewater treatment plant (WWTP). Table. Proposed Monitoring Requirements.

Class	Parameter	Frequency	Motivation
Physical	Static groundwater levels	Monthly	Groundwater recharge, flooding risk, temporal variation
Chemical	Faecal Coliforms, COD, pH, Ammonia as Nitrogen, Nitrate/Nitrite as Nitrogen, Chlorine as free Chlorine, EC, Orthophosphate as phosphorous, Fluoride, Soap oil or grease, Major ions and trace elements.	Monthly	Changes in chemical and microbial composition may indicate areas of groundwater contamination and be used as an early warning system to implement management/remedial actions.

The data should be reviewed by a geohydrologist on a quarterly basis to ensure that no contamination is occurring and that groundwater quality remains within acceptable limits.

Develop and implement a response plan for immediate action in case of contamination detection (DHS Groundwater report, Appendix 20).

3. Quality of Greywater for Irrigation

Comment provided by J. Dabrowski: treated wastewater is to be irrigated in the main development area, and will not be irrigated anywhere near the spring or pond as they are in the wildlife corridor. The risk of **introducing pathogens** to the pond or spring is therefore no more than previously, when horses were defecating in and around the pond.

	The sandy unsaturated zone effectively reduces the movement of biological contaminants, significantly limiting their potential to reach groundwater. However, it provides minimal resistance to chemical contaminants, allowing them to migrate more easily and increasing the risk of groundwater contamination (Appendix 20). This underscores the need for additional protective measures to manage chemical pollutants. Thes **groundwater contamination preventative** measures are discussed in point 2 and 8 above (DHS Groundwater). The spring and associated pond are located north of the proposed development area in the green corridor. Treated wastewater will be irrigated in gardens and potentially concentrated in the stormwater attenuation ponds which are all at a lower elevation than the natural pond. It is impossible that the treated wastewater can move against gravity to potentially flow into the natural pond. See Fig. 16 in the Aquatic Specialist report which indicates 0.5 m contours at the site. Furthermore, the spring is sustained by water from the sloping, vegetated area above, which will not be developed. Therefore, it is constantly replenished with clean water. All the detention ponds will be downslope from the area of the spring. It is therefore a physical impossibility that any flooding of detention ponds will result in **contamination** of the spring (Poise Engineering). **Enforcement** will be through the DWS is the competent authority which enforce that legislation are followed, hence the need to apply for a WUL with all the relevant specialist research done to ensure that the standards of the water uses relevant to this application are enforced and followed. An ECO will be present during construction and operational phase will have conditions set out in the licence which the property owner needs to adhere to and ensure that they are compliant. The DWS also do regular checks on licensee properties to audit compliance to the license conditions. **Groundwater monitoring** will be undertaken and effluent quality will be tested on a monthly basis. Permanent groundwater sampling wells will be installed,

	strategically positioned for the purposes of regular monitoring of the quality of groundwater which has been subjected to irrigation infiltration. Should it be required, excess effluent will be discharged to the stormwater infiltration ponds system. This will be environmentally acceptable, the effluent being to DWAS Special Limits quality (refer to the Poise Report (Appendix 2). paragraph 5.4.2). 4. Safety for wildlife around retention ponds *Comment provided by J. Dabrowski:* The mitigation measure proposed to minimise the risk of pets to wildlife is to fence off the development from the wildlife corridor. Therefore, apart from smaller wildlife, larger mammals will have no access to the ponds. Smaller, more mobile animals such as snakes, amphibians and birds will likely utilise the ponds as habitat and only those resilient to the water quality present would colonise this habitat in the first place.
Plettenberg Bay Ratepayers Association (Appendix 11)	
'Stuart Comline' comline@icon.co.za 0836545449 The Plettenberg Bay Ratepayers and Residents Association ("Association") represents the residents and ratepayers within Bitou Municipality and is concerned with orderly and sustainable urban development within Bitou Municipality. This Association objects to the granting of the Water Use licence and the proposed residential development on Matjesfontein 304 Portion 91 ("Site") on the following grounds; 1. **Geomorphic, Physical and Aquatic Properties of the Site**.	1.1 As per the Poise Engineering report (Version 7, January 2025), the site is situated approximately 3 km east of the eastern bank of the Keurbooms River Estuary. The site falls outside of the 1 in 100 year floodline which is indicated in the Keurbooms and Environs Local Area Spatial Plan (KELASP; 2013) and the Keurbooms-Bitou Estuary Management Plan (KBEMP). The 1 in 100 year floodline reaches approximately 30m from the southern boundary of the site and is effectively stopped by the Keurboomstrand Road. The road is at a height of 3.65 mamsl which effectively creates a barrier between the site and the floodline which is estimated at 3.2 mamsl. Therefore, while the site is undoubtedly low-lying it is not in any mapped floodlines. As a precautionary measure, the minimum floor level of each stand will be raised to 4.0 mamsl. The 1 in 50 year floodline is of no significance to the site, terminating approximately 0,95 km west of the site.

1.1 The Aquatic Report and Geotechnical Report set out the argument that the site is only marginally close to the 100 year flood line, yet it is mostly below the 5m amsl isoline. 1.2 The same reports however state that the site is within an "Estuarine Functional Zone", and also that the sediments excavated in the test pits are of an estuarine origin. Thus it is established that in the recent geological past this area was under water in an estuary. This is supported by an 18th century map of the Bitou area which shows a lake in the area, some distance east of the current course of the Keurbooms river, towards the area of the Site. Furthermore, Figure 1 in the Application's Summary Report confirms that this area is within the Keurbooms river flood plain. 1.3 Although regulations refer to the 100 year flood line, they do not take into account recent changes in weather patterns, which are likely to persist. As is apparent, extreme weather conditions of increased frequency and intensity, be they droughts or floods, are becoming more common, both globally and particularly in South Africa. As a result, the unprecedented record rainfalls in many areas are now causing widespread flooding, with attendant loss of property and life. Similarly, in living memory, there have been significant changes in the position of the outflow channel of the Keurbooms river at the river mouth and have caused flooding of the Keurbooms flood plain in recent years. This flooding extended along the valley towards the Site. Accordingly, it is not prudent to support a housing development in this potentially high risk environment. 1.4 The abovementioned reports make little mention of deeper aquifers that may be a source of potable water, which are common in the substrata in the Bitou area. This is a	1.2 The proposed development areas is indeed located in the estuarine functional zone which is mapped according to the contours (5 m.a.m.s.l.) and not the actual habitat present. Ground-truthing of the site by the aquatic specialist confirmed no estuarine habitat present in remnant vegetation at the site 1.3 As per the Poise Engineering document, the site is situated approximately 3 kilometres east of the eastern bank of the Keurbooms River Estuary. The site falls outside of the 1 in 100 year Estuary backwater floodline. The Aquatic specialist acknowledge climate change could cause minor flooding in the future, but propose that SUDS stormwater management principles are adopted for this development to mitigate this impact (e.g. raised floor level of the units). No actual examples or evidence of serious flooding have been provided by I&APs for this site. On-site flood mitigation (in case of severe storms / future climate change) include 3 stormwater attenuation ponds and raising the ground floor of every dwelling to at least 4mamsl. The site is 'last in the property line' in terms of low-lying areas east of the Keurbooms River, and would therefore be impacted last if floodwaters ever pushed beyond previous flooding (which only reached the Dunes). 1.4 Deep aquifer contamination GEO The deeper aquifer underlying the site is composed of the Kirkwood Formation and the Gydo Formation, both of which are not known for significant groundwater potential. Groundwater within these formations is typically highly saline and non-potable, making it unsuitable for most uses. In contrast, usable groundwater within the project area is primarily found in the shallow, unconsolidated sandy aquifer, which serves as the main source of groundwater within the broader proximity of the site. Despite the limited groundwater potential of the deeper aquifer, it remains critical to implement the recommended mitigation measures to prevent any possible contamination from seeping through the shallow aquifer into the deeper aquifer. This precaution is necessary to protect any ecosystems that may be dependent on deeper groundwater reserves.

concern, as all of the flat topography of the site, and its minimal elevation above sea level, along with the possibility of ponding, the stated permeability of the soil and increase in storm water run-off once the Site is developed, combined with the proposed high risk waste water system on site, may pose a risk of contamination into any underlying aquifers that may be a valuable future source of potable water.	Early detection and prompt remediation of any potential contamination are essential for groundwater conservation. Establishing a comprehensive monitoring system and adhering to strict mitigation protocols as outlined within the POISE Engineering Report and Geohydrology Report will help ensure that both the shallow and deeper aquifers remain protected, safeguarding environmental sustainability and water resource integrity in the long term.
2. Characteristics of the Site Development	
2.1 The proposed development plans to implement an on-site "Bio sewerage package". No assurance is provided as to the reliability and efficiency of the system. As set out above, this should not be approved due to the increased health and environmental risk that it could impact on this proposed development, the surrounding properties and the natural environment. Further, there is no indication as to when the development on this Site would be connected to the municipal waste water system. This eventuality would rely on the Ganse Vlei Waste Water facility being expanded, for which there is no certainty provided as to when, or if, this will happen.	2.1 Bio Sewage Systems have been established for over 20 years and have over 800 plants, of size ranging from 5 to 200 m3 per day, operating successfully in Southern Africa (Poise Engineering, Appendix 2). See the Bitou Municipal letter (Appendix 5) allowing the temporary wastewater treatment plant until such time when the upgraded municipal sewer line will allow the development to tie into the main bulk sewer system.
2.2 This development will impair the natural visual aspect of the "greenbelt" character of the area. Most residential developments in this immediate area are set in wooded greenbelt space, whereas the area of the proposed development, currently a pastoral open space, when developed into housing, would visually detract from the aesthetic aspects and character of the area.	2.2. Comment noted, but this is not part of the water uses applied for in the WULA. According to Planning Space Town and Regional planners, it is important to note that this development shares significant similarities with other developments in the area, such as Milkwood Glen, and is unlikely to have a profoundly adverse impact on the character of the area. The development neither introduces exceptionally high densities nor a land use that is out of sync with its surroundings; it essentially represents a continuation of the prevailing housing landscape.
3. Impact on Development in Bitou Municipality	3.1 Comment noted. Applications for Water Use Licenses require a letter from the municipality to confirm whether bulk services will be available for the development, as an application cannot be processed unless the municipality can supply services or agree to an alternative (Appendix 5) with the developer for services for the proposed development.
3.1 The proposed development is by no means unique or the only planned development in the area, as there are at least	3.2 The bulk services is not directly related to the water uses applied for in this application. Rainwater harvesting and greywater use for toilets in the development will reduce the volume of potable water used from the municipality (Poise Engineering, Appendix 2). The Bitou Municipality Engineering department provided a letter to confirm that:

another 12 similar housing estate developments, with some 1400 dwellings, planned, or in application, or in development in the Bitou municipal area. This does not include plans for some 4000 new dwellings in high density suburbs, which are on various government housing plans for the future. All of these developments will require services and resources, and particularly water, from the Bitou municipal infrastructure. Quite simply, adequate infrastructure and long term water storage capacity for all of these developments does not exist. Furthermore, the increasing constraints on government expenditure are likely to delay any of the required capital infrastructure projects on which this proposed development relies.	'The water treatment plant currently has sufficient capacity. The GLS report confirms that the Matjiesfontein reservoir currently has sufficient capacity to accommodate the development. The bulk water supply to the reservoir is however inadequate and, to meet current demand and that of projected future developments, upgrades are required to the bulk watermains over the full length from the Town Reservoirs to the Matjiesfontein Reservoir. Implementation of partial upgrade of the bulk watermains is in the planning stage'.(Appendix 1 and Appendix 7).
3.2 This Application contemplates obtaining water from the Matjesfontein bulk water distribution system, but acknowledges that there is insufficient capacity in the system for peak demand. The application superficially addresses this aspect, but fails to address that this is already a major concern for Bitou, as there are severe limitations in Bitou's available water resources and on the town's bulk storage capacity. Despite the fact that plans have been in place for many years to augment the towns water storage capacity, there is no concrete plan underway, funded or committed for future development. Any prolonged drought or breakdown in the Keurbooms river pumping system would negatively affect Bitou's water supply. This Association has proposed that no further developments should be approved until the bulk water storage system has been upgraded	Comment provided by Planning Space is that the Service Level Agreement Bulk services constraints will be addressed in the Service Level Agreement between the applicant and the municipality, where the municipality will only support a certain number of houses at a time, i.e. a phased development approach as upgrades to the bulk services is done. The Municipality's final approval will therefore be subject to signature of the service level agreement.
4. Conclusion	4.1 No flooding has been formally recorded on the site. Steep areas to the north of the proposed development area are not going to be developed and will be retained in a natural condition. No more runoff will be generated from this area than under pre-development conditions. Flood Risk is therefore unlikely to be exacerbated on the site through development of the residential housing complex. This is further supported by the high permeability of soils on the site, and SuDS measures that have been incorporated into the stormwater management plan which include the use of permeable paving and grass blocks for the main and secondary internal roads respectively. Three stormwater attenuation ponds (P1, P2 and P3) will collect runoff from roads and roofs. If the natural pond on the northern section of the site were to overflow during flood conditions it is planned to overflow via the road into stormwater P1 (See Eng Drawing DWG23/G210). The previous owner (Mr. David Steele) whose grandfather purchased the property (and neighbouring portions which were collectively farmed) in the 1950s stated that no flooding has ever occurred in his time on portion 91/304 (*pers. comm*. 29 January 2025).
4.1 This Association recommends that this Application should not be approved on account of the fact that it is situated in	

an area that could be prone to flooding, with the attendant possibility of loss of property and/or life. 4.2 It is also considered that the environmental risks outweigh any economic or residential development benefit. 4.3 It simply does not make sense to destroy the current pastoral greenbelt area for the development of a high risk urban development, when there are many other existing and planned housing developments, with less risk, in the Bitou area. 4.4 The Application does not take into account the severe restrictions that are imposed on the Bitou municipal resources and infrastructure with the expanding developments in the area. In particular, the Application does not present any realistic plans or timetable as to how it will ever be connected to the municipal water supply and wastewater systems. 4.5 This application should not be approved.	The Development's stormwater management plan mitigates the impact of flood conditions and ensures that the Development will not negatively impact on surrounding properties under flooding conditions (Poise Engineering, Appendix 2). 4.2 According to the Keurbooms-Bitou Estuarine Management Plan the property and proposed development area are located above the 100-year floodline and outside of any ecologically sensitive areas associated with the estuary or Tshokwane wetlands. The latter point was confirmed during the site assessment (Aquatic specialist). 4.3 See comment (Appendix 6) from Bitou Spatial planning email confirming that the proposal is considered to be consistent with the relevant forward-planning policy for the area, and is therefore supported from a Spatial Planning perspective. 4.4 Bitou municipality provided a letter (Appendix 1 and Appendix 5), where the bulk services are addressed for the development. The development will also make use of greywater use and rainwater harvesting to reduce the volume of water needed from the municipality. A Bio sewage plant will be used to treat water to GA standards, until such time when it can be connected to the municipal sewer system. 4.5 Noted.
Cape Nature (Appendix 12)	
Megan Simons 027 87 087 3060, msimons@capenature.co.za According to the Western Cape Biodiversity Spatial Plan (Pool-Stanvliet *et.al*. 2017)1 the property has Critical Biodiversity Areas (CBA 1: Forest, Terrestrial, Aquatic; CBA 2: Forest, Terrestrial). The development footprint is within the Keurbooms Estuarine Functional Zone (Nel *et al.* 2011)2,	1. The aquatic and terrestrial CBA on the site have been protected through implementing the 20m corridor which also includes the pond. The principles of maintaining CBA in a near-natural condition are therefore supported, and the idea is to ensure the area remains well connected to neighbouring properties too. 2. EcoRoute commented that DFFE (Forestry Western Cape) are included in the I&AP register and are also a commenting authority for the Basic

which is poorly protected (Van Deventer *et al.* 2019)3. Furthermore, the property is within the National Strategic Water Source Area for surface water for the Tsitikamma region and serves as a water source protection for the South Eastern Coastal Belt. According to Vlok and de Villiers (2007)4 fine scale vegetation maps the area is described as Sedgefield Coastal grassland and Keurbooms Thicket-Forest. According to the National Biodiversity Assessment (Skowno *et al*. 2018)5 the vegetation units are **Endangered** Garden Route Shale Fynbos (NEM:BA, 2022)6. Following a review of the Water Use Licence Application and Aquatic Biodiversity Impact Assessment. CapeNature has the following comments: 1. The proposed development must be guided by the management objectives of CBAs s as set-out in the WCBSP handbook (Pool-Stanvliet *et al.* 2017). The applicant is therefore reminded of the importance of maintaining CBA connectivity and ensuring that the scope of work does not negatively impact these CBAs across the landscape. 2. In terms of section 15(1) of the National Forests Act7, no person may cut, disturb, damage, or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree except under a license granted by the Minister. Therefore, CapeNature recommend the department of Forestry, Fisheries, and Environment provide comments for this application. 3. The property has coastal habitat which is an element of ecological infrastructure, and these areas should remain in a functional structure and composition for biodiversity. These areas play an important role in landscape	Assessment process running in parallel with the WULA. They will be consulted with throughout the NEMA process. 3. The proposed development is entirely within areas mapped as secondary or pasture that has low biodiversity value and sensitivity. Landscape connectivity will remain in the north of the property through a 20m wildlife corridor proposed to be established along the base of the steep slope. The corridor will ideally link to neighbouring properties to form a continuous habitat. The purpose is to provide animals with sustained access to water and opportunities for movement in areas of low gradient. 4. While SWSAs cover large areas, they generally relate to steep and mountainous areas which generate and maintain high runoff volumes which sustain lower-lying ecosystems and various land uses. The proposed development is on very low-lying, flat terrain and therefore provides no real contribution to the maintenance of water quantities or quality in the SWSA. 5. An Alien Invasive Plant Control Programme forms part of the EMPr. AIP clearing will be systematically carried out in order to eradicate and monitor of the spread of invasive alien species. 6. The current layout can be managed for fire in consultation with the Southern Cape Fire Protection Association. It is not intended to use flammable building materials. The open space areas and road network through the development should provide sufficient defendable spaces, and firebreaks can be considered, in consultation with the SCFPA. *Please refer to the Terrestrial Biodiversity, Plant and Animal Assessment-* The preferred layout was based on the following, and makes sufficient use of disturbed areas:

connectivity, as well as supporting the functioning of PAs or CBAs. These corridors represent the best option for promoting resilience to climate change and the persistence of biodiversity as they provide pathways for the movement of plants and animals in response to environmental change. They also support the natural movement of species between populations to ensure population viability (Pool-Stanvliet et.al. 2017). 4. The property is within an important hydrological area and should be managed to maintain and improve the current condition. The SWSA for the Tsitsikamma region is of national importance and their ecological functioning must be protected and maintained (Le Maitre et al. 2018)8. Approximately 34.4% of the Tsitsikamma SWSA is conserved within protected areas. Therefore, conserving the remaining areas and rehabilitating degraded areas are vital South Africa's water resources. 5. Eradication of invasive alien plant species are of high priority and alien plant species that occur outside of the proposed footprint must be cleared during the alien clearing phase. In this way, more alien plant species can be removed. The eradication and monitoring of the spread of invasive alien species should follow the National Environmental Management: Biodiversity Act (Act No.10 of 2004)9. 6. In terms of the development layout a clustered development is preferable as this would allow for better management of ecological processes such as fire. The Fynbos Forum Guidelines10 references that the impacts of developments must be minimised, buildings should be clustered within fire-free zones and protected with firebreaks. Furthermore, flammable building materials must be avoided.	• The proposed development will be restricted to the lowland areas that were previously cultivated. The forest areas are therefore outside the proposed development footprint. On the basis of the presence of natural habitat within a CBA1 area and within a listed ecosystem, it is verified that the site occurs partially within an area of VERY HIGH sensitivity with respect to the Terrestrial Biodiversity Theme. These areas are not affected by the proposed development. • The lowland part of the site is not considered to be good habitat for any of the animal species flagged for the site. • The impact assessment determined that the impact of the proposed development has Very Low significance on vegetation, protected trees, and animal species of concern. • The proposed development is entirely within areas mapped as secondary or pasture that has low biodiversity value and sensitivity. The development is therefore supported on condition that forest habitats on the property are fully protected 7. The owner has agreed to join SCFPA. 8. A Conservation Management Plan will be included with the Basic Assessment Report as part of the NEMA process for management of the Open Space areas and wildlife corridor. 9. Recommended fencing measures by the Aquatic Specialist (Appendix 3) were updated for the corridor as follows: - A perimeter fence must be installed along the 20m wildlife corridor north of the development area. It should not extend into the 20m corridor. - Clear vu type fencing would have the benefit of excluding pets (cats and dogs) from the wildlife corridor area where they could deter or kill wildlife large and small. This type of fencing is recommended.

7. In terms of section 12 (1) and 2 (a) of National Veld and Forest Act11 adequate firebreaks must be prepared and maintained around the property to reasonably prevent the spread of unwanted fires in the area. CapeNature recommend that the owner, if not registered yet, apply for membership with the Southern Cape Fire Protection Association (SCFPA). Furthermore, a fire management plan must be compiled. 8. A conservation management plan must be developed for the open space area to the north. Furthermore, how will the pond and 10 m buffer (including the vegetation) be protected in the long term? 9. Fencing was not recommended along the green corridor and the proposed residential development. So, how will human-wildlife interactions/ conflict be managed? 10. In terms of the proposed development CapeNature reminds the applicant that rehabilitation of degraded areas is also an option in the mitigation hierarchy which should be considered to compensate for impacts. **In conclusion**, CapeNature needs to review all alternatives as the Aquatic Biodiversity Impact Assessment only discussed the preferred site development plan. Furthermore, we require assessments for the Terrestrial Biodiversity (i.e., plants, animals, and the impact on the CBAs). CapeNature reserves the right to revise initial comments and request further information based on any additional information that may be received.	- Fencing should not extend into the corridor or along the neighbouring boundaries as the aim is to have an inter-connected corridor that extends across properties. 10. Restoration of secondary vegetation within the wildlife corridor will be undertaken and is addressed in the EMPr

Public / Local residents I&AP's per email	
Cathy Duncan, happy21hippo@gmail.com Klein Vredendal, 30 Palmboom Road, Newlands 7700 WhatsApp Cell: 0839555747 Email: happy21hippo@gmail.com I wish to object to the proposed development as soon Keurbooms will merge with Plettenberg Bay. The wonderful natural beauty and landscape of the countryside which is home to the wild need not be covered in concrete. High density housing doesn't belong here - no one would object to a couple of sensitively designed houses but a development of 72 units will alter a rural paradise and threaten ground water and all creatures that depend on the natural environment.	The housing density has been reduced from 72 to 60 houses to accommodate a wildlife corridor between developments. A WUL is applied for to enforce mitigation measures in protecting water resources on the property and ensure the best possible co-existence between natural features and human dwellings.
Johann Kritzinger, jj.krizzi@gmail.com Stop the money hungry developers from this , there is not enough water as previous studies have shown	See the Bitou Municipality Bulk services supply letter (Appendix 1).

Other Residents and Public Template type emails **(As per introductory page, responses to this section are provided per topic following all the email comments)**
COMMENTS
mattia tassone' mattia.tassone@hotmail.com I am writing to express my strong objection to the proposed development on Portion 91 of Farm Matjesfontein 304, Plettenberg Bay, based on the detrimental impact it is likely to have on the value of surrounding properties. As a property owner in the Keurbooms area, I have significant concerns that this development could negatively affect the desirability, character, and market value of our homes, which are intrinsically tied to the pristine natural environment and scenic qualities of the region. 1. Impact on Scenic Value and Sense of Place The proposed development entails constructing 73 units at a density that is highly incongruent with the low-density, rural character of the surrounding area. The Keurbooms Road, a scenic route cherished for its visual appeal and tranquil setting, will be compromised by the visual

prominence of high-density housing. Even the suggested 10-meter vegetation buffer, as proposed in the draft Basic Assessment Report (BAR), is unlikely to sufficiently obscure the development and mitigate these visual disruptions. This diminishment of scenic quality can severely affect the perceived exclusivity and appeal of nearby properties, consequently leading to a decline in property values.

2. Socio-Economic Implications and Tourism Concerns
   Property values in this area are also influenced by tourism, a key economic driver that attracts visitors due to the region's natural beauty and quiet charm. Any negative impact on the aesthetics and sense of place will have a ripple effect, discouraging tourism and potentially affecting the rental income of property owners who rely on seasonal visitors. Estate agents and market analysts have noted that developments altering the natural landscape or placing strain on local infrastructure tend to depress property values in areas highly dependent on tourism

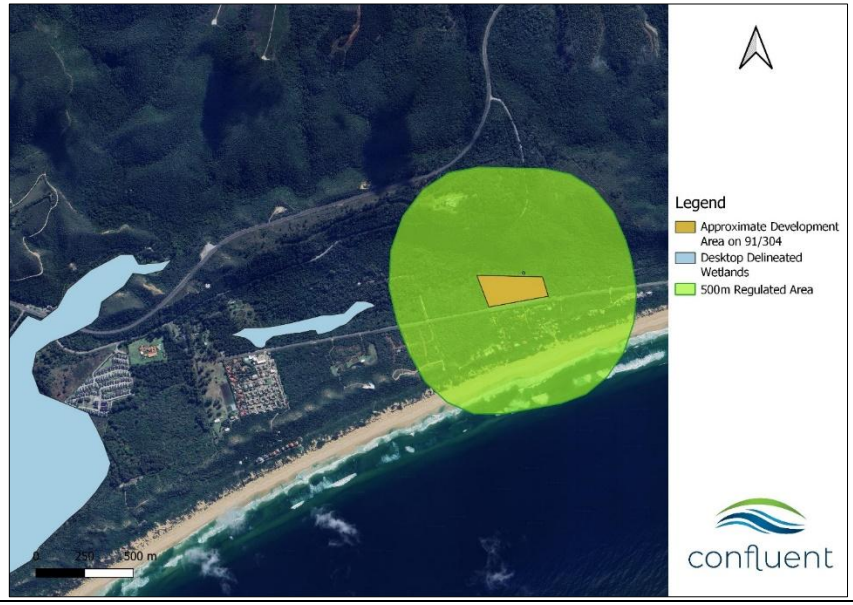
3. Inadequate Assessment of Property Value Impact
   The draft BAR has not incorporated a comprehensive socio-economic impact assessment, despite explicit requests from the Department of Environmental Affairs and Development Planning (DEADP). This omission is particularly troubling, as there has been no detailed analysis of how the proposed development could affect the local real estate market. Ignoring the financial interests of existing property owners, who may suffer significant economic losses, fails to meet a responsible planning standard.

4. Concerns over Infrastructure Strain and Service Capacity
   The proposed increase in population density will strain local infrastructure, such as roads and water supply, which are already under pressure during peak tourist seasons. The GLS Capacity Analysis indicated that the bulk water and sewer systems are inadequate to support additional development without significant upgrades. Delays or failures in these necessary improvements could lead to practical inconveniences, further reducing the desirability and value of properties in the vicinity.

5. Flood Risk and Environmental Vulnerability
   Another critical factor affecting property values is the increased risk of flooding. The site lies partially within a flood-prone area, and the introduction of impermeable surfaces will exacerbate stormwater management challenges. Prospective buyers are often deterred by properties near developments that could amplify flooding risks, especially in regions where climate change is intensifying these hazards. Conclusion The proposed development threatens to disrupt the scenic, environmental, and infrastructural balance of the Keurbooms area, posing a direct risk to property values. Without a detailed, independent assessment of the potential economic fallout on the real estate market, it would be irresponsible to proceed with this project.

I urge the authorities to reconsider the scale and nature of this development to safeguard the financial and communal interests of existing property owners.
Regards, Mattia Tassone

Peter Pyke:	The need for a WULA is due to the development itself being in the regulated area of a watercourse, the spring, as defined in GN4167. The proposed package plant and possible irrigation with the treated water for the development, also necessitates

Why are you applying for a water use licence for this development?	an application for a 21(g) and 21(e) water use under the National Water Act (NWA), as it is the disposal of waste in a manner which may detrimentally impact on a watercourse, in this case the spring. No other watercourses as defined in the NWA are located within 500 m of the development area. Refer to the map below (Figure 12 of the aquatic specialist report) which shows the development area in relation to mapped wetlands. The wetlands indicated west of the site were identified by the freshwater consulting group and presented in the KELASP. 

David Allardice, david@splintersa.com
0836411337

I am writing to formally object to the Water Use License Application for the proposed housing development on Portion 91 of Farm Matjes Fontein 304, specifically concerning the planned sewage treatment plant. I have significant concerns regarding the potential environmental, operational, and community impacts of this facility

Firstly, it appears that this type of sewage treatment plant has not undergone sufficient research or testing, raising serious doubts about its

reliability. Similar systems in the area, such as at the Keurbooms Angling Club, have frequently encountered problems, including unpleasant odors and overflow incidents, which suggest that the technology may not be suitable for this location

The operation and maintenance of such a plant require specific technical skills, which are limited in supply locally. Without qualified personnel, the risk of malfunction increases substantially, which could lead to health and environmental hazards for the community. This risk is heightened by the plant's close proximity—approximately 100 meters—to a groundwater source and natural spring. Any failure or overflow would likely contaminate these vital water sources, with potentially devastating effects on both human health and local wildlife.

In light of these concerns, I strongly urge you to reconsider granting approval for this sewage treatment plant. Its location on the horse field and its potential risks are unsuitable for our community, and the likely negative impacts warrant thorough evaluation before any decision is made.

Thank you for considering this objection seriously.

Chiara Mauri, chiaramauri@hotmail.it

I am writing to express my strong objection to the proposed development on Portion 91 of Farm Matjesfontein 304, Plettenberg Bay, based on the detrimental impact it is likely to have on the value of surrounding properties. As a property owner in the Keurbooms area, I have significant concerns that this development could negatively affect the desirability, character, and market value of our homes, which are intrinsically tied to the pristine natural environment and scenic qualities of the region.

1. Impact on Scenic Value and Sense of Place

2. The proposed development entails constructing 73 units at a density that is highly incongruent with the low-density, rural character of the surrounding area. The Keurbooms Road, a scenic route cherished for its visual appeal and tranquil setting, will be compromised by the visual prominence of high-density housing. Even the suggested 10-meter vegetation buffer, as proposed in the draft Basic Assessment Report (BAR), is unlikely to sufficiently obscure the development and mitigate these visual disruptions. This diminishment of scenic quality can severely affect the perceived exclusivity and appeal of nearby properties, consequently leading to a decline in property values.

3. Socio-Economic Implications and Tourism Concerns

4. Property values in this area are also influenced by tourism, a key economic driver that attracts visitors due to the region's natural beauty and quiet charm. Any negative impact on the aesthetics and sense of place will have a ripple effect, discouraging tourism and potentially affecting the rental income of property owners who rely on seasonal visitors. Estate agents and market analysts have noted that developments altering the natural landscape or placing strain on local infrastructure tend to depress property values in areas highly dependent on tourism.
5. Inadequate Assessment of Property Value Impact

6. The draft BAR has not incorporated a comprehensive socio-economic impact assessment, despite explicit requests from the Department of Environmental Affairs and Development Planning (DEADP). This omission is particularly troubling, as there has been no detailed analysis of how the proposed development could affect the local real estate market. Ignoring the financial interests of existing property owners, who may suffer significant economic losses, fails to meet a responsible planning standard

7. Concerns over Infrastructure Strain and Service Capacity

8. The proposed increase in population density will strain local infrastructure, such as roads and water supply, which are already under pressure during peak tourist seasons. The GLS Capacity Analysis indicated that the bulk water and sewer systems are inadequate to support additional development without significant upgrades. Delays or failures in these necessary improvements could lead to practical inconveniences, further reducing the desirability and value of properties in the vicinity

9. Flood Risk and Environmental Vulnerability

10. Another critical factor affecting property values is the increased risk of flooding. The site lies partially within a flood-prone area, and the introduction of impermeable surfaces will exacerbate stormwater management challenges. Prospective buyers are often deterred by properties near developments that could amplify flooding risks, especially in regions where climate change is intensifying these hazards.

Conclusion
The proposed development threatens to disrupt the scenic, environmental, and infrastructural balance of the Keurbooms area, posing a direct risk to property values. Without a detailed, independent assessment of the potential economic fallout on the real estate market, it would be irresponsible to proceed with this project. I urge the authorities to reconsider the scale and nature of this development to safeguard the financial and communal interests of existing property owners

Regards,
Chiara Mau

Megan Pringle, megan@juro.co.za

As a Keurbooms/ Plettenberg bay resident and Keurbooms/ Plettenberg Bay property owner and a concerned citizen, I am against the proposed **sewage** treatment plant because:

1. It has not been properly researched

2. They are not proven to work properly

3. The necessary skills to operate and maintain it are in short supply and there is a high probability of there being overflows and bad smells, same as at the Keurbooms Angling Club

4. There is a high risk of it contaminating the ground water and natural spring located within plus minus 100m of it

I am against the proposed development because:

1. It is not in keeping with the nature of Keurbooms natural beauty, quiet residential character, and high environmental standards

2. It is against the stated development plans for this area that is actually part of the estuarine flood plain

3. It will negatively impact the values of all properties in the vicinity

4. It will set a precedent that can be repeated in other areas of Keurbooms and Plett.

Raoul Scholtz, raoul@icare4u.co.za

Concerns About the Sewage Treatment Plant and Premature Application for Infrastructure Approval

Dear Authorities,

As a resident of the surrounding Keurbooms area, I am writing to object to the proposed development on Portion 91 of Farm Matjesfontein 304. My concerns are focused on the planned sewage treatment plant, which poses significant risks to our local environment and community. Additionally, I question the appropriateness of the developer seeking approval for such a critical piece of infrastructure before building rights for the development itself have even been granted. This sequence suggests a lack of proper planning and undermines the usual process of evaluating the broader impacts of the project.

1. Premature Application for Sewage Plant Approval
   It is highly irregular for a developer to request permission to construct a sewage treatment plant before securing the necessary building rights for the development. The approval of a sewage facility should be contingent on a thorough review of the entire development plan, including its density, layout, and potential environmental impacts. By applying for the sewage plant in advance, the developer is effectively trying to bypass the proper sequence of approvals, which compromises the integrity of the decision-making process. How can the authorities consider approving a key piece of infrastructure without first confirming that the broader project has met all planning, environmental, and community requirements?

2. Potential Environmental Risks from the Sewage Plant

The proposed sewage treatment plant is planned for a location close to sensitive natural features, including a spring and wetland areas. Even modern sewage systems are not immune to leaks or malfunctions, especially in areas with high groundwater levels like Keurbooms. The risk of untreated or inadequately treated effluent entering the groundwater system could have devastating effects on local water quality, affecting both the environment and nearby properties. Given the proximity to water bodies that contribute to the Keurbooms Estuary, any contamination could disrupt vital ecosystems and harm aquatic life, impacting the overall health of the area.

3. Lack of Detailed Risk Assessment and Mitigation Plans
   The draft Basic Assessment Report (BAR) lacks sufficient detail about the potential risks associated with the sewage treatment plant. While the proposal mentions mitigation measures, these are vague and do not include specific plans for monitoring water quality, preventing leaks, or addressing potential failures. A project of this scale, in such an environmentally sensitive location, requires a comprehensive risk assessment that includes detailed contingency plans and clear guidelines for ongoing maintenance and monitoring. The absence of these critical elements raises serious questions about the viability and safety of the proposed sewage facility

4. Impact on the Character of the Keurbooms Area
   The Keurbooms area is valued for its natural beauty, quiet residential character, and high environmental standards. Introducing a sewage treatment plant, especially in the absence of an approved development plan, is out of step with the community's expectations for sustainable, low-impact growth. The visual and potential odour impacts of the facility could significantly alter the character of the area, reducing its appeal for both current residents and prospective buyers. This change is inconsistent with the careful, environmentally conscious development that has defined the region up to this point

5. Strain on Local Infrastructure and Incomplete Planning
   The developer's reliance on a temporary sewage treatment plant until municipal upgrades are completed is another point of concern. Temporary systems are often more prone to issues such as leaks and equipment failures. Additionally, there is no clear timeline or funding commitment for the necessary upgrades to the municipal system, creating uncertainty about how long the temporary facility will be in operation. This incomplete approach to planning increases the risk of environmental harm and places an unnecessary burden on local infrastructure.

   Conclusion
   The current proposal to install a sewage treatment plant before obtaining building rights for the development is premature and undermines the proper review process. The potential environmental risks, lack of detailed planning, and impact on the character of the Keurbooms area are significant concerns that have not been adequately addressed. I respectfully urge the authorities to deny the request for sewage plant approval until the full development plan has been evaluated and all necessary rights have been granted. This project requires a more thoughtful, comprehensive approach that prioritizes the health and well-being of our community and environment.

Thank you for your consideration. Raoul and Ruth Scholtz 28 Main Road, Keurboomstrand.

Cathy De Gidts, cathdegidts@gmail.com

As a Plett property owner, I am against the proposed sewage treatment plant because: the area is part of an estuarine flood plain and there is a high risk of contaminating the ground water and natural spring which is very close to where the plant is supposed to be. We don't want contamination and bad smelling odors in Plett.

We need to preserve this beautiful part of the country

Dr Dianne Marais, maraisdianne@gmail.com
Caraisdianne@gmail.com
25 Strand Street, Keurboomstrand

Concerns about the Sewage Treatment Plant and Premature Application for Infrastructure Approval.

We have been property owners in Keurboomstrand for more than 60 years and have a deep interest in the Keurboomstrand environment. We strongly object to approval being given for a sewage treatment plant which could have serious risks for our environment. The fact that this application is presented well before the rights for any development have been granted is most concerning.

This application for approval for a sewage plant is premature and very irregular and should only be submitted once the approval for the development has been acquired.

The sewage treatment plant is planned in a most sensitive area, sporting a wetland and a spring which all contribute to the Keurbooms River estuary. Contamination of these bodies with effluent could have very disastrous effects on local ecosystems.

These potential risks of the sewage plant have not been sufficiently addressed in the draft Basic Assessment Report (BAR). The impact of the sewage plant on the natural beauty of the area has also not been sufficiently addressed.

Most concerning is the developer's initial reliance on a temporary sewage treatment plant while municipal upgrades are completed which could be a lengthy process. These temporary systems often malfunction, increasing the risk of harm to the environment.

We therefore oppose the application for installation of a sewage plant until building rights are secured. There are potential risks which will have an impact on the nature of the Keurboomstrand environment and the health and well-being of its residents

Please acknowledge receipt of this letter

Berna Euler, berna.euler@googlemail.com
8 Keurbaai Estate / Keurboomstrand / Plettenberg Bay, 6600

As a Plettenberg Bay-Keurbooms resident and property owner I am against the proposed sewage treatment plant because:

Our region of Plettenberg Bay/Keurboomstrand is one of the last (!) remaining beautiful and relatively untouched coastal regions in South Africa. More and more people appreciate this and want to settle here, in whatever form.
Our region is becoming increasingly well-known nationally and internationally, so that also the number of tourists who want to stay here is also increasing dramatically.

However, this also means an exorbitant destruction of the protected nature, in which settlements such as those now planned here play a large part.

Specifically about this project I'm against this proposed development because

1. The planned development with its many units does not fit in with the surroundings or the nature of the region in any way.
2. It is a mass accumulation of houses, and it is immediately obvious that the aim here is purely to make money
3. It destroys the beauty of the remaining green areas and the peace and quiet that many people here value so much
4. Neither the water supply nor the sewage issue have been well thought out or resolved in a technically perfect manner.
5. Especially against the background of the scarcity of drinking water in the entire region, attempts are being made to circumvent the problem with flimsy solutions, at the expense of the general public!
6. The smell (and other environmentally harmful effects!) of the sewage is also a completely unresolved problem, as can already be found in the area around the Angling club.
7. The project violates the declared development plans, which envisage a floodplain in this area and not a mass residential area!
8. For all landowners and homeowners, this development will result in an extreme reduction in the value of their property.

9. If this is permitted, it will trigger a wave of projects under the banner of the 'principle of equality - equal rights for equal concerns', which will result in the final destruction of this region, which is so worthy of protection

10. I hope that this planned immense impairment and destruction of nature and our beautiful region will be reconsidered and withdrawn.

Laurian Reid, lolroebert@gmail.com

As a Plett resident I am against the proposed sewage treatment plant because:

1. The necessary skills to operate and maintain it are in short supply and there is a high probability of there being overflows and bad smells, same as at the Keurbooms Angling Club

2. Being a low lying property, there is a high risk of it contaminating the ground water and the natural spring located within proximity of the proposed plant.

Further, I am against the proposed development because:

1. It is not in keeping with Keurbooms natural beauty and it is against the stated development plans for the area which is part of the estuarine flood plain

2. It will set a precedent that can be repeated in other areas of Keurbooms and Plett

David Reid, davidvictorreid@gmail.com
David and Paula Reid, Tel. +27 83 286 7936

As a long-time holiday maker at Keurbooms and at Plett for over 40 years, I wish to register my objection to the proposed sewage treatment plant because:

1. This high density development is not in keeping with the natural beauty, quiet residential character and high environmental standards of Keurbooms,

2. This is an estuarine flood plain with natural ground water and a natural spring located close by that will become contaminated from this development

3. Experience and proven evidence has shown that there is a high probability of overflows and bad smells, for example similar to the smells and pollution from time to time of Keurbooms Angling Club and immediate surrounds

4. A project of this scale, in such an environmentally sensitive location, requires a comprehensive risk assessment that includes detailed contingency plans and clear guidelines for ongoing maintenance and monitoring. The absence of these critical elements raises serious questions about the viability and safety of the proposed sewage facility.

5. There is no evidence that this development project has been properly researched

   In conclusion, the stated benefits of such development will be self-defeating as it will destroy one of the last remaining natural forested areas of the Garden Route thereby discouraging and preventing tourists from coming to the area rather than increase tourism in the area.

   Please note that this objection has as much validity as the objection of any owner of property in the vicinity. As a frequent visitor and tourist in the vicinity of the proposed development, I have invested in holidays and spending in the area and intend to continue to do so as will the next generations of our family and friends. It is therefore just as valid that this objection is taken into account.

   Thank you for taking this objection into account.

Emma Reid, emmajreid@gmail.com
+27 (0) 649643635

I am writing to object to the proposed development on Portion 91 of Farm Matjesfontein 304. I am a resident of Keurboomstrand and am highly concerned about the sewage treatment plant that is being proposed. I see it as a major risk to our environment. I question why the developer is seeking approval for this key piece of infrastructure before obtaining building rights for the development.

My reasoning is as follows:

Premature Application for a Sewage Plant
It is irregular and concerning that the developer is applying for permission to build a sewage treatment plant before securing building rights for the project. By applying for the sewage plant in advance, the developer is essentially attempting to bypass the proper sequence of approvals, which compromises the integrity of the decision-making process. How can authorities consider approving this key piece of infrastructure without first confirming that the broader project has met all planning, environmental, and community requirements?

Impact on the Character of the Keurbooms Area
A sewage treatment plant is out of character with the area. Keurbooms is well known for its natural and largely untouched beauty. A sewage plant, with its potential scale and odors, will be highly detrimental to the neighborhood

Risk of Contaminating Groundwater and Wetlands
There is a natural spring within close proximity (100 meters) of the proposed site. In addition, the site falls within a wetland. The risk of untreated or inadequately treated effluent reaching the groundwater system could have devastating effects on local water quality, impacting both the environment and nearby properties. Given the close proximity to water bodies that contribute to the Keurbooms Estuary, any contamination could disrupt vital ecosystems and harm aquatic life, impacting the overall health of the area.

Lack of Detailed Risk Assessment Plans
The proposal lacks adequate research. A project of this scale, in such an environmentally sensitive location, requires a comprehensive risk assessment that includes detailed contingency plans and clear guidelines for ongoing maintenance and monitoring. The absence of these critical elements raises serious questions about the viability and safety of the proposed sewage facility.

In conclusion, I find this project proposal inadequately researched and inappropriate for the neighborhood of Keurbooms. Keurbooms is an environmentally sensitive area of natural beauty, and the developer does not appear to acknowledge the context in which they are working. I urge the authorities to deny the request for sewage plant approval until the full development plan has been evaluated and all necessary rights have been granted. This project requires a more thoughtful, comprehensive approach that prioritizes the health and well-being of our community and environment

Ian Marais, marais.ian44@gmail.com
Dr IP Marais, 25 Strand Street, Keurbooms Strand

I have concerns about the Sewage Treatment Plant and premature application for infrastructure approval, as this could have serious risks for the Keurbooms environment.

This application is irregular and premature as approval for the development has not yet been acquired or granted

Please note this concern and objection.

Elske van Rooyen, elske@seagullview.com
083 253 7121

As a property owner in Plett, I am writing to oppose the proposed high-density housing and sewage plant on Portion 91 of Farm Matjes Fontein 304. This development threatens the unique beauty and peaceful character of Keurbooms, which draws residents and visitors alike to its natural landscapes. This development will also impact on overseas visitors who visit the Blue Flag beaches in the area, and are important contributors to the financial health of Bitou. The plan for a sewage processing plant so close to a natural spring presents unacceptable risks to our environment,

and such facilities are often prone to failure due to limited operational expertise. This proposal would set a dangerous precedent for our community, jeopardizing property values and the area's environmental standards. Please take these concerns into account as part of the review process.

'Hylma van Rooyen' hylmavanrooyen@gmail.com

I am writing as a concerned resident of Keurbooms to strongly object to the proposed sewage treatment plant and high-density housing development on Portion 91 of Farm Matjes Fontein 304. The development and the associated sewage treatment facility would not only threaten the natural beauty of our area, but also put an immense strain on local infrastructure, which is already at its limit. The proposed site is also in close proximity to a natural spring, which heightens the risk of contamination. This development would create long-term environmental and health impacts that could permanently damage our community. I urge you to consider these concerns seriously, as this proposal is fundamentally at odds with the character and environmental standards that make Keurbooms unique.

Paul Spies, paulaspies@protonmail.com

I am deeply concerned about the potential impact of the proposed high-density housing and sewage treatment plant on the horse field in Keurbooms. This development does not align with Keurbooms' natural landscape or with its quiet, residential character. The area's existing sewer infrastructure is already inadequate, and placing a new sewage plant on site would increase the risks of environmental contamination and foul odors. Moreover, high-density housing in this beautiful area would set a precedent for further developments that could permanently alter the landscape. I ask that this development be reconsidered to protect the natural beauty and character of Keurbooms.

'Melanie van Lier' melvanlier@gmail.com

As a resident of the surrounding Keurbooms area, I am writing to object to the proposed development on Portion 91 of Farm Matjesfontein 304. My concerns are focused on the planned sewage treatment plant, which poses significant risks to our local environment and community. Additionally, I question the appropriateness of the developer seeking approval for such a critical piece of infrastructure before building rights for the development itself have even been granted. This sequence suggests a lack of proper planning and undermines the usual process of evaluating the broader impacts of the project.

1. Premature Application for Sewage Plant Approval
   It is highly irregular for a developer to request permission to construct a sewage treatment plant before securing the necessary building rights for the development. The approval of a sewage facility should be contingent on a thorough review of the entire development plan, including its density, layout, and potential environmental impacts. By applying for the sewage plant in advance, the developer is effectively trying to bypass the proper sequence of approvals, which compromises the integrity of the decision-making process. How can the authorities consider approving a key piece of infrastructure without first confirming that the broader project has met all planning, environmental, and community requirements?

2. Potential Environmental Risks from the Sewage Plant

The proposed sewage treatment plant is planned for a location close to sensitive natural features, including a spring and wetland areas. Even modern sewage systems are not immune to leaks or malfunctions, especially in areas with high groundwater levels like Keurbooms. The risk of untreated or inadequately treated effluent entering the groundwater system could have devastating effects on local water quality, affecting both the environment and nearby properties. Given the proximity to water bodies that contribute to the Keurbooms Estuary, any contamination could disrupt vital ecosystems and harm aquatic life, impacting the overall health of the area.

3. Lack of Detailed Risk Assessment and Mitigation Plans
   The draft Basic Assessment Report (BAR) lacks sufficient detail about the potential risks associated with the sewage treatment plant. While the proposal mentions mitigation measures, these are vague and do not include specific plans for monitoring water quality, preventing leaks, or addressing potential failures. A project of this scale, in such an environmentally sensitive location, requires a comprehensive risk assessment that includes detailed contingency plans and clear guidelines for ongoing maintenance and monitoring. The absence of these critical elements raises serious questions about the viability and safety of the proposed sewage facility.

4. Impact on the Character of the Keurbooms Area
   The Keurbooms area is valued for its natural beauty, quiet residential character, and high environmental standards. Introducing a sewage treatment plant, especially in the absence of an approved development plan, is out of step with the community's expectations for sustainable, low-impact growth. The visual and potential odour impacts of the facility could significantly alter the character of the area, reducing its appeal for both current residents and prospective buyers. This change is inconsistent with the careful, environmentally conscious development that has defined the region up to this point.

5. Strain on Local Infrastructure and Incomplete Planning
   The developer's reliance on a temporary sewage treatment plant until municipal upgrades are completed is another point of concern. Temporary systems are often more prone to issues such as leaks and equipment failures. Additionally, there is no clear timeline or funding commitment for the necessary upgrades to the municipal system, creating uncertainty about how long the temporary facility will be in operation. This incomplete approach to planning increases the risk of environmental harm and places an unnecessary burden on local infrastructure.

Conclusion
The current proposal to install a sewage treatment plant before obtaining building rights for the development is premature and undermines the proper review process. The potential environmental risks, lack of detailed planning, and impact on the character of the Keurbooms area are significant concerns that have not been adequately addressed. I respectfully urge the authorities to deny the request for sewage plant approval until the full development plan has been evaluated and all necessary rights have been granted. This project requires a more thoughtful, comprehensive approach that prioritizes the health and well-being of our community and environment.

'carienvanderwatt' carien.vdwatt@gmail.com
7 Read Street, Keurboomstrand

Concerns About the Sewage Treatment Plant and Premature Application for Infrastructure Approval

As a resident of Keurboomstrand, I would like to object to the proposed development on Portion 91 of Farm Matjesfontein 304, mainly because the planned sewage treatment plant poses significant risks to our local environment and community. The appropriateness of the developer seeking approval for such a critical piece of infrastructure before building rights for the development itself have even been granted, is also of concern. The usual process of evaluating the broader impacts of the project is undermined by this and it also suggests a lack of proper planning.

1. Premature Application for Sewage Plant Approval
   Should it not first be confirmed that the broader project has met all planning, environmental, and community requirements before approval of a key piece of infrastructure is considered? Requesting permission to construct a sewage treatment plant before securing the necessary building rights for the development, is highly irregular. Should a thorough review of the entire development plan, including its density, layout, and potential environmental impacts not precede the approval of a sewerage facility? The integrity of the decision making process is compromised by applying for the sewage plant in advance, and the developer is effectively trying to bypass the proper sequence of approvals.

2. Potential Environmental Risks from the Sewage Plant
   The location where the sewage treatment plant is planned for is close to sensitive natural features, including a spring and wetland areas. Keurbooms has high groundwater levels and the risk of untreated or inadequately treated effluent entering the groundwater system could have devastating effects on local water quality, affecting both the environment and nearby properties. Leaks and or malfunctions are a risk even for modern sewerage systems. , Any contamination could disrupt vital ecosystems and harm aquatic life, impacting the overall health of the area, a real concern given the proximity to water bodies that contribute to the Keurbooms Estuary.

3. Lack of Detailed Risk Assessment and Mitigation Plans
   The draft Basic Assessment Report (BAR) has insufficient detail about the potential risks associated with the sewage treatment plant. While the proposal mentions Mitigation measures are mentioned in the proposal but these are vague and specific plans for monitoring water quality, preventing leaks, or addressing potential failures are missing. A comprehensive risk assessment is required for a project of this scale, in such an environmentally sensitive location. This risk assessment should include detailed contingency plans and clear guidelines for ongoing maintenance and monitoring. Serious questions about the viability and safety of the proposed sewage facility is raised by the absence of these critical elements.

4. Impact on the Character of the Keurbooms Area
   Its natural beauty, quiet residential character, and high environmental standards is what the Keurbooms area is valued for. The introduction of a sewage treatment plant, especially in the absence of an approved development plan, does not conform with the community's expectations for sustainable, low-impact growth. The character of the area could be significantly altered and its appeal reduced for both current residents and

prospective buyers by the visual and potential odour impacts of the facility. Up to this point careful, environmentally conscious development has defined the region and this change of procedure is inconsistent with that

5. train on Local Infrastructure and Incomplete Planning
   Another point of concern is the developer's reliance on a temporary sewage treatment plant until municipal upgrades are completed. No clear timeline or funding commitment for the necessary upgrades to the municipal system are known, creating uncertainty about how long the temporary facility will be in operation. Issues like leaks and equipment failures more often occur in temporary systems. The risk of environmental harm is increased by this incomplete approach to planning and it also places an unnecessary burden on local infrastructure.

   The proper review process is undermined by the current proposal to install a sewage treatment plant before obtaining building rights for the development and it is also premature. The significant concerns of the potential environmental risks, lack of detailed planning, and impact on the character of the Keurbooms area have not been adequately addressed. A more thoughtful, comprehensive approach that prioritises the health and well-being of our community and environment is required by this project. The authorities are therefore respectfully urged to deny the request for sewage plant approval until the full development plan has been evaluated and all necessary rights have been granted.

   Thanking you in advance for your consideration.

'Michelle Chick' michelle@aynimarketing.co.za
0824958510

As a Keurbooms property owner, I am against the proposed sewage treatment plant because:

1. It has not been properly researched

2. They are not proven to work properly

3. The necessary skills to operate and maintain it are in short supply and there is a high probability of there being overflows and bad smells, same as at the Keurbooms Angling Club

4. There is a high risk of it contaminating the ground water and natural spring located within plus minus 100m of it

   I am against the proposed development because

5. It is not in keeping with the nature of Keurbooms natural beauty, quiet residential character, and high environmental standards

6. It is against the stated development plans for this area that is actually part of the estuarine flood plain

7. It will negatively impact the values of all properties in the vicinity

8. It will set a precedent that can be repeated in other areas of Keurbooms and Plett

José Ribeiro

I am writing to register my objection to the proposed high-density housing project and sewage plant on Portion 91 of Farm Matjes Fontein 304. The introduction of such a large-scale development in this area would compromise the unique beauty and environmental integrity of Keurbooms. Not only does this proposal fail to align with the natural character of Keurbooms, but the sewage processing plant could lead to significant environmental issues, including potential groundwater contamination. The development also undermines local values and sets a worrisome precedent for further projects. I hope that my concerns, along with those of other residents, will encourage a thorough reconsideration of this proposal.

'Loni Ribeiro' loni.ribeiro@hotmail.com

As someone who deeply values the natural beauty of Plett, I wish to voice my opposition to the proposed sewage treatment plant and high-density housing units on Portion 91 of Farm Matjes Fontein 304. These plans pose environmental, health, and quality-of-life risks for Keurbooms residents. The proposal to establish a sewage processing plant on site is troubling, as such systems require specialized management that is not easily accessible. Additionally, the possibility of groundwater contamination, foul odors, and operational failures makes this project inappropriate for the location. High-density housing will only add to the strain on our natural resources and municipal infrastructure. Please consider these objections to protect our area's character and natural ecosystem

Maarten Molenaar, molenaarm@greyjunior.com

As we are all aware that the current Keurbooms infrastructure (sewage, water and electricity) has taken huge strain and that it needs serious attention. This must be corrected before any other planned development. I cannot support any other development until such time that the current infrastructure has proven reliable and working.

The proposed sewage treatment plant will have a great negative impact on the environment. Have a look what is happening around SA with beach, rivers and wetlands been influenced by sewage leaking into these areas. The Waves is a Blue Flag beach, and this can definitely be lost with any leaks. Keurbooms has a very high, water table and leaks can cause major damage.

'Margeaux Lynne Maritz' margeauxmaritz1@gmail.com

0826546596

As a homeowner in Keurboomstrand. I respectfully urge you to protect the character, municipal infrastructure and consider the environmental impact this will have on our area.

My concerns are focused on the planned sewage treatment plant, which poses significant risks to our local environment and community. Additionally, I question the appropriateness of the developer seeking approval for such a critical piece of infrastructure before building rights for the development itself have even been granted. This sequence suggests a lack of proper planning and undermines the usual process of evaluating the broader impacts of the project.

1. Premature Application for Sewage Plant Approval
   It is highly irregular for a developer to request permission to construct a sewage treatment plant before securing the necessary building rights for the development. It seems like malpractice and an intention to bypass the system
   The approval of a sewerage facility should only be considered after the building rights of the development plan, including density, layout, and environmental aspects has been duly considered by the authorities. How can a key piece of infrastucture be granted without first confirming the project?

2. Potential Environmental Risks from the Sewage Plant
   The proposed sewage treatment plant is planned for a location close to sensitive natural features, including a spring and wetland areas. Even modern sewage systems are not immune to leaks or malfunctions, especially in areas with high groundwater levels like Keurbooms. The risk of untreated or inadequately treated effluent entering the groundwater system could have devastating effects on local water quality, affecting both the environment and nearby properties. Given the proximity to water bodies that contribute to the Keurbooms Estuary, any contamination could disrupt vital ecosystems and harm aquatic life, impacting the overall health of the area

3. Lack of Detailed Risk Assessment and Mitigation Plans
   The draft Basic Assessment Report (BAR) lacks sufficient detail about the potential risks associated with the sewage treatment plant. While the proposal mentions mitigation measures, these are vague and do not include specific plans for monitoring water quality, preventing leaks, or addressing potential failures. A project of this scale, in such an environmentally sensitive location, requires a comprehensive risk assessment that includes detailed contingency plans and clear guidelines for ongoing maintenance and monitoring. It seems as though this has not been seriously considered by the developers and they do not plan to execute the mitigation measures, finding loopholes in their vague attempt.

4. Impact on the Character of the Keurbooms Area
   This will have a massive impact on the character of the Keurbooms area which is known for its natural its beauty, quiet residential character, and high environmental standards. This is also the very reason many of the owners decided to buy in Keurboomstrand. Introducing a sewage treatment plant, especially in the absence of an approved development plan, is out of step with the community’s expectations for sustainable, low-impact

growth. The visual and potential odour impacts of the facility could significantly alter the character of the area, reducing its appeal for both current residents and prospective buyers, this can have a massive impact on the property value of Keurbooms residents. This change is inconsistent with the careful, environmentally conscious development that has defined the region up to this point.

5. Strain on Local Infrastructure and Incomplete Planning
   The developer's reliance on a temporary sewage treatment plant until municipal upgrades are completed is another point of concern. Temporary systems are often more prone to issues such as leaks and equipment failures. Additionally, there is no clear timeline or funding commitment for the necessary upgrades to the municipal system, creating uncertainty about how long the temporary facility will be in operation. This incomplete approach to planning increases the risk of environmental harm and places an unnecessary burden on local infrastructure

   The current proposal is absolutely absurd to say the least, it will have a massive impact on the character, environment and infrastructure of Keurbooms. I respectfully urge the authorities to deny the request for sewage plant approval until the full development plan has been evaluated and all necessary rights have been granted. This project requires a more thoughtful, comprehensive approach that prioritizes the health and well-being of our community and environment.

'Chris Maritz' chrismartinmaritz@gmail.com

As a resident of the Keurbooms area, I am writing to formally object to the proposed development on Portion 91 of Farm Matjesfontein 304. My primary concerns pertain to the planned sewage treatment plant, which poses significant risks to our local environment and community. Additionally, I question the appropriateness of the developer seeking approval for such a critical piece of infrastructure before obtaining the necessary building rights for the development itself. This sequence suggests a lack of proper planning and undermines the usual process of evaluating the broader impacts of the project

1. Premature Application for Sewage Plant Approval

   1.1 It is highly irregular for a developer to request permission to construct a sewage treatment plant before securing the necessary building rights for the development.

   1.2 The approval of a sewage facility should be contingent on a thorough review of the entire development plan, including its density, layout, and potential environmental impacts

   1.3 By applying for the sewage plant in advance, the developer is effectively bypassing the proper sequence of approvals, which compromises the integrity of the decision-making process

1.4 How can the authorities consider approving a key piece of infrastructure without first confirming that the broader project has met all planning, environmental, and community requirements?

2. Potential Environmental Risks from the Sewage Plant

2.1 The proposed sewage treatment plant is planned for a location close to sensitive natural features, including a spring and wetland areas.

2.2 Even modern sewage systems are not immune to leaks or malfunctions, especially in areas with high groundwater levels like Keurbooms.

2.3 The risk of untreated or inadequately treated effluent entering the groundwater system could have devastating effects on local water quality, affecting both the environment and nearby properties

2.4 Given the proximity to water bodies that contribute to the Keurbooms Estuary, any contamination could disrupt vital ecosystems and harm aquatic life, impacting the overall health of the area.

2.5 The Keurbooms Estuary is a critical habitat for various species of fish, birds, and other wildlife. Contamination from the sewage plant could lead to a decline in biodiversity, affecting the ecological balance and the natural beauty of the region

2.6 Wetlands in the area act as natural water filters and flood buffers. Any disruption to these ecosystems could reduce their ability to perform these essential functions, increasing the risk of flooding and water pollution.3. Lack of Detailed Risk Assessment and Mitigation Plans

3. The draft Basic Assessment Report (BAR) lacks sufficient detail about the potential risks associated with the sewage treatment plant.

3.1 While the proposal mentions mitigation measures, these are vague and do not include specific plans for monitoring water quality, preventing leaks, or addressing potential failures.

3.2 A project of this scale, in such an environmentally sensitive location, requires a comprehensive risk assessment that includes detailed contingency plans and clear guidelines for ongoing maintenance and monitoring.

3.3 The absence of these critical elements raises serious questions about the viability and safety of the proposed sewage facility.

3.4 Effective mitigation plans should include regular inspections, real-time monitoring systems, and emergency response protocols to address any potential leaks or malfunctions promptly.

4. Impact on the Character of the Keurbooms Area

4.1 The Keurbooms area is valued for its natural beauty, quiet residential character, and high environmental standards.
• Introducing a sewage treatment plant, especially in the absence of an approved development plan, is out of step with the community's expectations for sustainable, low-impact growth.

4.2 The visual and potential odour impacts of the facility could significantly alter the character of the area, reducing its appeal for both current residents and prospective buyers.

4.3 This change is inconsistent with the careful, environmentally conscious development that has defined the region up to this point.
• The presence of a sewage treatment plant could also deter tourism, which is a vital part of the local economy, further impacting the community's well-being.

5. Strain on Local Infrastructure and Incomplete Planning

5.1 The developer's reliance on a temporary sewage treatment plant until municipal upgrades are completed is another point of concern.

5.2 Temporary systems are often more prone to issues such as leaks and equipment failures

5.3 Additionally, there is no clear timeline or funding commitment for the necessary upgrades to the municipal system, creating uncertainty about how long the temporary facility will be in operation

5.4 This incomplete approach to planning increases the risk of environmental harm and places an unnecessary burden on local infrastructure.

5.5 Long-term planning should ensure that any infrastructure developments are sustainable and do not compromise the environmental integrity of the area

Conclusion

The current proposal to install a sewage treatment plant before obtaining building rights for the development is premature and undermines the proper review process. The potential environmental risks, lack of detailed planning, and impact on the character of the Keurbooms area are significant concerns that have not been adequately addressed. I respectfully urge the authorities to deny the request for sewage plant approval until the full development plan has been evaluated and all necessary rights have been granted. This project requires a more thoughtful, comprehensive approach that prioritizes the health and well-being of our community and environment.

'Andrew Hall' ashall@mweb.co.za

I am writing to express my strong objection to the proposed development on Portion 91 of Farm Matjesfontein 304, Plettenberg Bay, based on the detrimental impact it is likely to have on the value of surrounding properties. As a property owner in the Bitou area, I have significant concerns that this development could negatively affect the desirability, character, and market value of our homes, which are intrinsically tied to the pristine natural environment and scenic qualities of the region.

1. Impact on Scenic Value and Sense of Place
   The proposed development entails constructing 73 units at a density that is highly incongruent with the low-density, rural character of the surrounding area. The Keurbooms Road, a scenic route cherished for its visual appeal and tranquil setting, will be compromised by the visual prominence of high-density housing. Even the suggested 10-meter vegetation buffer, as proposed in the draft Basic Assessment Report (BAR), is unlikely to sufficiently obscure the development and mitigate these visual disruptions. This diminishment of scenic quality can severely affect the perceived exclusivity and appeal of nearby properties, consequently leading to a decline in property values.

2. Socio-Economic Implications and Tourism Concerns
   Property values in this area are also influenced by tourism, a key economic driver that attracts visitors due to the region's natural beauty and quiet charm. Any negative impact on the aesthetics and sense of place will have a ripple effect, discouraging tourism and potentially affecting the rental income of property owners who rely on seasonal visitors. Estate agents and market analysts have noted that developments altering the natural landscape or placing strain on local infrastructure tend to depress property values in areas highly dependent on tourism.

3. Inadequate Assessment of Property Value Impact
   The draft BAR has not incorporated a comprehensive socio-economic impact assessment, despite explicit requests from the Department of Environmental Affairs and Development Planning (DEADP). This omission is particularly troubling, as there has been no detailed analysis of how the proposed development could affect the local real estate market. Ignoring the financial interests of existing property owners, who may suffer significant economic losses, fails to meet a responsible planning standard

4. Concerns over Infrastructure Strain and Service Capacity
   The proposed increase in population density will strain local infrastructure, such as roads and water supply, which are already under pressure during peak tourist seasons. The GLS Capacity Analysis indicated that the bulk water and sewer systems are inadequate to support additional development without significant upgrades. Delays or failures in these necessary improvements could lead to practical inconveniences, further reducing the desirability and value of properties in the vicinity.

5. Flood Risk and Environmental Vulnerability
   Another critical factor affecting property values is the increased risk of flooding. The site lies partially within a flood-prone area, and the introduction of impermeable surfaces will exacerbate stormwater management challenges. Prospective buyers are often deterred by properties near developments that could amplify flooding risks, especially in regions where climate change is intensifying these hazards.

Conclusion

The proposed development threatens to disrupt the scenic, environmental, and infrastructural balance of the Keurbooms area, posing a direct risk to property values. Without a detailed, independent assessment of the potential economic fallout on the real estate market, it would be irresponsible to proceed with this project. I urge the authorities to reconsider the scale and nature of this development to safeguard the financial and communal interests of existing property owners.

'Janet - OldNick' janet@oldnick.co.za
Janet Holding

As an I.A.P, I wish to object to the Application for the Water Use License for the Proposed Housing Development on Portion 91, Matjesfontein 304.

Having researched the Bio Wastewater system, I believe that the using of this type of system on this site has too many disadvantages. It is reported that these systems often cause pungent odors and in the event of malfunction the risk to the natural water spring is too great.

In the event of extreme rains (which are becoming more frequent), there is a likelihood that any excess effluent will not run off due to the fact that it is such a flat site.

'Koos van Wyk' palmwag@mweb.co.za
56 Keurboomstrand

I am a property owner in the Keurbooms village and have been visiting the environment for more than 40 years. The beauty of Keurbooms and its surrounds are beyond description, and we all hope to preserve it as long as possible for those who come after us

The possibility of further property developments has for many years been unviable due to the lack of municipal services and the shortage of finances in local government to provide such infrastructure

This application for sewerage before we as owners have been notified of the building rights being granted is highly irregular and suspect.
The access road, electricity supply, current sewerage system and beaches are already overpopulated and the proposed addition of a material number of dwellings will put strain on the existing residential infra structure capacity. Having stated that the development and location of the proposed township is undesirable and to be opposed, it follows that the sewerage plant could not be considered otherwise

I therefore wish that my opposition thereto be recorded.

'Jenny Lawrence' wildspiritjen@gmail.com 1. There has been inadequate Public Scoping for this proposa 3. A sewage treatment plant is likely to contaminate the ground water and natural spring which provides water for many local residents. 4. The application for 60 + houses on 5 hectares of land is excessive given the nature of Keurboomstrand. As a resident of the area, renowned for its natural biodiversity and appeal to foreign tourists, I trust that my objection amongst those of many others, will be given due attention.
'Michael Kirkcaldy' mike@kpinc.co.za I am against the proposed sewerage treatment plant. There is a high probability of there being overflows and bad smells, same as the Keurbooms angling club. There is also a high risk of contaminating the ground water and the natural spring located in close proximity. Kindly note my objection
'Karen Brown' karenknipscheer@gmail.com **Karen Knipscheer** 1. Conversion of Valuable, fertile Agricultural Land Loss of Agricultural Resources: The proposed development would permanently remove productive agricultural land from use. This not only diminishes local food production capabilities but also affects the livelihoods of those who depend on agriculture. Contradiction of Land Use Policies: Transforming agricultural land into residential property goes against existing zoning regulations and sustainable land management practices. Such a significant change in land use should be thoroughly evaluated and justified, which the current proposal fails to do. 2. Insufficient Municipal Infrastructure Support Overburdened Existing Infrastructure: The current municipal infrastructure is not equipped to handle the increased demand that a high-density residential development would impose. This includes water supply, sewage treatment, road capacity, and emergency services. Uncertain Infrastructure Upgrades: The proposal relies on future municipal infrastructure improvements that are dependent on funding with no guaranteed timeline. This uncertainty poses significant risks, as the necessary infrastructure may not be available when needed

3. Inadequate Wastewater Management Dependence on Temporary Sewage Systems: Relying on a temporary bio-sewage system until municipal upgrades are completed is problematic. These systems require expert operation and maintenance, which may not be sustainable in the long term. Any failure could result in environmental contamination. Underestimated Sewage Generation: The proposed sewage system appears undersized for a high-density development. Inaccurate estimates of water usage could lead to system overloads, increasing the risk of untreated sewage discharge into the environment.
4. Environmental Impact on Local Water ResourcesProximity to Sensitive Water Bodies: The development is planned within 100 meters of a natural spring and pond, which are integral to the local ecosystem. Birds and mammals make use of this. Construction and increased human activity could lead to contamination and disruption of these water sources. Alteration of Natural Watercourses: Activities that impede or alter watercourses can have long-term negative effects on aquatic ecosystems, violating Sections 21(c) and 21(i) of the National Water Act.

5. Inadequate Stormwater and Runoff Management Increased Risk of Flooding and Contamination: High-density developments introduce more impervious surfaces, leading to greater stormwater runoff. Without proper management, this runoff can carry pollutants into nearby water bodies and increase the risk of flooding. Negative Impact on Ecosystems:The additional runoff can erode soil and harm local habitats, affecting biodiversity and the overall health of the environment.

6. Removal of indigenous forest The Keurbooms Forest is protected and many well established trees will need to be removed. This will result in further fragmentation of the forest canopy. The Department of Forestry should survey the area.

7. Economic and Social Implications Devaluation of Surrounding Properties: The introduction of a high-density development could negatively impact the value of surrounding properties, especially if the area becomes overburdened and infrastructure remains inadequate. Strain on Community Resources:An influx of residents without corresponding enhancements to community resources can lead to overuse and degradation of existing facilities, diminishing the quality of life for current residents.

8. Contradiction with Sustainable Development Goals Unsustainable Land Use Practices:Converting agricultural land to residential use contributes to urban sprawl and undermines efforts to promote sustainable land management and environmental conservation. Loss of Rural Character: The development threatens to alter the rural nature of the community, affecting cultural heritage and the traditional way of life that many residents value

Conclusion

We are very concerned about the proposed transformation of this agricultural land into a high-density residential area without adequate municipal infrastructure support. This raises significant environmental, social, and economic concerns. It is crucial to prioritize sustainable land use and ensure that any development is appropriately supported by infrastructure and services

Therefore, I strongly request that the relevant authorities to reject the Water Use License Application for this development until these critical issues are thoroughly addressed.

'Douglas Brown' doug19a@gmail.com
12a Read Street, Keurboomstrand

I am writing to raise my objection to the water license application for the proposed housing development of Farm 304 Matjesfontein. I am a resident of Keurboomstrand and am horrified at the proposed planning for a sewage treatment plant. It is clearly not in keeping with an area, renowned for being an area of outstanding natural beauty. I am particularly concerned about the odour that will be generated. Despite the assurances given by the developer, it is a fact that sewerage treatment plants emit foul odours. This will obviously degrade the living experience for all of us residents and tourists that visit this beautiful natural coastline. I am also very concerned that foul odours and densification will negatively affect the value of our properties. All in all, this is a completely inappropriate scale of development adjacent to an increasingly threatened coastal forest habitat.

'Mike van Lier' mmvanlier123@gmail.com
Keurbooms Resident

As a resident of the surrounding Keurbooms area, I am writing to object to the proposed development on Portion 91 of Farm Matjesfontein 304. My concerns are focused on the planned sewage treatment plant, which poses significant risks to our local environment and community. Additionally, I question the appropriateness of the developer seeking approval for such a critical piece of infrastructure before building rights for the development itself have even been granted. This sequence suggests a lack of proper planning and undermines the usual process of evaluating the broader impacts of the project.

1. Premature Application for Sewage Plant Approval It is highly irregular for a developer to request permission to construct a sewage treatment plant before securing the necessary building rights for the development. The approval of a sewage facility should be contingent on a thorough review of the entire development plan, including its density, layout, and potential environmental impacts. By applying for the sewage plant in advance, the developer is effectively trying to bypass the proper sequence of approvals, which compromises the integrity of the decision-making process. How can the authorities consider approving a key piece of infrastructure without first confirming that the broader project has met all planning, environmental, and community requirements?

2. Potential Environmental Risks from the Sewage Plant The proposed sewage treatment plant is planned for a location close to sensitive natural features, including a spring and wetland areas. Even modern sewage systems are not immune to leaks or malfunctions, especially in areas with high groundwater levels like Keurbooms. The risk of untreated or inadequately treated effluent entering the groundwater system could have devastating effects on local water quality, affecting both the environment and nearby properties. Given the proximity to water bodies that

contribute to the Keurbooms Estuary, any contamination could disrupt vital ecosystems and harm aquatic life, impacting the overall health of the area.

3. Lack of Detailed Risk Assessment and Mitigation Plans The draft Basic Assessment Report (BAR) lacks sufficient detail about the potential risks associated with the sewage treatment plant. While the proposal mentions mitigation measures, these are vague and do not include specific plans for monitoring water quality, preventing leaks, or addressing potential failures. A project of this scale, in such an environmentally sensitive location, requires a comprehensive risk assessment that includes detailed contingency plans and clear guidelines for ongoing maintenance and monitoring. The absence of these critical elements raises serious questions about the viability and safety of the proposed sewage facility

4. Impact on the Character of the Keurbooms Area The Keurbooms area is valued for its natural beauty, quiet residential character, and high environmental standards. Introducing a sewage treatment plant, especially in the absence of an approved development plan, is out of step with the community's expectations for sustainable, low-impact growth. The visual and potential odour impacts of the facility could significantly alter the character of the area, reducing its appeal for both current residents and prospective buyers. This change is inconsistent with the careful, environmentally conscious development that has defined the region up to this point.

5. Strain on Local Infrastructure and Incomplete Planning The developer's reliance on a temporary sewage treatment plant until municipal upgrades are completed is another point of concern. Temporary systems are often more prone to issues such as leaks and equipment failures. Additionally, there is no clear timeline or funding commitment for the necessary upgrades to the municipal system, creating uncertainty about how long the temporary facility will be in operation. This incomplete approach to planning increases the risk of environmental harm and places an unnecessary burden on local infrastructure.

Conclusion

The current proposal to install a sewage treatment plant before obtaining building rights for the development is premature and undermines the proper review process. The potential environmental risks, lack of detailed planning, and impact on the character of the Keurbooms area are significant concerns that have not been adequately addressed. I respectfully urge the authorities to deny the request for sewage plant approval until the full development plan has been evaluated and all necessary rights have been granted. This project requires a more thoughtful, comprehensive approach that prioritizes the health and well-being of our community and environment. Thank you for your consideration

'Andre Claassen' **andretijen@icloud.com**

I am writing to express my strong objection to the proposed Water Use License Application for the housing development on Portion 91 of Farm Matjes Fontein 304, specifically regarding the sewage treatment plant.

I have serious concerns about the viability and potential risks associated with this plant. Insufficient research and lack of proven effectiveness raise significant doubts about its ability to operate efficiently. Moreover, the scarcity of skilled personnel to manage and maintain the facility heightens the likelihood of malfunctions, overflows, and unpleasant odors.

Furthermore, I am very concerned about the potential contamination of groundwater of the nearby natural spring, situated close to the proposed plant. This could have environmental and health implications.

In light of these concerns, I urge you to reconsider granting the Water Use License

Other Residents and Public Template type emails

RESPONSES per TOPIC

1. Bulk water supply and capacity

It is noted that there are many new development proposals competing for the same water supply and water treatment services. Note the Bitou Municipality letter on Bulk water supply and treatment for this project.

The Bitou Municipality Engineering department provided a letter to confirm that:

'The water treatment plant currently has sufficient capacity. The GLS report confirms The Matjiesfontein reservoir currently has sufficient capacity to accommodate the development. The bulk water supply to the reservoir is however inadequate and, to meet current demand and that of projected future developments, upgrades are required to the bulk watermains over the full length from the Town Reservoirs to the Matjiesfontein Reservoir. Implementation of partial upgrade of the bulk watermains is in the planning stage'.

1.1 Estimates of bulk water capacity demand

The average of 237 litres per day, stated in the objections, is based on bulk volumes supplied by water authorities and includes extensive municipal leakages, irrigation of parks and sporting facilities and various other usages and is of no relevance to the development demand..

Poise Engineering stated that the water consumption adopted in the Engineering Report is 600 litres per unit per day. This is the figure recommended in the GLS bulk services report. It is also the lower figure of the consumption figures recommended in the CSIR Red Book and the Neighbourhood Planning and Design Guidelines, the latter being the default reference of Bitou Water and Sanitation Department. The lower figure is motivated with consideration to the low expected average occupancy and the water harvesting and effluent recycling measures to be adopted.

2. Bulk sewerage services and treatment capacity

Gansevallei Wastewater Treatment Plant is at full capacity and requires upgrading. The GLS report confirms that the Keurbooms, Matjiesfontein and Aventura pump stations have sufficient capacity to accommodate the development. However, Aventura rising main requires upgrading to accommodate all future developments. The Matjiesfontein rising main has sufficient capacity but is in poor condition and requires replacement'.

The Bitou Municipality further issued a letter to confirm the following on sewerage services for this development by means of a package plant in the interim:

We confirm that Bitou Municipality has bulk infrastructure capacity in its networks and can accommodate the proposed development, subject to the following conditions.

1. That the developer enters into and sign a Service Level Agreement with Bitou Municipality,
2. That the developer makes payment of the prescribed Augmentation contributions in order for the municipality to implement the bulk upgrade of services as detailed and required.
3. That the developer implements and maintain a temporary wastewater treatment plant until the upgrades to the Ganzevallei WWTW has been completed. The temporary wastewater treatment plant must be approved by the relevant authorities as part of the civil engineering services for the development. A bulk connection to the Bitou sewer network must be commissioned once the Ganzevallei WWTW has been upgraded and the temporary WWTP must be decommissioned and removed from site. All costs for construction, operation, maintenance and decommission will be for the account of the developer.
4. That the developer duly communicate point 3 above with all future owners/Homeowners Associates and or Body corporate.

3. Site location concerns and flood risk

3.1 Within 1:100-year floodline

As per the Poise Engineering report (Version 7, January 2025), the site is situated approximately 3 km east of the eastern bank of the Keurbooms River Estuary. The site falls outside of the 1 in 100 year floodline which is indicated in the Keurbooms and Environs Local Area Spatial Plan (KELASP; 2013) and the Keurbooms-Bitou Estuary Management Plan (KBEMP). The 1 in 100 year floodline reaches approximately 30m from the southern boundary of

the site and is effectively stopped by the Keurboomstrand Road. The road is at a height of 3.65 mamsl which effectively creates a barrier between the site and the floodline which is estimated at 3.2 mamsl. Therefore, while the site is undoubtedly low-lying it is not in any mapped floodlines. As a precautionary measure, the minimum floor level of each stand will be raised to 4.0 mamsl. The 1 in 50 year floodline is of no significance to the site, terminating approximately 0,95 km west of the site. See below taken from Table 1 in the aquatic specialist report which clearly depicts the floodlines in relation to the property.

Development is not supported in areas below the 1:50 and 1:100 year floodline. Lines indicated are: dark blue = 1:100 year floodline, and light blue area is an 'island' below the 1:50 year floodline. The purple line is the 100m urban coastal setback line. *The proposed development area is located outside of all these features, and is therefore not flagged from a heightened flood risk perspective.*	

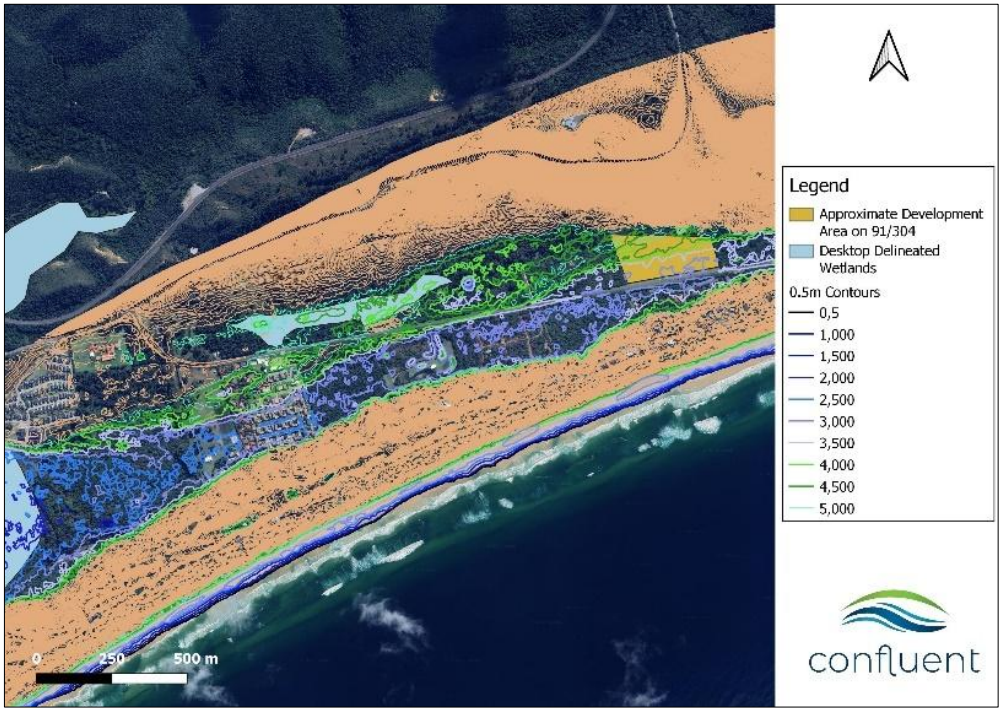
3.2 Within Estuarine Functional Zone

The mapped aquatic features at the site are associated with estuarine habitat which is mapped according to the contours (5 m.a.m.s.l.) and not the actual habitat present. Ground-truthing of the site by the aquatic specialist confirmed no estuarine habitat present in remnant vegetation at the site, and no hydromorphic indicators in the soil that would indicate wetland conditions. The other aspect related to areas mapped in the EFZ is that they are inherently low-lying which could indicate their vulnerability to flooding. Reference to the proposed development location in relation t the 1:100 yr floodline is made in the previous section.

3.3 Weather changes (climate change, sea level rise) exacerbating flood risk

It is true that increasing unpredictability and extreme events could exacerbate the flood risk to this site given its low-lying nature. Given its location at the 'end of the line' of the Keurbooms floodplain area (See map below, Figure 17 in the Aquatic Report), it is unlikely to impact on other developments in the floodplain, but rather, other developments would be in the line of the flood prior to any waters reaching Portion 91. The engineer has acknowledged this risk for residents by raising the minimum floor levels of houses within the development to 4m amsl. The stormwater attenuation ponds and permeable

paving recommended in the stormwater management plan will encourage infiltration of water and retain at least some of the development's flood storage capacity.



4. Temporary Wastewater Treatment Plant (WWTP)

4.1 Planning

The duration of the municipal upgrade is uncertain, but the Bitou municipal letter (referred to in point 1.1 above) confirms that the temporary WWTP is allowed until such time that it can tie into the bulk sewer line once upgrades are done and it can accommodate additional capacity.

4.2 Sewage plant capacity estimation

The water figure usage of 237 kilolitres per day, stated in the objections, is irrelevant to both water and sewerage. See item 2 above.

See the Poise Engineering Report Paragraph 5.2:
The projected sewerage discharge takes consideration of the following recommendations for daily sewerage discharge:

3. RED BOOK Chapter 10, Table C1 Middle Income Group 750 litres per day based on 6 people per dwelling
4. NPDG Section K , Table J2 High Density Residential 480 to 560 litres per day

With consideration to the expected average occupancy of 3 only persons per stand the sewerage discharge is based on average daily discharge of 500 litres per erf. This equates to an average of 3,3 persons per stand.

Average Daily Discharge for 60 stands: 30 kl
Based on a peak factor of 2.5 the maximum peak discharge will be 0,86 litres per second.

The figure adopted of 500 litres per unit per day is based on the CSIR Red Book and Neighbourhood Planning and Design Guidelines figures of 150 litres per person per day and provides for an average of 3,3 persons per household. The figure is above the GLS recommended figure of 420 litres per unit per day.

4.3 Research/viability on type of WWTP

Bio Sewage Systems have been established for over 20 years and have over 800 plants, of size ranging from 5 to 200 m^3 per day, operating successfully in Southern Africa (Poise Engineering).

4.4 Maintenance and management

Poise Engineering report paragraphs 5.4.2 / 5.4.3:
A Plant maintenance manager will be appointed, who will be given comprehensive up front training to obtain the skills to repair if needed and will visit the site and inspect the plant on a daily basis. Bio Sewage Systems do also have support teams available at short notice should any unusual issues arise.

Pre-treatment screening will be provided which will facilitate the cleaning and removal of non bio-degradables. The frequency of cleaning will be determined once the plant is in operation and the amount of non-biodegradables being screened. The non-biodegradables removed would be sent for incineration at a recognised waste disposal site.

All required regular maintenance can be done within the 48-hour emergency storage period. Spares will be kept on site for all critical mechanical and electrical components. The Bio Sewage Systems plant is designed to be fully automated, and simple in operation. Regular inspections are only required to ensure it is running to specification.

4.5 Long-term monitoring

Refer to the Poise Report Paragraph 5.4.2.
Groundwater monitoring will be undertaken and effluent quality will be tested on a monthly basis. Permanent groundwater sampling wells will be installed, strategically positioned for the purposes of regular monitoring of the quality of groundwater which has been subjected to irrigation infiltration.

Should it be required, excess effluent will be discharged to the stormwater infiltration ponds system. This will be environmentally acceptable, the effluent being to DWAS Special Limits quality.

The aquatic specialist report recommends the following:

5. Install two groundwater spikes or wells at 8-10m depth to monitor groundwater quality. These should be located at least 200 m apart and provide easy access during construction and operational phases of the development.
6. Wells must not be located in any areas of natural vegetation, rather opting for locations in previously disturbed grassy areas.
7. Samples must be collected pre-development to determine baseline water quality (at least once/month over 3 months), to monitor possible impacts over time. Samples should be analysed from the start of construction onwards and be submitted for analysis on a monthly basis. Parameters for analysis should be aligned with those indicated in the DWS general limits.
8. Water chemistry must not vary by 10% of the background levels established through baseline sampling. If sampling shows indications that eutrophication of the groundwater is occurring for 3 months consecutively, then this is a reportable incident to BOCMA and DEA&DP, and an alternative to irrigation with treated wastewater or improved treatment must be immediately secured.
9. Water samples results must be submitted to BOCMA, the Bitou Municipality and reviewed by an aquatic ecologist on a quarterly basis from commencement of the development until the municipal WWTW has been upgraded and the package plant is no longer required.

As per the Geohydrologist, (DHS Groundwater, Appendix 20), in order to effectively monitor and protect groundwater quality and levels, the installation of piezometers is crucial. It is recommended that three monitoring piezometers be strategically installed within the vicinity of the proposed development. These piezometers should be installed to a depth of 10 meters below ground level (mbgl), with one placed up-gradient of the proposed development (to

monitor background groundwater quality) and two placed down-gradient (to track any potential movement of contaminants). Additionally, a fourth piezometer should be placed adjacent to the wastewater treatment plant (WWTP), particularly near the underground sewage storage tank, as this is a critical area for potential contamination. The placement of these piezometers will provide comprehensive coverage for groundwater monitoring across the site, both prior to and after construction.

To track changes in groundwater quality, water levels and chemical parameters should be recorded monthly from each of the installed piezometers. Additionally, effluent quality should also be regularly tested to assess the potential impact of the wastewater treatment plant (WWTP).

The Proposed monitoring requirements are as per the table below:

Class	Parameter	Frequency	Motivation
Physical	Static groundwater levels	Monthly	Groundwater recharge, flooding risk, temporal variation
Chemical	Faecal Coliforms, COD, pH, Ammonia as Nitrogen, Nitrate/Nitrite as Nitrogen, Chlorine as free Chlorine, EC, Orthophosphate as phosphorous, Fluoride, Soap oil or grease, Major ions and trace elements.	Monthly	Changes in chemical and microbial composition may indicate areas of groundwater contamination and be used as an early warning system to implement management/remedial actions.

The data should be reviewed by a geohydrologist on a quarterly basis to ensure that no contamination is occurring and that groundwater quality remains within acceptable limits.

Develop and implement a response plan for immediate action in case of contamination detection.

4.6 Enforcement mechanisms and responsibility

DWS is the competent authority which enforce that legislation relating to the National Water Act is followed. Hence the need to apply for a WUL with all the relevant specialist assessments to ensure that the standards of the water uses relevant to this application are understood, monitored and that conditions of approval can be enforced. An Environmental Control Officer (ECO) will be present during the construction phase whose responsibility will be to monitor compliance with conditions set out in the licence. The CME unit of BOCMA do regular checks on licensee properties to audit compliance to the license conditions. Responsibility for implementation of the conditions set out by BOCMA in the water use license is for the license holder.

Important to note that as per the aquatic specialist report, a recommendation for monitoring water quality in groundwater wells is that any deviation in water quality by > 10% over 3 months consecutively must be reported to both BOCMA and DEA&DP. This must be treated as a reportable incident by the ECO and would trigger a compliance and enforcement inspection and investigation by authorities. This should be made clear in development approval conditions.

Furthermore, the ECO would need to monitor compliance with conditions of the Environmental Authorisation should that be issued by the Department of Environmental Affairs and Development Planning. This department has a similar mandate to that of BOCMA in terms of monitoring compliance with conditions of authorisations, and where serious deviations occur, these can result in enforcement procedures where rectification is required.

4.7 Inadequate Emergency storage and Emergency malfunction Procedure

See the Poise Report Paragraph 5.4.6:
The anaerobic tank accommodates 48 hours of emergency storage. Furthermore, a gravity overflow pipe will be installed to link the anaerobic tank to the Bitou municipal sewerage system located on the opposite side of Keurboomstrand Road MR395. This overflow will only become operational in the event of the overflow of the emergency storage.

There will therefore be no possibility of ground contamination through leakage or overflow.

Poise engineering further stated that to enable the monitoring of any potential failure and consequential overflow of the system, an emergency alarm will be installed which will be activated once effluent level rises in the emergency storage component of the system. All required regular maintenance can be done within the 48-hour emergency storage period Spares will be kept on site for all critical mechanical and electrical components

4.8 No off-site pump station

See point 0 above on emergency overflow connection to municipal line.

4.9 Prevention of groundwater contamination from leaks or seepage from the WWTP

As per Poise Engineering report the containment of leakage has been addressed as follows:

The anaerobic tank will be the only underground component of the Plant. The tank will be constructed of reinforced concrete including Penetron Admixture. The durability will therefore be in excess of 50 years, but effectively infinite.

The containerised plant is a fully contained unit, sealed against leakage. It is equipped with overflow protection back to the anaerobic tank in the event of an unlikely blockage within the system

A subsurface drainage system will be installed beneath the anaerobic tank, including a pump sump from which any leakage can be returned to the tank. The drainage system will have an impermeable lining beneath it designed such that that no leakage will infiltrate the ground below.
According to the DHS Groundwater report (Appendix 20), the following mitigation measures must be adhered to prevent groundwater contamination from the WWTP:

10. Ensure the WWTP comply with SANS1200 Part K:Civil Engineering Standard Specifications, NWA, Water Quality Guidelines (DWAF), SANS1913:Planning, Design, and Construction of Sanitation Systems, Wastewater Treatment Plant Design and Operational Guidelines (DWAF, 2008)
11. Use synthetic/geotextile liners and impermeable surfaces approved by the Department of Water and Sanitation (DWS) in areas where sewage and associated waste are handled.
12. Construct all sewer lines and pipes to ensure leak-proof systems that prevent contamination.
13. Ensure that sewage holding tanks and accommodation facilities are properly managed to prevent overflow and spillage.
14. Regularly service the WWTP and inspect the integrity and efficacy of the WWTP
15. Ensure emergency procedures are in place to rapidly repair WWTP should failure occur.

16. Set up a comprehensive monitoring system to monitor the effluent quality.
17. Install at least three monitoring piezometers into the water table, one upstream and two downstream of site. Additionally, a piezometer should be installed in close proximity of the WWTP.
18. Should a leak be detected or the monitoring piezometers be contaminated, a baseline Phase 1 Contamination Assessment should be undertaken and the site remediated in consultation with a contamination remediation consultant and the Authorities.

4.10 Irrigation with treated wastewater

Impact and contamination risk

Given that the intergranular aquifer consists primarily of shallow, unconsolidated material, it is particularly sensitive to contamination and requires stringent protective measures to mitigate potential risks.

By implementing the recommended monitoring network and mitigation measures as prescribed in the geohydrological report, the risk of groundwater contamination during both the construction and operational phases can be reduced to negligible - negative. This will ensure that groundwater quality is continuously protected and that any potential issues are addressed promptly, safeguarding the health and sustainability of the surrounding ecosystem and water users. See mitigation measures as outlined herein under section 4.5 and 4.9 (DHS Groundwater, Appendix 20).

Within 100m of the Spring

The spring and associated pond and buffer are located north of the proposed development area in the green corridor which is to be fenced off from the residential development area. Treated wastewater will be irrigated in gardens and potentially concentrated in the stormwater attenuation ponds which are all at a lower elevation than the natural pond. It is impossible that the treated wastewater can move against gravity to potentially flow into the natural pond, or move uphill to feed into the spring. See Fig. 16 in the Aquatic Specialist report which indicates 0.5 m contours at the site. Furthermore, the spring is sustained by water from the sloping, vegetated area above, which will not be developed. Therefore, it is constantly replenished with clean water.

All the detention ponds will be downslope from the area of the spring. It is therefore a physical impossibility that any flooding of detention ponds will result in contamination of the spring (Poise Engineering).

Impact on groundwater and being within 500m of a borehole

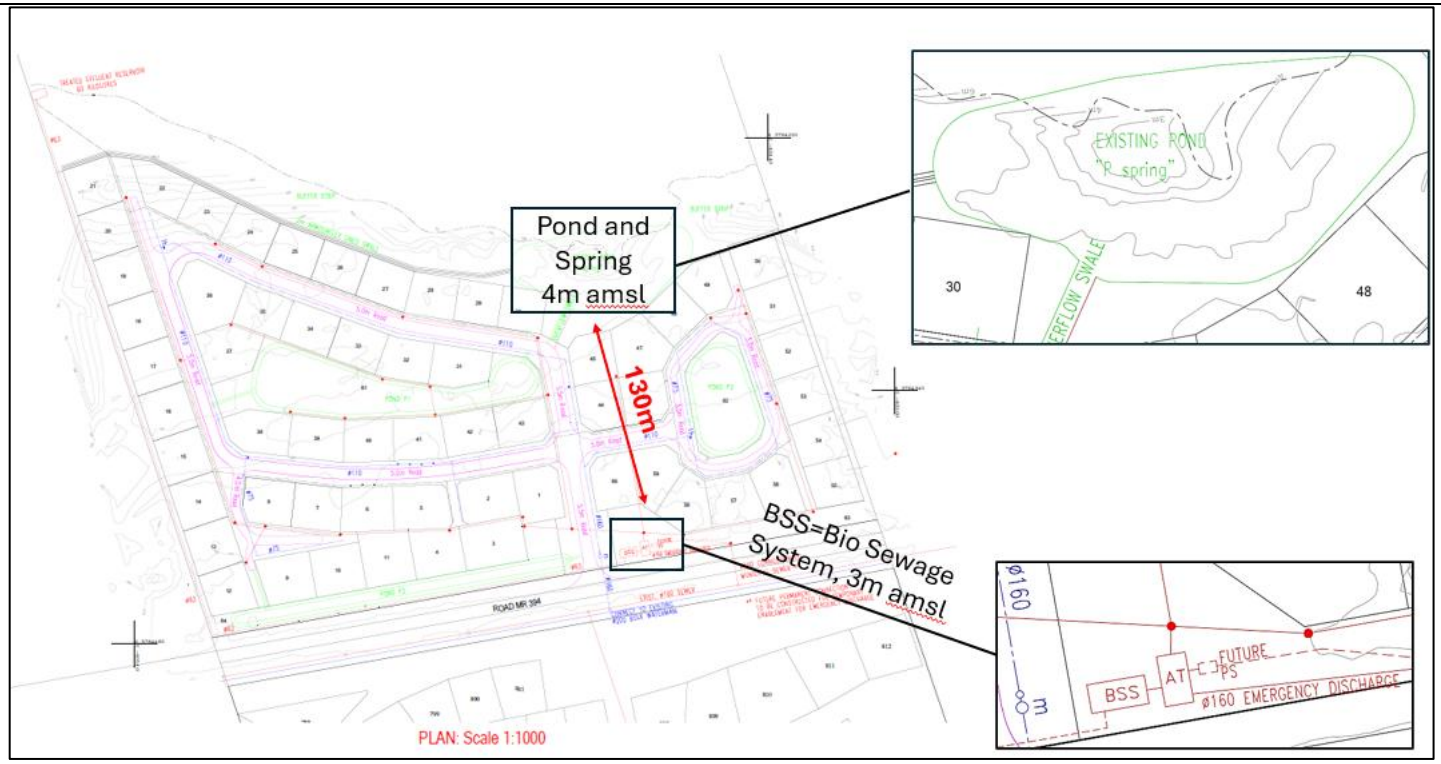
By implementing the recommended monitoring network and mitigation measures as prescribed in the geohydrological report (Appendix 20), the risk of groundwater contamination during both the construction and operational phases can be reduced to negligible - negative. This will ensure that groundwater

quality is continuously protected and that any potential issues are addressed promptly, safeguarding the health and sustainability of the surrounding ecosystem and water users. See mitigation measures as outlined herein under section 4.5 and 4.9.

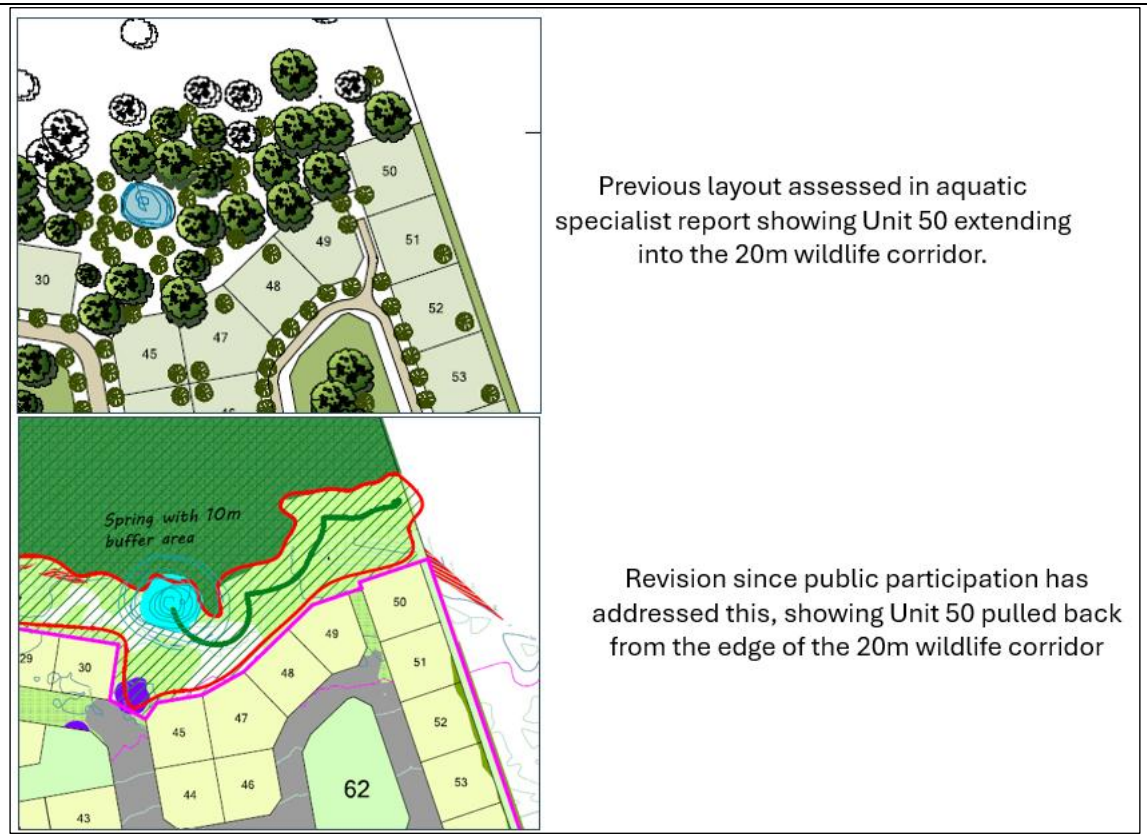
4.11 Inadequate 10 m buffer zone between WWTP and spring

The 10m buffer zone is recommended primarily to preserve habitat around the spring and pond, primarily for access by wildlife and to avoid any direct disturbance to this feature. Strict recommendations have been made that no treated wastewater, or stormwater runoff from the development must be directed into the pond. Consider that the pond itself is not a natural feature. It was excavated to hold water from the spring for livestock drinking. At present it is used by horses who seriously agitate the water. It cannot be considered a highly sensitive aquatic ecosystem, but its preservation as drinking water source for wildlife is important in the wildlife corridor. Buffers around watercourses can be recommended for a variety of reasons including the bioremediation and interception of polluted diffuse surface water runoff generated by the surrounding land use (e.g. from agricultural fields), or to preserve habitat and maintain connectivity along watercourses. The latter reason was the motivation for the recommended buffer.

The wastewater treatment facility (Bio-Sewage System/BSS) is approximately 130m distance from the pond at a lower elevation. The pond edge is at 4m amsl while the BSS is located around 3m amsl. See annotated figure below which is extracted from drawing DWG23G210S01 in the Poise Engineering report. This means that any leakage from the BSS could not physically enter the pond as it is at a higher elevation. Furthermore, the BSS plant is located on the opposite side of the development, much further away than the 10m buffer.



Since the PP started the layout has been updated and changed as per suggestion by the aquatic specialist (Confluent), so that unit 50 which slightly encroached into the 20m wildlife corridor was pulled back from this area. See below comparison of layouts demonstrating this adjustment.



Previous layout assessed in aquatic specialist report showing Unit 50 extending into the 20m wildlife corridor.

Revision since public participation has addressed this, showing Unit 50 pulled back from the edge of the 20m wildlife corridor

4.12 Odour

Efficiently designed and operated high quality treatment plants do not give off odours. The comment on the Angling Club odours is based on ignorance. The angling club does not have a sewerage treatment plant and the odours emanate from the adjacent Bitou pump station (Poise Engineering).

4.13 Electricity supply

The plant will be powered by a Solar/Eskom charged battery system with a backup generator for emergency supply in the event of extended Eskom down time.

4.14 Contamination risk to drinking water supply of Glenwood borehole

As per the Geohydrology report (DHS Groundwater, Appendix 20), one spring, onsite, was identified along with a spike on a neighbouring property. Details are shown in Table 5 of the report:

Table 5. Details of boreholes located on neighbouring properties.

BH nr	Coordinates Decimal Degrees (WGS84)	Depth (m)	Estimated Yield (l/s)	EC (mS/m)	Static water level (mbgl)	Equipment	Water Use	Property Owner (Cell nr.)
MG01	S -34.00624 E 23.43842	2	~	290	~	Centrifugal pump	~	Dr Nick Frootko (076 223 0803)
MF01	S -34.00473 E 23.43689	Surface	~	143	~	~	~	Stephan Roux (sroux@worldonline.co.za)

Based on Table 6 below (from the DHS Groundwater report), both water samples, MG01 and MF01, are deemed unfit for human consumption. Both samples contain elevated levels of chloride (Cl), sodium (Na) and manganese (Mn), exceeding the SANS 241:2015 drinking water standards. Additionally, MG01 exhibits elevated electrical conductivity (EC), total dissolved solids (TDS) and iron (Fe).

Table 6. Water quality results compared to SANS 241-1:2015 (edition 2) drinking water standards

Sample Nr.	MG01	MF01	Standard Limits
pH	7.21	6.88	5.0 - 9.7
EC	380	167.5	170
TDS	2470	1089	1200
T-Alk	387.6	194.4	~
Cl	1089.02	424.72	300
SO_4	236	85	250
NO_3-N	0.8	0.7	11
NO_2-N	0.003	0.002	0.9
NH_4-N	0.2	0.4	1.5
F	0.85	0.77	1.5
Ca	280.365	70.264	~
Mg	90.33	26.379	~
Na	528.005	317.91	200
K	17.224	3.939	~
Fe	0.46	0.27	0.3
Mn	0.452	0.37	0.1
Cu	0	0	2
Zn	0	0	5
E.Coli (cfu/100ml)	0	0	0
Total Coliform (cfu/100ml)	35	27	10
Turbidity	6.01	1.75	5

Notes
Yellow = Acceptable
Exceeds standard limits
Blank = Not Analysed
0 = below detection limit of analytical technique

It is important to note that the borehole in question is actually a spike/well point with poor water quality, and its water is used exclusively for irrigation purposes. Despite this, strict mitigation measures must be implemented to prevent any potential contamination from reaching the borehole.
Critical Mitigation Measures:

6. Containment of Leakage from the WWTP
   - As highlighted in the Poise Engineering Report, all necessary measures should be taken to prevent leaks from the wastewater treatment plant (WWTP).
7. Installation of a Groundwater Monitoring Network
   - One piezometer upstream of the development.
   - Two piezometers downstream to track potential contaminant migration.
   - One piezometer near the WWTP for close monitoring of effluent impact.
8. Regular Groundwater Quality Monitoring
   - Monthly groundwater sampling as recommended in the Geohydrology Impact Assessment to detect any early signs of contamination.
9. Effluent Quality Testing
   - Frequent testing of effluent quality to assess the potential impact of the WWTP on groundwater resources.
10. Immediate Response to Contamination
    - If a leak is detected, a monitoring piezometer shows contamination, or effluent quality deteriorates, a Phase 1 Contamination Assessment should be conducted.
    - Remediation efforts must be carried out in consultation with a contamination remediation consultant and relevant authorities.

By implementing the recommended monitoring network and mitigation measures outlined in both the Poise Engineering Report and the Geohydrology Report, the risk of groundwater contamination during both the construction and operational phases can be reduced to a negligible-negative impact. These proactive steps will ensure the long-term protection of groundwater quality and allow for prompt intervention should any contamination risks arise, safeguarding both the surrounding ecosystem and water users.

5. Flooding & Flood lines

5.1 Flood risk

As per the Poise Engineering report (Version 7, January 2025), the site is situated approximately 3 km east of the eastern bank of the Keurbooms River Estuary. The site falls outside of the 1 in 100 year floodline which is indicated in the Keurbooms and Environs Local Area Spatial Plan (KELASP; 2013) and the Keurbooms-Bitou Estuary Management Plan (KBEMP). The 1 in 100 year floodline reaches approximately 30m from the southern boundary of the site and is effectively stopped by the Keurboomstrand Road. The road is at a height of 3.65 mamsl which effectively creates a barrier between the site and the floodline which is estimated at 3.2 mamsl. Therefore, while the site is undoubtedly low-lying it is not in any mapped floodlines. As a

precautionary measure, the minimum floor level of each stand will be raised to 4.0 mamsl. The 1 in 50 year floodline is of no significance to the site, terminating approximately 0,95 km west of the site.

No flooding has been formally recorded on the site. Steep areas to the north of the proposed development area are not going to be developed and will be retained in a natural condition. No more runoff will be generated from this area than under pre-development conditions. Flood Risk is therefore unlikely to be exacerbated on the site through development of the residential housing complex. This is further supported by the high permeability of soils on the site, and SuDS measures that have been incorporated into the stormwater management plan which include the use of permeable paving and grass blocks for the main and secondary internal roads respectively. Three stormwater attenuation ponds (P1, P2 and P3) will collect runoff from roads and roofs. If the natural pond on the northern section of the site were to overflow during flood conditions it is planned to overflow via the road into stormwater P1 (See Eng Drawing DWG23/G210). The previous owner (Mr. David Steele) whose grandfather purchased the property (and neighbouring portions which were collectively farmed) in the 1950s stated that no flooding has ever occurred in his time on portion 91/304 (*pers. comm*. 29 January 2025).

The KELASP (2013) was reviewed from the perspective of the proposed development area (Dabrowski 2024). This report includes a thorough assessment of the Tshokwane Wetlands including various classifications of different wetland units, delineation of wetland areas, and development recommendations (Freshwater Consulting Group, 2013). Findings in the report relevant to proposed development at the site are summarised in Table 1. One of the development risks within the EFZ relates to flooding which can be exacerbated by climate change and associated sea level rise. The K-BEMP (2018) includes mapped 1:50 and 1:100 year flood lines which are shown in Figure 14 of the Aquatic report. The property is located on the edge of the 1:100 year flood line, which is not mapped to extend beyond the boundary of the property. In reality, the frequency of 100-year flood events is increasing due to climate change, and when coincident with sea-level rise and high tide events, it is not impossible that minor flooding could affect the low-lying area of the property in future. The engineering report has proposed raising the minimum floor level to 4m amsl, the stormwater attenuation ponds, and areas of permeable paving and grass pavers to maintain permeability on the site.

5.2 High rainfall – overflow/flooding of effluent ponds

The pond designs compensate for the lesser infiltration area due to impermeable surfaces for the 1 in 100 year storm interval. The pond catchment basins will ensure that overall storage volume is not less than the current natural state (Poise engineering). The wastewater treatment plant will have no significant implications under high rainfall conditions. The volume of daily effluent is 22.5kl which translates to less than 0.5mm over the site development area and less than 1% of the storage volumes of the attenuation ponds.

The total pond volumes also exceed the 1 in 50 year storm 24 hour runoff volume in all cases. Because there is no current and will be no post development discharge of stormwater to outside of the site boundaries the normal required stormwater attenuation parameters are not applicable to the stormwater management plan. The post-development Catchment Areas and ponds are indicated on attached Figure 1 of the report.

5.3 Compromising the natural flood defence

The site's high permeability property will continue. The site levels will be reshaped to drain toward the new ponds, and the surrounding pond catchment crest levels will be designed such that the overall site flood storage volume is not reduced from that of its current natural state.

Poise Engineering stated that the Development's stormwater management plan mitigates the impact of flood conditions for the Development and ensures that the Development will not negatively impact on surrounding properties under flooding conditions. It provides information on the Sustainable Urban Drainage system (SUDS), where the principals of discharge of runoff by infiltration through permeable paving and grass block roads surfaces and infiltration ponds which will enhance simple adherence to the regulatory SUDS reduction specifications.

Under point 8.6 of the Poise engineering report, the rainfall volumes and retention data are explained. The attached Stormwater Management Data Table indicates the areas of the 3 catchments, the pond areas, the 24-hour runoff volumes and the maximum stored volumes, for the 1 in 100 year return interval storm.

The data indicates that the infiltration ponds will have considerably more storage capacity than the modelled requirements.

5.4 Sensitive flood plain near 4.5m coastal setback line

The 4,5m setback line relates to swash risk. The development is 2,8km from 100m high water mark, and outside of the 1in 100 year backwater floodline. The floodplain of the estuary downstream from the Development is extensively barriered by building structures and dense vegetation. It is clear that in reality no swash whatsoever can be applicable on the site.

5.5 Neighbouring properties

Similar floods to the Keurboomstrand floods of 2007 will not be exacerbated with the additional development. Road 394 was not affected by flooding at the Dunes Resort, nor in the vicinity of the Development and was not impassable. Keurboomsriver Road, more than 2 kilometres to the west, was flooded and impassable.

The Development's stormwater management plan mitigates the impact of flood conditions and ensures that the Development will not negatively impact on surrounding properties under flooding conditions.

Keurboomstrand residents who witnessed the 2007 floods were consulted, who asserted that Keurboomstrand Road 394 was not affected by flooding at the Dunes Resort, nor in the vicinity of the Development and was not impassable. Keurboomsriver Road, more than 2 kilometers to the west, was flooded and impassable (Poise Engineering).

5.6 High groundwater level

The subsurface in this area primarily consists of sand, which has high permeability and is less likely to cause groundwater mounding and flooding. However, it is still important to consider the potential for changes to the local hydrology due to the alteration of land surfaces and drainage patterns. Modifications to the site, such as the construction of impervious surfaces or changes in runoff flow, could disrupt the natural groundwater recharge and increase the risk of localized flooding.

To mitigate these risks, appropriate stormwater management measures should be implemented to manage runoff effectively and maintain groundwater recharge. This includes the use of permeable pavements, retention ponds, and managed drainage systems that ensure water infiltrates into the ground rather than being directed away from the site. By adopting these strategies, the risk of flooding can be minimized, with a goal of reducing it to negligible-negative (DHS Groundwater, Appendix 20).

According to the Geotechnical report 10 test pits were dug. Groundwater was found in Test pits 1 and 5, positioned on the southern lowest side of the site, at depths 1,95m and 2,3m respectively. The other 8 pits were dug to depth varying between 2,3m and 3m without encountering groundwater.

5.7 Flood risk

The 3 attenuation ponds will be designed to ensure no overtopping under 100 year RI storm conditions. In the highly likely event of such conditions being exceeded the overflow will reach the Keurboomstrand Road Reserve. There will however not be any impact more severe that under the current natural state.

The preliminary designs indicate that the bottom level of the ponds will all be in excess of 1,5m above the groundwater level.

The site levels will be reshaped to drain toward the stormwater ponds, and the surrounding pond catchment crest levels will be designed such that the overall site flood storage volume is not reduced from that of its current natural state. The site will continue to serve as a soakaway.

5.8 Vulnerability if WWTP fails

The sandy unsaturated zone effectively reduces the movement of biological contaminants, significantly limiting their potential to reach groundwater. However, it provides minimal resistance to chemical contaminants, allowing them to migrate more easily and increasing the risk of groundwater contamination. This underscores the need for additional protective measures to manage chemical pollutants. These measures are discussed in section 4.5 and 4.9 in this document.

6. Stormwater Management

Stormwater management and flooding prevention designs as per the Poise Engineering report:

The stormwater will be managed such that roof areas will drain to gardens which will fall towards roads or directly to one of three infiltration attenuation ponds to be provided.

The main access roads will be surfaced with permeable paving and secondary roads with grass block paving. In either case infiltration will occur through the road structure and roadbed to the natural ground below. Excess runoff to the road surfaces which does not infiltrate will be surface discharged to the infiltration ponds.

Site levels will be designed to ensure the effective implementation of the stormwater management system. The minimum floor level of any stand will be 4.0m MSL. The site slopes and road levels will be designed to flat gradients to enable maximum infiltration whilst draining on surface to the ponds. The levels will also be designed to contain flood runoff within the ponds. The pond invert levels will be designed such that they will be no deeper than 1.5m above the existing water table.

The site design levels will protect homes from flooding

6.1 Prevent flooding

The Poise Engineering Stormwater Management Data Table indicates the areas of the 3 catchments, the pond areas, the 24 hour runoff volumes and the maximum stored volumes, for the 1 in 100 year return interval storm. The data indicates that the infiltration ponds will have considerably more storage capacity than the modelled requirements. The total pond volumes also exceed the 1 in 50 year storm 24 hour runoff volume in all cases. Because there

is no current and will be no post development discharge of stormwater to outside of the site boundaries the normal required stormwater attenuation parameters are not applicable to the stormwater management plan (Poise Engineering).

6.2 Slope runoff causing flooding

The runoff from the forested slope has been accounted for. See the Poise Engineering Report Paragraphs 8.2 and 8.3. The site is characterized by 2 catchment areas. The northern Catchment Area 1 consists of the northern forested area with gradients as steep as 50% and a flatter strip at the southern bottom end of the slope. This flat strip has a crest along its southern edge which falls across the site from west to east, and contains the runoff from the northern slope from flowing southward. This strip has a very slight fall eastwards towards a natural spring surrounded by a natural depressed pond at the base of the slope. The southern Catchment Area 2 is very flat by nature, generally less than 3 percent and falling southwards towards Keurboomstrand Road. The lowest point is in the south eastern corner of the site.

Currently, runoff from the slope infiltrates the ground quickly, as there is no record of extensive and/or persistent standing water on the site. This is consistent with the findings in the geotechnical report. Runoff from the slope is unlikely to be on the surface given the sandy soils, and is far more likely to occur as interflow through the soil. Therefore minimal surface water runoff is expected. If surface runoff occurred in a concentrated form at any point from the slope it would create distinct drainage lines, which are not evident (personal observation, J. Dabrowski, Aquatic Specialist). Regardless, to address the potential for this scenario (surface runoff from the slope), a 2m wide armourflex lined swale is included in the engineering report to act as a cutoff drain below the slope, which directs any surface water into the natural pond. This was considered acceptable from a water quality perspective as only clean water would be generated from the well vegetated slope.

There are no defined runoff exit positions from the site and the permeable conditions of the site allow that in the current state all rainwater falling on the site discharges through infiltration within the defined area of the site.
Keurboomstrand Road along the southern boundary of the site forms a barrier to runoff to the south in the unlikely event of extreme flooding conditions and insufficient discharge through infiltration.

The sites to the west and east of the site have similar characteristics and there is no significant overland (surface) discharge to or from either site boundary.

The total area of the site to be excluded from development is approximately 9.45 hectares. In the post-development state, rainfall over the undeveloped areas will continue to discharge via infiltration over those areas and toward the natural spring and pond.

7. Groundwater Impacts

7.1 Pollution/contamination due to irrigation

Refer to point 0 above on irrigation with treated wastewater as well as point 0 above on the long-term monitoring of groundwater which will be done.

7.2 Failure of WWTP

The sandy unsaturated zone effectively reduces the movement of biological contaminants, significantly limiting their potential to reach groundwater. However, it provides minimal resistance to chemical contaminants, allowing them to migrate more easily and increasing the risk of groundwater contamination (Appendix 20). This underscores the need for additional protective measures to manage chemical pollutants. These measures are discussed in section 4.5 and 4.9 in this document.

7.3 Recharge of groundwater due to development

Groundwater recharge occurs over a broad region rather than being site-specific, and considering the implementation of effective stormwater and infiltration management strategies, the development is not anticipated to significantly diminish the natural recharge of the aquifer. Instead, with proper planning and mitigation, it can coexist with the surrounding hydrological system while ensuring sustainable groundwater availability (DHS Groundwater, Appendix 20).

The site levels will be reshaped to drain toward the new ponds, and the surrounding pond catchment crest levels will be designed such that the overall site flood storage volume is not reduced from that of its current natural state. The site will continue to serve as a soakaway (Poise Engineering).

Refer the Poise Report paragraph 8.4. All roads and driveway will remain permeable. The impermeable roof areas will amount to approximately 25% of the development area. By nature of the stand layout roof areas will not be in a concentrated location but will be distributed around the development area. Roofs will discharge to Rainwater Harvesting tanks from which excess water will discharge on surface between and around the units. The landscape levels will be modified, however the gradients will remain extremely flat and the majority of runoff will therefore infiltrate the ground before reaching the ponds. Under heavy rainfall conditions runoff reaching the ponds will be stored in the ponds whilst the infiltration process is in progress. Water infiltration around the houses and from within the ponds will spread laterally by capillary action.

The impermeable areas will therefore have no negative impact on the groundwater recharge process.

8. Ecological, Environmental and Sensitive biodiversity concerns

The compliance statement of the aquatic specialist on the aquatic biodiversity (Confluent) states that:
Based on the results of the desktop review and the site survey, the sensitivity of aquatic biodiversity on Portion 91/304 can be regarded as **Low**. The main factors influencing the statement include the following:

The mapped aquatic features at the site are associated with estuarine habitat which is mapped according to the contours (5 m.a.m.s.l.) and not the actual habitat present. Ground-truthing of the site by the aquatic specialist confirmed no estuarine habitat present in remnant vegetation at the site, and no hydromorphic indicators in the soil that would indicate wetland conditions. This finding is consistent with previous specialist assessment by K. Coetzee and the Freshwater Consulting Group as indicated in the KELASP (2013).
While a natural spring and pond are present on the site, they are very small in extent and can be adequately protected from the development by implementing the 10m buffer during the construction and operational phases as indicated in this report. The presence of this feature is not sufficient to increase the sensitivity of the site to Very High, and it has been excluded from the development area in both SDP options. No stormwater runoff from the development or treated wastewater should be put into this pond as the water is of high quality.

According to the Keurbooms-Bitou Estuarine Management Plan the property and proposed development area are located above the 100-year floodline and outside of any ecologically sensitive areas associated with the estuary or Tshokwane wetlands. The latter point was confirmed during two site assessments.
Following feedback received from DEA&DP querying the level of groundwater at the site, a geotechnical study was compiled. Groundwater was only present in 2 of the test pits at an average depth of 2 m. For wetland or estuarine conditions to form, the soil profile must be periodically saturated in the plant root zone (upper 50 cm). This would need to happen for at least several months of the year to influence vegetation composition. As the groundwater level was substantially deeper than this, and no wetland / estuarine vegetation was observed at the soil surface, it is concluded that no estuarine or wetland habitat could form at the site.

The management of the remaining property area as an Open Space III zone will promote conservation outcomes. Sustainable rehabilitation and restoration of indigenous vegetation supported by sustainable income. Stewardship agreements can be considered in consultation with CapeNature but at the very least the landowner has agreed to rezone the area as Open Space III.

As per the EMPr mitigation measures that must be adhered to –

Appoint a Landscape consultant to recommend and implement the introduction of an indigenous landscape plan to protect the existing indigenous vegetation and to prepare a landscape plan for implementation in the private and common areas of the development. Prior to the commencement of

clearing the proposed building site, the contractor must undertake vegetation search-and-rescue on the site. This operation is a legal requirement to ensure that any endangered or suitable plant species are transplanted prior to work commencing on the erf.

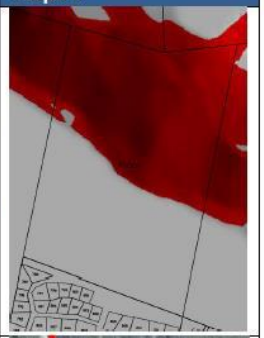
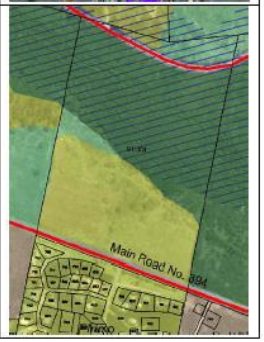
See EcoRoute Comments and Response report where the impact on the wetland corridor has been assessed by the aquatic specialist:
Impact on Wetland Corridor: as per the Aquatic Impact assessment (Appendix G2) the proposed residential development on Portion 91/304 is likely to have minimal to no impact on surface water resources or watercourses as defined in the NEMA and NWA. From the perspective of the DFFE screening tool the site has Low Sensitivity, and from the perspective of the NWA a Risk Matrix was completed with a Low Risk outcome. This is because the only definable watercourse on the site is a natural spring which overflows to an excavated pond which has been used for livestock watering for many decades. The number of stands has been reduced to 60, please refer to Appendix B1 for the preferred SDP. The preferred layout incorporates the recommended 20m animal corridor along the foot of the slope and forest area. All development and associated activities must remain outside of this buffer zone.

These concerns on sensitive biodiversity and vegetation clearance and regrowth of the site have been further noted and addressed in the EcoRoute Comments and Response report.

8.1 Plant species

According to the EcoRoute Comments and Response Report, the KELASP (2013) was reviewed from the perspective of the proposed development area (Dabrowski 2024). This report includes a thorough assessment of the Tshokwane Wetlands including various classifications of different wetland units, delineation of wetland areas, and development recommendations (Freshwater Consulting Group, 2013). Findings in the report relevant to proposed development at the site are summarised in Table 1.

Table 1. Summary of relevant features from the KELASP.

KELASP recommendations and guidelines	Graphic
Development on steep slopes with a gradient > 1:4 is not supported. The area highlighted in red represents the steeply sloping land on 91/304. *The development has been planned to avoid the steeply sloping areas.*	
Development is not supported in areas below the 1:50 and 1:100 year floodline. Lines indicated are: dark blue = 1:100 year floodline, and light blue area is an 'island' below the 1:50 year floodline. The purple line is the 100m urban coastal setback line. *The proposed development area is located outside of all these features, and is therefore not flagged from a heightened flood risk perspective.*	
Development is supported in transformed areas. The related graphic maps the southern portion of the site (proposed for development) as a 'Transformed Area' less sensitive to disturbance with opportunities for development and no natural habitat remaining. The relevant area is mapped in light green.	

Please refer to the Terrestrial Biodiversity, Plant and Animal Assessment attached as Appendix G5 -

The proposed development will be restricted to the lowland areas that were previously cultivated. The forest areas are therefore outside the proposed development footprint. On the basis of the presence of natural habitat within a CBA1 area and within a listed ecosystem, it is verified that the site occurs partially within an area of VERY HIGH sensitivity with respect to the Terrestrial Biodiversity Theme. These areas are not affected by the proposed development.

The lowland part of the site is not considered to be good habitat for any of the animal species flagged for the site. The impact assessment determined that the impact of the proposed development has Very Low significance on vegetation, protected trees, and animal species of concern. The proposed development is entirely within areas mapped as secondary or pasture that has low biodiversity value and sensitivity. The development is therefore supported on condition that forest habitats on the property are fully protected. Either option is acceptable, although Alternative 1 is marginally preferred.

The preferred layout incorporates a recommended 20m animal corridor along the foot of the slope and forest area. All development and associated activities must remain outside of this buffer zone. Management of the remaining property area as an Open Space III zone will promote conservation outcomes. Sustainable rehabilitation and restoration of indigenous vegetation supported by sustainable income (EcoRoute Comments and Response report).

8.2 Rehabilitation

While there are no watercourses where rehabilitation is required, the aquatic specialist (J. Dabrowski), provided a list of wetland plant species which can be planted around the margins of the pond to improve habitat for amphibians and water quality for wildlife making use of the natural pond. These plants can also be used in the stormwater ponds and are strongly recommended as alternatives to *Typha capensis* or *Phragmites australis*, both of which can become dominant and weedy, although they are indigenous. Plant species recommended include:

Isolepis prolifera; Eleocharis limosa; Persicaria decipiens; Wachendorfia thyrsiflora; Falkia repens; Juncus lomatophyllus; Juncus effusus.

8.3 Indigenous Estuarine and Wetland Habitat

In the aquatic specialist report it is stated that, though there are plant species on site that are typically associated with coastal, sandy habitats, they are not strictly associated with estuarine systems including the upper extent of the tidal zone. Furthermore, no estuarine species from any of the tidal habitats including saltmarsh or supra-tidal vegetation were identified at the site. These species would typically include rushes and sedges such as *Juncus kraussii*, *Cyperus laevigatus*, *Ficinia nodosa* or *Phragmites australis*.

According to the aquatic specialist (Confluent), soil augering at the site indicated deep, sandy, well drained soil with no textural change at 50 cm which could promote the development of wetland habitat. This is consistent with the mapped soil type in the area which is described as soils with limited pedological development (young soils with minimal organic matter), and a low clay content (< 15%).

Only remnant patches of indigenous vegetation were present on 91/304 and these contained a couple of large specimens of Milkwood trees (*Sideroxylon inermeis*) intermingled with *Searsia* sp. Shrubs which make up thicket areas. In the grazed open area which corresponds with the mapped EFZ, the dominant plant species are numerous candelabra flowers (*Brusvigia orientalis*), *Stenotaphrum secundatum* (Buffalo Grass), *Mesembryanthemum* spp. (ice plants), *Romulea* spp. (Froetangs), *Carprobrotus* sp., *Searsia crenata* (Dunekraaibessie), *Salvia aurea* (brown sage), and *Massonia longipes* (coastal hedgehog lily). While these species are typically associated with coastal, sandy habitats, they are not strictly associated with estuarine systems including the upper extent of the tidal zone. Furthermore, no estuarine species from any of the tidal habitats including saltmarsh or supra-tidal vegetation were identified at the site. These species would typically include rushes and sedges such as *Juncus kraussii*, *Cyperus laevigatus*, *Ficinia nodosa* or *Phragmites australis.*

8.4 Wildlife Corridor habitat

During site assessments for this property as well as adjacent properties to the east (unrelated to this project), it is evident that surface water features, such as the spring on this property, occur at the base of the steep slope. For wildlife at the site, this provides a source of fresh water. In most cases development is not proposed nor supported on the steep slopes but focusses on maximizing density on the flatter areas. The risk of this is that water sources become isolated 'islands' within developed areas which cannot be accessed by wildlife, and animals must adapt to life on steep slopes as level land is all developed.

This issue was highlighted with the development team and it was suggested that in addition to the 10m buffer around the pond, a 20 m wildlife corridor be established along the base of the steep slope which is continuous with neighbouring properties and remains unfenced. The purpose is to provide animals with sustained access to water and opportunities for movement in areas of low gradient. This also protects the slope base in terms of groundwater recharge which is an important function of this zone. The preferred SDP layout has accommodated an area larger than 10m around the pond, and includes a green corridor of 20m of relatively flat ground at the base of steep slopes. It is necessary to maintain these areas in their natural state and limit human use and disturbance. The purpose of retaining the pond and buffer, along with the green corridor is to maintain some open space for use by wildlife in an interconnecting corridor between properties that wish to develop (Aquatic specialist, Confluent).

The Risk Assessment Matrix (with an outcome of low, if mitigation measures are implemented), was done by the aquatic specialist (Confluent), which determined that certain mitigation measures must be implemented. Recommended control (impact mitigation) measures for protection of the spring, pond and buffer area during the construction and operational phase of the development are as follows:

The purpose of the pond and spring is to provide a sustained water source for wildlife in the green corridor. Landscaping and gardening staff must not undertake any clearing of vegetation inside of the 10m buffer. A bird hide in the buffer to spot wildlife would be acceptable, but no additional recreational activities. The point is to create a quiet habitat with suitable vegetation cover for continued use by animals, birds etc.

Indigenous plants found in adjacent thickets may be planted around the pond. Only indigenous plants found in the immediate surrounding area may be planted. A list of recommended wetland plants for that can be used to improve vegetation cover of muddy areas and marginal areas of the pond is provided in the aquatic specialist report. Do not place any fish into the pond as only alien invasive fish to the area would survive and could be transferred to other waterbodies on the feet of animals or birds. The only plants that should be removed from the area are listed alien invasive species.

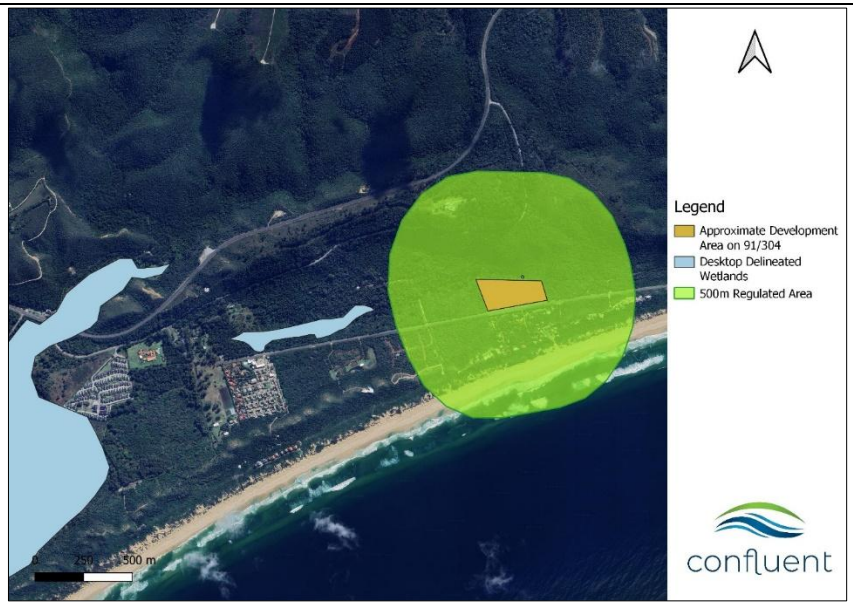
8.5 Light pollution

The EcoRoute Comments and Response report (Appendix 4) stated that as per the Visual Impact Assessment (Appendix G7 of the EIA report), effective light management needs to be incorporated into the design of the lighting to ensure that the visual influence is limited, without jeopardising operational safety and security. Several measures can be implemented to reduce light pollution and those relevant to the project:

- Where possible construction activities should be conducted behind noise/light barriers that could include vegetation screens.
- Low flux lamps and the direction of fixed lights toward the ground should be implemented where practical.
- Choose “full-cut off shielded” fixtures that keep light from going uselessly up or sideways. Full cut-off light fixtures produce minimum glare. They increase safety because you see illuminated people, cars, and terrain, not dazzling bulbs. If you can see the bright bulb from a distance, it’s a bad light. With a good light, you see lit ground instead of the dazzling bulb. “Glare” is light that beams directly from a bulb into your eye.
- The design of night lighting should be kept to a minimum level required for operations and safety
- The utilisation of specific frequency LED lighting with a green hue on perimeter security fencing.
- Where feasible, put lights on timers to turn them off each night after they are no longer needed

9. Need for a WULA

The need for a WULA is due to the development itself being in the regulated area of a watercourse, the spring, as defined in GN4167. The proposed package plant and possible irrigation with the treated water for the development, also necessitates an application for a 21(g) and 21(e) water use under the National Water Act (NWA), as it is the disposal of waste in a manner which may detrimentally impact on a watercourse, in this case the spring. No other watercourses as defined in the NWA are located within 500 m of the development area. Refer to the map below (Figure 12 of the aquatic specialist report) which shows the development area in relation to mapped wetlands. The wetlands indicated west of the site were identified by the freshwater consulting group and presented in the KELASP.



10. Conflict with the Spatial Development Plan

The urban edge in this area has been defined by the steep slope to the north and the 5m contour line which defines the Estuarine Functional Zone to the south.

As per EcoRoute Comments and Response Report , the reason why the proposed development area extends beyond the identified urban edge is because the Aquatic Assessment confirmed that the area contains no estuarine habitats and is below the 1:100-year flood line of the estuary and is thus not part of the estuarine functional zone, and for this reason, the 4,5 or 5m contour line has not been observed. The steep slopes and forest vegetation to the north have however been identified as sensitive and have been protected with a 20m buffer strip, which is of much greater ecological value than the limiting 5m contour line, which was proven in the specialist studies submitted, to be of no particular environmental consequence.

Furthermore, the SDF confirms that all land development applications for the use of land abutting an urban edge should be considered consistent with the SDF if the land has at any time in the past been used or designated for any urban development, which includes all development of land where the primary use of the land is for the erection of structures. In this case, the land was previously approved for a resort with 50 units, this has also been

acknowledged in the Keurboom Local Environs Spatial plan (see table D3) (Planning Space, Town and Regional Planners) and the old regional structure plan earmarked it for “Recreational purposes” (Planning Space Town and Regional Planners).

See comment (Appendix 6) from Bitou Spatial planning confirming that the proposal is considered to be consistent with the relevant forward-planning policy for the area and is therefore supported from a Spatial Planning perspective.

10.1 Proposed high density development

This is a comment which is noted but is not entirely relevant to the water uses applied for in the WULA and formed part of the EIA and town planning application for the development.

The town and regional planners, (Planning Space) advised that due to objections received, it is evident that the local community is predominantly concerned about the perceived high density of the development and the potential demographic it might attract, and how this may impact on their own property values. **To address the concerns of neighbouring residents, the development concept was revised.** Specifically, the density was reduced from 73 to 60 units, concurrently increasing property sizes from approximately 375 square meters to approximately 500 square meters. As a result, the development's gross density now stands at approximately 4 units per hectare, while the net density is approximately 10 units per hectare. These adjusted figures align more closely with the surrounding neighbourhood densities.

To provide further context for this density revision, the following table offers a comparative analysis with other developments in the vicinity. Notably, both the development density and property sizes are lower than those of the Milkwood Glen Development, the source of the majority of objections.

DEVELOPMENT DENSITIES IN THE AREA					
Development Name	**Property description**	**Status**	**Nr of Units**	**Property size**	**Density**
Candle wood	Pt 129, 92, 16 of 304	Lapsed but intend to reapply	50	37ha	1.3du/ha
Whale Haven		Implemented	17	3.9ha	4.4du/ha
Driftwood	Ptn 15/304	Implemented	5	3ha	1.7du/ha

Ptn 91/304	Ptn 91/304	Lapsed but intend to reapply	60	14.7ha	4.1du/ha
Milkwood	Ptn 14/304	Implemented	50	6.5ha	7.7du/ha
Keurbaai	Ptn of ptn 13	Implemented	11	1.3ha	8.46du/ha
Dolphin Wave	Ptn 12/304	GP approved 2016, road constructed - lapsed?	62	10,3ha	6,2du/ha
Ptn 10/304	Ptn 10/304	Rights granted in 2018 for 32 units	32	22ha	1.45du/ja
The Dunes	Re9/304	Implemented	143	11.7ha	12.6du/ha
Dune Park	Ptn 74/304	Implemented	41	2.1ha	19.5du/ha
Natures Path	Ptn 10 and 192 / 304	EIA granted 2018	98	6.8ha	14.4du/ha
Plett Manor	Ptn 3/304	Implemented	130	9.7ha	13.4 du/ha
Nautilus estate	Erf 1169	2 implemented	6	9.7ha	0.6du/ha

See point 4 in EcoRoute Comments and Response report: :

The density has been reduced from 73 to 60 to accommodate concerns raised by the local community. Property sizes has increase from average of 375m² to 450m², to be more in line with surrounding property sizes. Further specialist assessment has also revealed that an animal corridor of at least 20m along the foot of the hill would be more suitable than the previously proposed 10m buffer from the forest vegetation. This has been included in the Preferred Layout.

The concept of residential development at a net density of about 12 units per ha to the north of Keurboom Road has been established. The topography (steep slopes and low-lying potential flood prone areas) , vegetation and presence of wetland has also been pointed out as identified considerations that need to be investigated further should any development be planned in the area.

10.2 Changes to the natural beauty and rural character of the area

Many of the objectors echoed the assertion that the proposed middle-income residential development, characterised by what they perceived as high-density, is incongruous with the existing character of Keurboomstrand. However, it is important to note that this development shares significant similarities with other developments in the area, such as Milkwood Glen, and is unlikely to have a profoundly adverse impact on the character of the area. The development neither introduces exceptionally high densities nor a land use that is out of sync with its surroundings; it essentially represents a continuation of the prevailing housing landscape (Planning Space Town and regional planners).

10.3 Impact on the quality of life

Noted, but not relevant for the WUL application. It was commented that it will be taken into consideration during the EIA process (EcoRoute comments and response table)

10.4 Property Value

It is possible that there exists a misunderstanding regarding the nature of the affordability level of the housing being proposed. The developer's intention is to offer houses and properties at an approximate price point of R3,000,000. While this may still be beyond the means of many, it does present an opportunity for certain families to attain homeownership. Currently, there are no houses available in this price range, as confirmed by a brief search on Property 24 (Planning Space Town and regional planners)**.**

10.5 Character of the area

Many of the objectors echoed the assertion that the proposed middle-income residential development, characterised by what they perceived as high-density, is incongruous with the existing character of Keurboomstrand. However, it is important to note that this development shares significant similarities with other developments in the area, such as Milkwood Glen, and is unlikely to have a profoundly adverse impact on the character of the area. The development neither introduces exceptionally high densities nor a land use that is out of sync with its surroundings; it essentially represents a continuation of the prevailing housing landscape (Planning Space).

See comment (Appendix 6) from Bitou Spatial planning email confirming that the proposal is considered to be consistent with the relevant forward-planning policy for the area, and is therefore supported from a Spatial Planning perspective.

10.6 Agricultural land zoning of property

An application to the Bitou Municipality rezone the land from “Agriculture” to “Subdivisional Area” has been submitted. This application is currently being assessed. Furthermore, the property was originally earmarked in the Knysna Wilderness Plettenberg Bay Guide plan for “Recreational” purposes. This means that although the property has farm portion numbers and is zoned for agricultural purposes, it is exempt from the provisions of the Subdivision of Agricultural Land Act (Act 70 of 70). An exemption certificate from the Department of Environmental Affairs and Development Planning has been issued to confirm the above (See Attached Appendix 13).

An Agricultural Compliance Statement was compiled by Digital Soils Africa (DSA), attached as Appendix G1 (EcoRoute Comments and Response Report).

10.7 Sense of place

This is a comment which is noted, but is not relevant to the water uses applied for in the WULA and formed part of the EIA application for the development, See EcoRoute Comments and Response report:

Please refer to Annexure 1 for responses regarding Town Planning concerns. Please refer to the Visual Impact Assessment attached as Appendix G7. The well-positioned and designed development infrastructure allows for it to blend in very well with its surroundings and create minimal contrast in the landscape. The alternative 2 development layout option provides a slight advantage over the preferred and alternative 1 development layout options due to its lower density and more open space for landscaping to screen views from the road. But with the implementation of appropriate mitigation measures the preferred and alternative 1 development layouts can also be screened effectively screened from the road.

10.8 Visual, Socio-Economic, Tourism and Traffic impact on the community

It does not form part of the water uses applied for under the NWA 1998 for the WUL application. These concerns have been noted and addressed in the EcoRoute Comments and Response report. Extract from EcoRoute comments and response report:

Traffic Impact:
A Traffic impact study has been done, please see Appendix G 8 of the Draft BAR. It found no unacceptable levels of traffic or congestion. Under escalated (2025) background normal traffic conditions no problems are experienced at the affected junctions in terms of capacity. Access to the development can safely be accommodated from Keurboom Road (MR00394) provided the access is configured as indicated on the SDP attached as Appendix B1. ‘

The EIA done by ECORoute mentions that the proposed development is in line with the statutory planning vision for the area (namely the local Spatial Development Plan), and thus it is assumed that issues such as the cumulative impact of development in terms of character of the area and its resources, have been considered during the strategic planning for the area.

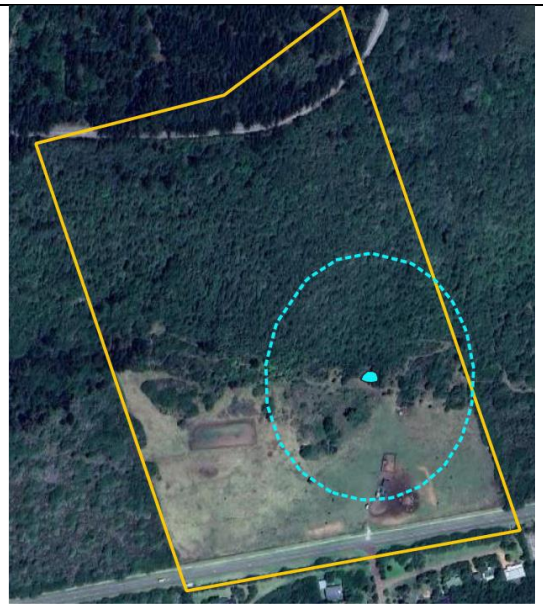
The EIA comments and response from ECORoute further stated with regards to the Spatial Development Framework (SDF) that the SDF confirms that all land development applications for the use of land abutting an urban edge should be considered consistent with the SDF if the land has at any time in the past been used or designated for any urban development, which includes all development of land where the primary use of the land is for the erection of structures. In this case, the land was previously approved for a resort with 50 units, this has also been acknowledged in the Keurboom Local Environs Spatial plan.

Furthermore, the SDF confirms that all land development applications for the use of land abutting an urban edge should be considered consistent with the SDF if the land has at any time in the past been used or designated for any urban development, which includes all development of land where the primary use of the land is for the erection of structures. In this case, the land was previously approved for a resort with 50 units, this has also been acknowledged in the Keurboom Local Environs Spatial plan (see table D3).

11. Concern about the development within 100m of a natural spring; Section 21(c) and 21(i) activities posing long-term threat to aquatic ecosystems

The proposed residential development is located in the Regulated Area of the spring as defined in GN4167 (Figure 15 under point 12 above). The development is therefore classified as a water use in terms of Section 21 c) and i) of the NWA. The Risk Assessment Matrix was applied to determine the level of risk posed by the development to the spring and pond provided all listed control measures are applied. The outcome of the Risk Matrix a Low Risk (Table 2 in the aquatic specialist report), and the control measures applicable are listed in Table 3 of the aquatic specialist report.

The below image shows the delineated pond excavated in front of a small spring on the site and a 100m buffer indicating the proposed development area (area mostly clear of vegetation) is within the regulated area of the watercourse. The purpose of the WULA is to provide the Department of Water Affairs with the necessary specialist studies that assess the level of risk posed by an activity to a watercourse.



The WULA is related primarily to the Section 21 e) and g) water uses. Irrigation with treated effluent is an activity identified in GN36820 of the NWA 1998, stipulates that if irrigation with treated wastewater takes place it is excluded from General Authorisation if not at least 50m above the 1:100 flood line or riparian habitat, whichever is the greatest, or alternatively at least 100 m from a water course, whichever is the greatest, or at least further than 500 m radius from a borehole that is utilised for drinking water or stock watering. In such case a WUL must be applied for, so that studies can be done to determine the impact it may have on surrounding groundwater and boreholes.

Table 2. Risk Assessment Matrix for anticipated Construction and Operational Phase impact for the proposed housing development on Portion 91/304 (this was compiled BEFORE it was known that Section 21 e) and g) uses would trigger the WULA).

Phase	Activity	Impact	Risk Ratings
Construction Phase (Site Preparation)	Earthworks and vegetation clearing for construction activities	Sedimentation of the pond resulting in poor water quality.	**LOW**
		Destruction of vegetation around the pond and spring.	**LOW**
Operational Phase	Inputs of stormwater from roofs and roads into the pond	Reduced physico-chemical water quality including the introduction of litter.	**LOW**
	Landscaping, gardening and maintenance extending into the pond and buffer area	Transformation of indigenous vegetation through planting, removal and / or dumping.	**LOW**
	Fencing	Habitat fragmentation and species movement restriction.	**LOW**

Table 3. Recommended control (impact mitigation) measures for protection of the spring, pond and buffer area during the construction and operational phase of the development.

Phase	Activity	Controls
Construction Phase (Site Preparation)	Earthworks and vegetation clearing for construction activities	• Pre-construction erect temporary fencing along the entire green corridor and open space to protect the pond as well as the corridor from impact during construction. • Add signage to the fence indicating the area as No-Go. • Site inductions for all staff must ensure contractors and works area aware they may not enter the pond and spring area.
	Inputs of stormwater from roofs and roads into the pond	• No stormwater infrastructure to be directed towards the pond. • Routine maintenance inspections to clear windblown / discarded litter from the pond and spring. • Stormwater should be diverted to detention ponds on the site which are indicated on various SDP layouts and are consistent with the SUDS approach to stormwater management.

Operational Phase	Landscaping, gardening and maintenance extending into the pond and buffer area	• The purpose of the pond and spring is to provide a sustained water source for wildlife in the green corridor. • Landscaping and gardening staff must not undertake any clearing of vegetation inside of the 10m buffer. • A bird hide in the buffer to spot wildlife would be acceptable, but no additional recreational activities. The point is to create a quiet habitat with suitable vegetation cover for continued use by animals, birds etc. • Indigenous plants found in adjacent thickets may be planted around the pond. Only indigenous plants found in the immediate surrounding area may be planted. • A list of recommended wetland plants for that can be used to improve vegetation cover of muddy areas and marginal areas of the pond is provided in this report. • Do not place any fish into the pond as only alien invasive fish to the area would survive and could be transferred to other waterbodies on the feet of animals or birds. • The only plants that should be removed from the area are listed alien invasive species.
	Fencing	• A perimeter fence is recommended along the northern section of the property to preserve the wildlife corridor and natural area beyond. The fenceline should not extend into the 20m corridor and should aim to separate the development area from the conservation / wildlife area. • Clear vu type fencing would have the important benefit of excluding pets (cats and dogs) from the wildlife corridor area where they could deter or kill wildlife large and small. • Fencing should not extend into the corridor on the neighbouring boundaries as the aim is to have an inter-connected corridor that extends across properties, should development occur in adjacent areas.

12 Risk of Mismanagement Due to Bias in Expert Consultation

The appointed specialists sign a declaration to declare and affirm that they are independent, with no business, financial, personal or other interest in the development proposal to compromise their objectivity. The specialists provided unbiased findings of site conditions and put measures in place to ensure the environmental protection as well as socio-economic considerations to meet the general requirements for a specialist. Uncertainties and assumptions must be highlighted in their reports.

13. Setting a precedent in Keurbooms and Plett if approve package plants

This is not the first development in Plettenberg Bay to seek approval with a package plant. The lack of capacity for municipal wastewater treatment and disposal is an issue affecting all new development proposals, and is also not restricted to Plettenberg Bay, as this issue is affecting other towns in the Garden Route. Without the option of package plants, no new residential development proposals would be possible. While package plants are not a perfect solution, there does not seem to be a feasible alternative apart from the no-go option. But if concerns about irrigating treated wastewater associated with this proposal meant the development could not be approved, then a moratorium on all development approvals, wherever capacity is exhausted, should be in place as the issue is pervasive.

14. Disruption of ecosystem, water resources and groundwater recharge due to development

Minimal disruption to the spring and associated pond is anticipated. This is because the 10m buffer is recommended during both the construction and operational phase. The spring's hydrology should be unaffected as the slope will not be modified in any way, and water quality in the pond should actually improve without the high numbers of horses using it. The pond is man-made in any event. From a terrestrial perspective, the open field with minimal vegetation cover where most of the development is proposed does not represent highly sensitive habitat, and is already a fragmentation of more dense vegetation either side of the property. This area is not utilised by any wildlife (apart from birds and smaller animals like tortoises). The transformation of this area for housing therefore represents minimal loss in terms of terrestrial biodiversity and plant species. The most sensitive vegetation is on the slope and that will not be disturbed at all. In fact, the 20m wide wildlife corridor along the slope base will conserve a level area with access to water (the spring) and open to neighbouring properties.

Regarding groundwater recharge, the stormwater management plan has proposed a number of SuDS-type stormwater interventions aimed at maintaining substantial areas of high permeability through permeable paving and stormwater attenuation ponds. Naturally high permeability of the soil at the site

means that water will continue to infiltrate across large areas of the site in spite of construction of houses. The base of the slope which has been set aside as the wildlife corridor is an important groundwater recharge zone, and this area will not be disturbed.

Milkwood Glen Homeowners Residents and Public Template type emails (As per introductory page, responses to this section are provided per topic following all the email comments)

COMMENTS

Bert Grobbelaar (KPOA):

The concern is as follows ;

1. For the last couple of years (more like the past 6 years the Keurbooms Property Owners Association (KPOA) has engaged in a number of ways and forums to try and get support and budget from the Bitou Council for upgrades to the services in /to Keurboomstrand village . These services are under constant strain (water , sewerage , electricity) but the Bitou Council have not consented to upgrades to be budgeted for in the short to medium term future. In peak periods , such as we will soon experience again during the Dec holidays , the services come under extreme strain - water shortages , sewerage overflowing , electricity interruptions . I have , in my own capacity , been battling for more than six years to get a sewer main connection to my property. As a seconded member of the KPOA Mngt team , I have been part of a number of submissions , proposals , objections to other developments etc. So much for the general situation, but what does it imply

2. Whilst I have no objection in principle to the proposed property development, I fail to understand where the development will find the capacity for potable water supply without further overloading the existing systems.

3. Likewise -even though a 'temporary 'effluent treatment plant is proposed , it is very unlikely that the mentioned anticipated upgrades by the Council will materialize within a decade (my guess)

4. So if this development is to be approved and goes ahead, we will have created a precedent and the greater area will face the existence of a number of such schemes to be put in place That in turn gives rise to the ultimate possible negative environmental impact in a sensitive biosphere. The developers and the Bitou Council. In the meantime you could perhaps take note of the above.

Yverne & Robert Butler yvernebutler@icloud.com

Notification of Public Participation Process for: The Proposed Residential Development on Portion 91 of Farm 304 Matjes Fontein, Keurboomstrand Good Morning, with regard to the above notice we have one logical objectionNotification of Public Participation Process for: The Proposed Residential Development on Portion 91 of Farm 304 Matjes Fontein, Keurboomstrand Good Morning, with regard to the above notice we have one logical objection:

1. The development should be done in the right sequence! Municipal sewerage system must be in place first ! You cannot guarantee that the municipality will upgrade , as you do not give a confirmed date. Your proposal is based on an assumption . Do first things first and in the correct way . A EMPORARY OPTION IS UNACCEPTABLE. Please, surely this is how it should be . We therefore object development until the sewerage system from municipality is in place .

Lance Faure, 082 880 2037, lfaure@isec.co.za

Objection to the Water Use Licence Application and Development on Portion 91 of Farm 304 Matjes Fontein
As a Keurbooms property owner and concerned citizen, I hereby strongly object to the proposed sewage treatment plant because…
There is a high risk of contaminating the ground water and natural spring located close by
There is a high probability of overflows etc causing bad smells as per the Angling club
I also strongly object to the proposed development because
It is against the stated development plans for the area that is part of the estuarine flood plan
It is not in keeping with the nature of Keurbooms natural beauty, quiet residential character and environmental standards
I bought there for the serenity of the place and I will fight tooth and nail to maintain this.Why must you spoil a beautiful place!!!!
There must be other alternatives

Nicky Hirschberg

I am against the proposed sewage treatment plant As a Keurbooms resident/Keurbooms property owner/Plett resident/Plett property owner, I am against the proposed sewage treatment plant because:

1. It has not been properly researched

2. They are not proven to work properly

3. The necessary skills to operate and maintain it are in short supply and there is a high probability of there being overflows and bad smells, same as at the Keurbooms Angling Club
4. There is a high risk of it contaminating the ground water and natural spring located within plus minus 100m of it

I am against the proposed development because:

1. It is not in keeping with the nature of Keurbooms natural beauty, quiet residential character, and high environmental standards
2. It is against the stated development plans for this area that is actually part of the estuarine flood plain
3. It will negatively impact the values of all properties in the vicinity
4. It will set a precedent that can be repeated in other areas of Keurbooms and Plett
5. Its a very scary and un settling thing to be happening. Kind Regards Nicky Hirschberg Owner of property and living in Milkwood Glen Estate.

Teddy Mudge, teddy@hoopmedical.com

Objections to WULA - Familie Roux Eiendomme (PTY) Ltd, Portion 91 of Farm 304 Matjiesfontein

I am writing regarding the Water Use License Application (WULA) submitted by Familie Roux Eiendomme (PTY) Ltd.

As a resident of Milkwood Glen Estate, situated across Keurbooms Road from the proposed development site, I have concerns about the potential impacts of this development.

1. The Keurbooms Valley and forested hills that lie North PO-394 road is an area of outstanding natural beauty and part of the attraction that draws tourism in the area. Development in this valley will result in the area losing its sense of place.
2. The entire valley on both sides of the road lies in the Keurbooms / Bitou estuary functional zone which is a natural flood plane of these rivers and which lies less than 5m above mean sea level.
3. The Keurbooms valley lies in the coastal zone where seawater and groundwater are connected via open aquifers. With sea level rise there will therefore also be a rise in ground water levels. Currently the mean groundwater level in the area of the proposed development is just 1.5m to 2m below ground level. This groundwater level will rise with climate change and sea level rise. Building on this low lying land will increase the risk and severity of flooding for existing neighboring properties
4. There is no mention in the WULA of rain water runoff in heavy rainfall from the steep (about 40% slope) forested area immediately north of the proposed development site on portion 91. We have observed that this adds to flooding of the proposed development site, which is often saturated and under water during heavy rains.

5. The proposed development site has historically served as a natural floodplain and plays a vital role in local water management specifically as a soak-away during and after heavy rainfall. It is very low lying land, only 4 - 4.5 meters above sea level, so during significant flooding events, such as those experienced in November 2007 and more recently in May 2023, this area has demonstrated its importance in flood attenuation. Water enters this low land in the valley from the surrounding steep terrain, which is a 40% slope above the proposed development site.

6. Given climate change projections that indicate: Increased frequency of extreme weather events, greater intensity of rainfall, rising sea levels affecting coastal water tables, I am concerned about compromising this natural flood defense system at a time when such buffers are becoming increasingly important.

7. The spring and the pond around the spring both located on the proposed development site, has provided essential fresh water to local wildlife namely: leopards, baboons, vervet monkeys, various antelope (including bush buck and duiker), wild bore, honey badgers, the cape clawless otter and a variety of frogs and a variety of birds and small mammals. The pond may also provide habitat to the critically endangered Knysna Leaf Folding Frog.

8. We have many nocturnal species endemic here including: Leopard, Fiery-necked nightjar and the Cape eagle-owl that would be particularly affected by light pollution from housing and security lights and increased traffic on the road.

9. The site currently provides essential ecosystem services including: Access to water for wildlife from the adjacent forest, a natural spring and pond that serve as crucial water sources for local wildlife, a wildlife corridor between the forest, water sources and the road.

10. The proposed development may significantly impact these functions through: increased human-wildlife interaction, restricted wildlife access to water sources, disruption of established wildlife movement patterns from increased light and noise pollution and through contaminating the wildlife's drinking water.

The application raises several infrastructure-related concerns:

1. Water Supply and Treatment:

   1.1 Current bulk water supply system capacity (1.0 ML/d) versus peak demand (2.3 ML/d)
   1.2 Proposed system capacity of 30 kL/day may be less than half of what's needed, in peak season it may be less than a third of what's needed for such dense development.

   1.3 There is a limited capacity at Ganse Vallei Wastewater Treatment Works

1.4 There are 8 other development competing for the same municipal resources

2. Effluent Management:

   2.1 Proposed irrigation within 100m of a natural spring

   2.2 This has potential impacts on groundwater and existing boreholes

   2.3 Management of retention ponds during heavy rainfall events, there will likely be over-flows or flooding of effluent into the ground water.

3. Temporary Wastewater Treatment System:

   3.1 Limited emergency storage capacity (48 hours)

   3.2 Dependency on both solar power and generator backup

   3.3 Uncertainty regarding municipal infrastructure upgrade timeline

   3.4 Maintenance and emergency response considerations, including a lack of maintenance an repair skills locally.

The application raises several concerns regarding the impact on existing properties:

1. The development as proposed may affect surrounding properties through:

   1.1 Potential impacts on local groundwater resources

   1.2 Stormwater management challenges

   1.3 Odor from sewage treatment facility

   1.4 Possible effects on property values

2. Changes to the natural and rural character of the area

I respectfully suggest that you deny this Water Use License Application due to the shortfalls listed below:

2.1 Alternative wastewater treatment solutions are needed. n such a pristine natural environment, these would need to significantly lower/remove the following: overflow risk, breakdown risk and risk of odor. These systems would need to be sized/specified for a peak season scenario using an acknowledged average water consumption metric and accounting got at least 4 persons per household for a 5-8 weeks peak season period.

2.2 Improved flooding risk mitigations including but not limited to civils-work for this property and other properties affected in the valley

2.3 Upgrades to the Municipal / Bitou supply of fresh drinking water, this area is currently strained during peak season.

2.4 Stronger wildlife corridor needed and better protection of our wildlife in this valley which includes coastal rainforests and indigenous lower lying coastal forests along with animals including leopards, all of which adds to the surrounding property values and to the local Plett / Bitou / Garden Route Tourism in general.

2.5 Reduced light pollution interventions

2.6 More robust emergency management procedures needed for sewage systems

2.7 Additional groundwater and borehole protection measures needed

Chantal Young, chantaltracy@hotmail.co.za

Good afternoon Objection to the Water Use License Application for the Proposed Housing Development on Portion 91 of Farm Matjes Fontein 304 As a long standing property owner at Milkwood Glen Estate erf 801, I object to the Water Use License Application submitted by Familie Roux Eiendomme (PTY) Ltd. for the reasons below:

1. Threats to Local Water Resources and Hydrology. Proximity to Critical Water Sources: The proposed development is situated alarmingly close to the Milkwood Glen Estate borehole, which is within 500 meters of the planned sewage treatment plant. This raises significant concerns about potential contamination, as untreated sewage spills or seepage could compromise the groundwater, a crucial resource for the community and local ecosystems. Vulnerability to Flooding: The site lies within the Estuarine Functional Zone (EFZ) and below the 5m contour line, which the Keurbooms-Bitou Estuary Management Plan (KBEMP) identifies as highly vulnerable to flooding. This area is already prone to inundation, a situation that will only worsen with climate change-induced sea-level rise and increased flooding. Policy documents like the Keurbooms and Environs Local Area Spatial Plan (KELASP) emphasize the need to avoid development in such sensitive zones to prevent environmental and safety risks. Hydrological Importance of the Site: The entire Keurbooms valley north of Keurbooms Road serves as a natural floodplain and soak-away area. Any disruption caused by impervious

surfaces from the development would exacerbate flood risks, with serious implications for nearby properties and the natural environment. Historical flooding events in the area, such as those in November 2007 and May 2023, highlight the crucial role this land plays in flood mitigation.

2. Insufficient Wastewater Management and Emergency Preparedness Complexity of the Sewage System: The reliance on a temporary Bio Sewage System until municipal upgrades are complete is deeply problematic. The system's operation demands specialized expertise, which is lacking locally. Mismanagement or failure could result in sewage spills, harming groundwater quality and the surrounding environment. Lack of Robust Emergency Plans: The emergency storage capacity of 48 hours is grossly inadequate. The risk of system malfunctions is particularly concerning during peak holiday seasons, when service providers are unavailable. A major incident, such as one occurring over Christmas, would likely overwhelm the system, leading to severe environmental and health hazards. Furthermore, the absence of a designated off-site pump station exacerbates the potential impact of overflow incidents.

3. Ecological and Environmental Concerns Degradation of Sensitive Ecosystems: The area identified for development overlaps with critical biodiversity zones, including estuarine and wetland environments that are ecologically fragile. Although the draft Basic Assessment Report (BAR) claims the site is primarily terrestrial, this assessment underestimates the environmental impact, particularly as the area serves vital ecological functions and is subject to future flooding risks. Failure to Consider Vegetation Recovery: The lower reaches of the site have historically been cleared to maintain development potential, but evidence suggests that secondary vegetation would naturally regenerate if left undisturbed. The BAR fails to account for this potential, misrepresenting the vegetation's sensitivity and downplaying the impact of the proposed development.

4. Visual, Socio-Economic, and Community Impact Impact on Scenic Quality and Tourism: Keurbooms Road is a designated scenic route, and the visual intrusion of a high-density residential development would degrade the area's rural character and sense of place. The 10m-wide vegetation buffer proposed as a mitigation measure is insufficient to shield the development from view, especially in the short to medium term. Negative Effects on Property Values and Livelihoods: Real estate professionals have warned that property values in Milkwood Glen Estate would decrease due to the proximity of a sewage treatment facility, increased development density, and loss of the area's unique rural ambiance. The visual and environmental degradation would also deter tourism, a critical economic driver for the local community. Socio-Economic Considerations Overlooked: The draft BAR has neglected to assess potential socio-economic impacts comprehensively, including tourism-related consequences and traffic congestion. The additional 73 households would place significant pressure on Keurbooms Road, which is already heavily used, particularly during peak tourist seasons.

5. Policy and Legal Shortcomings Inadequate Alignment with Spatial Plans: The proposed development extends beyond the areas designated for residential use in the Bitou Spatial Development Framework (SDF) and KELASP. These plans specify strict limitations on development within the floodplain and areas below the 4.5m contour, highlighting the necessity of a risk-averse approach. The development footprint's encroachment into these zones contradicts established planning guidelines and undermines the principles of sustainable development. Failure to Address Key Legislative Requirements: The draft BAR has failed to account for the full scope of environmental authorizations needed under the National Environmental Management Act (NEMA) and the Integrated Coastal Management Act (ICMA). Specifically, it overlooks Section 63 requirements, which mandate consideration of the impact on the coastal protection zone and broader community interests. Lack of Cumulative Impact Analysis: The BAR has not

adequately considered the cumulative environmental effects of the proposed development in conjunction with other planned projects in the area. Given existing water resource constraints and the frequent imposition of water restrictions by Bitou Municipality, this omission is a significant oversight.

6. Need and Desirability Concerns Questionable Justification for High-Density Housing: While there is a recognized need for affordable housing in Plettenberg Bay, the suitability of this specific site for a high-density development is dubious. The property is 7km from employment hubs, and the absence of public transport infrastructure would impose additional financial burdens on future residents. The draft BAR does not convincingly address these practical challenges.

   Alternative Development Options: The assessment of alternatives in the BAR is inadequate. It dismisses more environmentally suitable options, such as lower-density or eco-tourism developments, without thorough analysis. The selection of the current proposal appears driven more by economic feasibility than environmental or community well-being. MY PROPERTY IS THE CLOSESTS TO THE PROPOSED DEVELOPMENT AND FEEL THAT IT WOULD HAVE HUGE NEGATIVE IN PACT

Freund Oberholzer, freundoberholzer@gmail.com

Objection to the Proposed Development on Portion 91 of Farm Matjesfontein 304: Concerns About the Sewage Plant's Environmental Impact Dear Authorities, As a property owner at Milkwood Glen, I am writing to register my objection to the proposed development on Portion 91 of Farm Matjesfontein 304, Plettenberg Bay, with a specific focus on the significant environmental risks posed by the construction and operation of the planned sewage treatment plant. The introduction of a large-scale wastewater management system in such an ecologically sensitive area raises numerous concerns that have not been adequately addressed in the planning documents.

1. Threats to Water Quality and Aquatic Ecosystems** The proposed sewage treatment plant will be located alarmingly close to a natural spring and an excavated pond, features that are essential components of the local hydrology and support a range of aquatic species. Despite the developer's assurances, even minor failures or malfunctions in the sewage system could result in nutrient-rich effluent or untreated wastewater seeping into these natural watercourses. Such pollution could drastically alter water quality, leading to eutrophication, the destruction of aquatic habitats, and the loss of biodiversity. Given the sensitivity of the Keurbooms Estuary system, these risks must be taken seriously

2. Insufficient Buffer Zones and Risk of Contamination** The proposed 10-meter buffer zone between the sewage infrastructure and the natural spring is grossly inadequate. In the event of a system overflow or heavy rainfall, this narrow buffer would do little to prevent contaminants from entering the spring and surrounding wetlands. The wetlands and estuarine zones are vital for filtering water, supporting wildlife, and mitigating flood impacts. Any compromise to their ecological integrity due to contamination from wastewater could have far-reaching environmental consequences.
3. Inadequate Infrastructure and Reliance on Temporary Solutions**The draft Basic Assessment Report (BAR) acknowledges that the Bitou Municipality's current sewage infrastructure does not have the capacity to handle additional load from the proposed development. To address this, a temporary wastewater treatment plant will be installed until municipal upgrades are completed. However, no firm timeline or guaranteed funding

for these upgrades has been provided. This reliance on a temporary solution creates a risk of long-term environmental harm if the promised infrastructure improvements are delayed or never materialize. The area's high groundwater levels and flood risks make it particularly vulnerable to any failures in sewage management.

4. Potential for System Failures and Environmental Hazards** The sewage treatment plant's design includes measures such as an emergency storage tank with a 48-hour capacity and backup systems for power outages. However, these measures do not eliminate the risk of accidental discharges. In the case of power failures, mechanical breakdowns, or extreme weather events—which are becoming increasingly common due to climate change—the sewage system could overflow, releasing untreated or inadequately treated wastewater into the environment. The close proximity of the treatment plant to sensitive natural features heightens the potential for catastrophic contamination.

5. Impact on Groundwater and Soil Health** The construction of underground anaerobic tanks and extensive sewage infrastructure poses a risk to the soil and groundwater quality of the area. Any leakage from these tanks could result in long-term contamination of the soil and groundwater, affecting not only the local environment but also potentially impacting nearby properties that rely on clean groundwater. The high water table in this region increases the difficulty of safely managing wastewater, further amplifying the risk.

6. Concerns Over Effluent Reuse and Management** The plan to use treated effluent for irrigation and toilet flushing in the development raises questions about the long-term sustainability and safety of this approach. While this strategy aims to reduce potable water demand, there is a risk that improperly managed or poorly treated effluent could contribute to the degradation of soil and pose health hazards to humans and wildlife. Effective monitoring and ongoing maintenance will be required, but the responsibility and enforcement mechanisms for these actions remain unclear. ### Conclusion The environmental risks posed by the proposed sewage treatment plant are substantial and inadequately mitigated in the current development plans. The proximity of this facility to critical water bodies, the reliance on temporary solutions, and the inherent vulnerabilities of the local ecosystem make this project ill-suited for such a sensitive location. I urge the authorities to reconsider or demand significant revisions to the sewage management strategy to ensure the protection of our invaluable natural resources. You can not allow a sewerage plant to be erected right next to a fountain and within the Keurbooms river estuary catchment area. To state you have spent R15 mil and that is the reason for the development to continue is ludicrous.

Lucinda Mudge, lucinda@drawingroom.co.za

Subject: Objection to the Water Use License Application for the Proposed Housing Development on Portion 91 of Farm Matjes Fontein 304 I am a property owner of two properties at Milkwood Glen Estate and I hereby object to the Water Use License Application submitted by Familie Roux Eiendomme (PTY) Ltd. for the reasons below:

1. Environmental and Hydrological Concerns Inadequate Flood Risk Assessment: The proposed development site lies within a sensitive floodplain area near the 4.5m coastal setback line, identified as at risk from climate change-induced flooding and sea-level rise. Developing in this flood-prone zone not only endangers future residents but also exacerbates existing flood risks for neighboring properties, as demonstrated by previous severe inundations in November 2007 and May 2023. The Basic Assessment Report (BAR) fails to address these significant flood risks adequately.

Groundwater and Stormwater Issues: Local reports indicate high groundwater levels, and despite assurances of stormwater management measures, there are persistent concerns that heavy rainfall will lead to site flooding. The potential impact of elevated groundwater tables on infrastructure, and the risk of stormwater runoff contaminating the Keurbooms system, requires more robust evaluation and mitigation planning. Contamination Risks to Water Resources: The close proximity of the proposed sewage treatment plant to sensitive water features and the Milkwood Glen Estate borehole is alarming. The risk of untreated or inadequately managed wastewater contaminating the groundwater and nearby natural water bodies remains unmitigated. The lack of robust protective measures for these water sources is a glaring omission in the proposal.

2. Biodiversity and Ecological Impact
   Impact on Critical Biodiversity Areas (CBAs): The development site borders areas designated as CBAs, crucial for maintaining regional biodiversity. The BAR does not present a compelling plan for long-term environmental stewardship or measures to rehabilitate disturbed secondary vegetation. The high-density development would place unsustainable pressure on these natural habitats, threatening their ecological integrity. Loss of Natural Character and Sense of Place: The rural, scenic character of Keurbooms is central to both the local community and tourism economy. The development's dense layout, with small erven and minimal natural open spaces, is incompatible with this character. Claims of "ample open spaces" are misleading, given the site's physical constraints, including steep slopes and biodiversity buffer zones. The visual impact of dense development along a scenic route cannot be adequately mitigated through landscaping alone. Inadequate Environmental Management Plans: The Plett Enviro Forum has emphasized the necessity of a comprehensive Environmental Management Plan (EMP) that includes ongoing monitoring of biodiversity and water resources post-construction. The lack of a stewardship arrangement to manage conservation undermines the development's long-term sustainability.

3. Density and Land Use Policy Concerns Deviation from Spatial Development Framework (SDF): The proposal for 73 residential units significantly exceeds the 19 units recommended by the Bitou Spatial Development Framework (SDF) and the Keurbooms and Environs Local Area Spatial Plan (KELASP). This drastic increase in density lacks justification and sets a concerning precedent for future development, threatening the area's ecological and aesthetic values. Misalignment with Strategic Development Areas: The BAR incorrectly claims the development aligns with identified nodes in the KELASP, despite the project extending beyond the designated urban edge and into ecologically sensitive zones. This misalignment undermines established planning guidelines. Unfit Location for Middle-Income Housing: The site is unsuitable for middle-income housing, being 7km from Plettenberg Bay's core employment areas and lacking affordable public transport options. Developing housing in a remote, environmentally sensitive area is unsustainable and would impose financial burdens on future residents.

4. Infrastructure and Service Limitations Water and Sewer Capacity Issues: Conflicting information in the BAR and engineering reports raises doubts about the availability and reliability of municipal water and sewer services. The GLS Capacity Analysis acknowledges that the bulk water system is already at capacity and needs significant upgrades. Additionally, the sewage infrastructure cannot accommodate the development, and the proposed solutions lack clarity and feasibility. Rainwater harvesting and treated greywater as supplementary water sources are poorly justified and inadequately planned. Traffic and Accessibility Concerns: The absence of a comprehensive Traffic Impact Assessment is a major oversight. Keurbooms Road is heavily trafficked, particularly during tourist seasons, and the additional load from 73 new households will exacerbate safety and congestion issues.

5. Concerns Regarding the Proposed Sewage Treatment Plant High Risk of System Failures: The proposed sewage treatment plant introduces serious risks of environmental contamination. Inadequate planning for system breakdowns or power failures could lead to untreated sewage entering the local ecosystem, with catastrophic consequences for groundwater and nearby natural habitats. Potential Odor and Noise Pollution: The plant's operation may generate persistent odor and noise pollution, disrupting the area's tranquility and impacting the quality of life for nearby residents. Such disturbances are particularly concerning given the residential and tourist nature of Keurbooms.

6. Emergency Response and Capacity Concerns: The plant's emergency storage is limited to 48 hours, which is insufficient, especially during peak times such as holidays when services may be unavailable. The lack of detailed contingency plans for managing prolonged system failures or overflows increases the risk of widespread contamination.

7. Architectural and Design Considerations Lack of Detailed Architectural Guidelines: The proposal lacks specifics on architectural style and how green principles will be integrated. Details on energy efficiency, sustainable urban drainage systems (SUDS), and landscape design are absent. Given the sensitivity of the environment, locally indigenous plants must be used, and all design elements should minimize visual and ecological impacts. Potential for Habitat Fragmentation: The placement of housing units near steep slopes and biodiversity buffers risks fragmenting habitats and disrupting animal corridors. Extensive cut-and-fill operations may also lead to erosion, further impacting sensitive areas.

8. Cumulative and Long-Term Impacts Lack of Cumulative Impact Assessment: The BAR fails to consider the cumulative impact of this and other proposed developments on water resources and local ecosystems. The Goose Valley/Matjiesfontein/Wittedrift bulk water supply system is already under pressure, and additional development will only exacerbate these challenges. Setting a Dangerous Precedent: Approving this development would set a precedent for high-density housing projects in ecologically sensitive areas. The long-term impacts on biodiversity, water availability, and the community's character could be devastating.

'Karin Ireton' karin.ireton@gmail.com

I wish to formally object to the issuing of the proposed Water Use Licence in respect of the proposed housing development on Portion 91 of the Farm Matjes Fontein 304 in Keurboomstrand and call for the denial of this WULA. I am a property owner in Keurboomstrand, within the Milkwood Glen estate. There are significant reasons for my objections but specifically they can be summarised as follows:

1. Threats to the local ecosystem, local water contamination and threats to livelihoods, the potential for irreversible damage resulting from pollution, ground water contamination and severely underestimating the impact of 60 households on a highly sensitive property. A lack of local skills and funds to maintain the sewage system beyond its immediate construction.

2. The property is in close proximity to ecologically sensitive water bodies and flora and fauna. The planned development is within 100 meters of a natural spring and a pond that is vital to the local ecosystem (which is currently still home to wild populations of small animals) as well as to the

water supply to existing properties, particularly given current dramatic alternating floods and droughts being experienced along the coastline. Given the number of residences proposed the 10-meter buffer zone is both inadequate and cannot be controlled, with the likelihood of pollution and contamination of the natural spring and pond probable and highly significant. There is significant experience of construction processes doing irreparable damage and of residents following construction disrupting the sensitive fauna and flora both willingly as well as unintentionally by planting invasive species or damaging existing vulnerable species as well as coasting damage the aquatic environment. The National Water Act in Sections 21(c) and 21 (i) specifically addresses alterations and impediment of the natural flow and characteristics of water cours and activities which pose a long term threat to aquatic ecosystems, with consequential and significant impacts on the the area's biodiversity, affecting both fauna and flora. In addition,, the change in surface from natural flora and cover to hard, impervious surfaces, and the changes in gradient to the landscape (due to heavy construction vehicles as well as changes to "flatten" areas for building, parking, etc) will have a significant impact on flow and recharge of these natural water systems. The current application significantly understates these impacts, while from experience they are usually far more significant than initial studies indicate. The local area is already vulnerable from a water perspective and these developments place water for the existing community at risk as well as the local ecosystems and environment.

3. Insufficient Wastewater Management Infrastructure The dependence on "Temporary Sewage Treatment Solutions" is a major concern The reliance on a temporary bio-sewage system until municipal infrastructure upgrades are completed is an extremely worrying aspect. These systems require continuous and expert management, which may not be feasible due to local skill shortages and the likelihood that these will not be properly managed both during or after construction, particularly as the transfer of multi-dwelling properties is frequently messy and disruptive with a long history of developers walking away from their responsibilities prior to completion and of "new" property associations having neither the finances nor the will to take over projects that require significant and ongoing maintenance. Any failure or overflow could result in untreated sewage contaminating groundwater and nearby ecosystems, posing health risks to residents and wildlife. In addition of attracting disease vectors is high and the potential smell in the heat and low water periods is a potentially major disruptor in an area which relies heavily on tourism based entirely on its natural beauty. Uncertainty Surrounding Municipal Upgrades: The application indicates that upgrades to municipal wastewater infrastructure depend on future funding without a guaranteed timeline. This creates an unacceptable level of risk, as there is no assurance that the necessary infrastructure will be in place when needed.

4. Stormwater and Runoff Management Deficiencies There is a very high Risk of Contaminated Runoff: The site and surrounding area has highly permeable soil conditions which may not prevent, and may even facilitate the runoff of surface water polluted by construction debris and other pollutants from, vehicles, cleaning products, and other toxins into the adjacent spring and pond. The detention ponds are planned to manage runoff, but may not prove sufficient during extreme weather events, increasing the likelihood of flooding and water contamination. In addition, they may themselves seriously disrupt local recharge and flow systems. Adverse Effects on Local Ecosystems: Pollution resulting from construction and operational phases could negatively impact local wildlife that relies on the spring and pond. Although a wildlife corridor is proposed, it is unlikely to mitigate these risks, leading to potential declines in local biodiversity and threats to both the sensitive local ecosystem, fauna and flora.

5. Skilled Personnel for Wastewater Management Local Skills Shortage: Operating the proposed bio-sewage system effectively requires highly trained personnel, who are scarce in the area. Even routine municipal maintenance of long standing systems is bedevilled by skills shortages and in ability

to fund these actions would add to the problem once the developer starts handing over the site to new homeowners. Without consistent and ongoing expert oversight, system failures become more probable, increasing the risk of sewage spills. Such incidents could lead to significant groundwater contamination and public health hazards. Increased Risk of System Mismanagement: The absence of adequately skilled staff elevates the likelihood of operational malfunctions, which could jeopardize both the safety of residents and the sustainability of the development and enviornment, water systems and quality of life of individuals in the adjacent area.

6. Insufficient Emergency Spill Response and Contingency Planning Lack of Comprehensive Emergency Infrastructure: There is no robust emergency plan to address potential sewage overflows. This is an issue that is evident across the country, that once sewage spills are experienced without significant skill and cost the damage becomes ongoing and almost irreparable once the local wildlife, fauna and flora and public health is affected.. The absence of a designated pump station for off-site sewage removal exacerbates the issue. In the event of a system failure, sewage production will continue at a rate of 30 kL per day, compounding the environmental and health risks. This may be an underestimation during peak tourist season when many properties in the local area experience a flood of additional occupants. Inadequate Emergency Storage Capacity: The system's emergency storage is limited to a 48-hour capacity. Given that issues are more likely to occur during peak times—such as the December holiday season when emergency services are less accessible—this capacity is insufficient. A malfunction during a public holiday could be impossible to resolve within the 48-hour window, leading to significant environmental damage and cause future loss of revenue to tourist operators whose clients are unlikely to be sympathetic to sewage smells, contaminated water or any other problems associated with such failures. This directly affects the ability of individuals to earn a living and extract value from their existing properties.

7. Risk to Adjacent Water Sources Threat to Milkwood Glen Estate's Borehole Water Supply: The Milkwood Glen Estate depends on a borehole that provides water to all its residents. Situated within 500 meters of the proposed sewage treatment system, the borehole is at considerable risk of contamination from any sewage overflow or seepage. Safeguarding this vital water source is imperative, yet the proposed plans do not adequately mitigate this risk. Potential for Irreversible Groundwater Contamination: Contamination of this essential water source is unacceptable, as polluted borehole water is often irreplaceable and extremely difficult to remediate once compromised, particularly if there has also been disruption to the flow and recharge systems such as are likely due to the proposed development.

8. Underestimation of Sewage Production and System Capacity Limitations Inaccurate Water Usage Estimates: The proposed sewage system is designed for a daily treatment capacity of 30 kL, which allocates only 125 liters per person for a development of 60 houses with four occupants each. However, the average water usage in South Africa is approximately 237 liters per person per day. This significant discrepancy indicates that the sewage system is severely undersized, particularly during peak holiday seasons when homes are likely to have more occupants due to either “tourist” activity or “visiting friends and family”. Increased Infrastructure Strain During Peak Seasons: During periods of high occupancy, wastewater generation will exceed the system's capacity, heightening the risk of overflows and environmental damage. This underestimation reveals a fundamental flaw in the project's planning and threatens the reliability of the proposed wastewater management system.

9. Potential Devaluation of Surrounding Properties Negative Impact on Property Values Due to Environmental Risks: The proposed development introduces several environmental hazards, including potential water contamination and ecological disruption. These risks can diminish the natural

beauty and appeal of the surrounding area, making nearby properties less attractive to potential buyers. Perception of Increased Environmental and Health Risks: The proximity to a development with inadequate wastewater and stormwater management can deter prospective property purchasers. Concerns about pollution, health hazards, and environmental degradation can lead to decreased demand for properties in the vicinity, thereby lowering property values.Economic Consequences for Existing Homeowners: A decline in property values affects not only individual homeowners but can also have broader economic implications for the community. Reduced property values can lead to lower municipal revenues from property taxes, which may impact local services and infrastructure funding.

Conclusion: Please deny the proposed WULA
In light of the significant environmental risks, inadequate infrastructure planning, potential health hazards, and the probable devaluation of neighboring properties, it is strongly urged that the Water Use License Application for the proposed housing development be denied. The long-term welfare of the community and the preservation of local ecosystems must take precedence over the short-term gains of this project.

'David Netherway' davidgneth@gmail.com

Opposition to the Water Use License Application for the Proposed Residential Development on Portion 91 of Farm Matjes Fontein 304 As a property owner at Milkwood Glen Estate I object to this application for the reasons below:

1. Environmental Effects on Local Water Supplies Proximity to Delicate Water Features: The planned development lies within 100 meters of a natural spring and pond that are vital to the local ecosystem. Despite proposed mitigation efforts like a 10-meter buffer zone, there remains a substantial risk of pollution and disturbance to these water bodies during both the construction phase and after the development is operational. Modification of Watercourses: The activities described under Sections 21(c) and 21(i) of the National Water Act—specifically those that obstruct or alter the natural flow and characteristics of watercourses—pose a long-term threat to aquatic ecosystems. Such interference can lead to cascading effects on the area's biodiversity. Disruption of Groundwater Recharge: The introduction of impermeable surfaces and changes in the landscape's gradient are likely to disrupt natural groundwater recharge processes. These potential impacts are underestimated and could lead to enduring hydrological imbalances.

2. Inadequate Wastewater Management Systems Dependence on Temporary Sewage Solutions: The proposal to use a temporary biological sewage system until municipal infrastructure is upgraded raises serious concerns. Such systems require ongoing expert management, which may not be feasible given local skill shortages. Any malfunction or overflow could result in untreated sewage contaminating groundwater and nearby ecosystems. Uncertainty of Municipal Infrastructure Improvements: The application mentions that upgrades to the municipal wastewater infrastructure depend on future funding with no guaranteed timeline. This creates an unacceptable level of risk, relying heavily on uncertain municipal schedules.

3. Concerns About Stormwater and Runoff Management High Risk of Runoff Pollution: The site's permeable soil conditions may not sufficiently prevent surface runoff from carrying construction debris and pollutants into the nearby spring and pond. While detention ponds are planned to contain runoff, they may fail during extreme weather events, increasing the risk of flooding and water contamination. Disruption to Ecosystems: Potential pollution from both the construction and operational phases could negatively impact local wildlife that depends on the spring and pond. Although a wildlife corridor is proposed, it may not adequately mitigate these risks.

4. Lack of Skilled Personnel for Wastewater Management Shortage of Local Expertise: Effective operation of the proposed biological sewage system requires highly trained staff, who are scarce in the area. Without consistent expert oversight, the likelihood of system failures increases, raising the risk of sewage spills. Such incidents could significantly contaminate groundwater and pose public health hazards. Risk of Operational Failures: The absence of adequately skilled personnel heightens the probability of system malfunctions, jeopardizing the safety and sustainability of the development.

5. Inadequate Emergency Response and Contingency Planning Absence of Emergency Infrastructure: There is no comprehensive emergency plan for sewage overflows. The lack of a designated pump station to remove sewage from the site in case of a spill worsens the situation. If a failure occurs, sewage production will continue at a rate of 30 kL per day, exacerbating the problem. Limited Emergency Storage Capacity: The system's emergency storage can hold sewage for only 48 hours. Given that issues are likely to arise during peak periods—such as the December holiday season when emergency services are limited—this capacity is insufficient. For instance, a malfunction on December 25th would be difficult to resolve within the 48-hour timeframe.

6. Threat to Nearby Water Sources Risk of Contaminating Milkwood Glen Estate Borehole: The Milkwood Glen Estate relies on a borehole that supplies water to all its residents. Located within 500 meters of the proposed sewage treatment system, the borehole is at significant risk of contamination from any overflow or leakage. Protecting this water source is crucial, and the current plans do not adequately address this risk. Potential for Groundwater Pollution: Contaminating this essential water source is unacceptable, especially since polluted borehole water is often irreplaceable and challenging to remediate.

7. Underestimation of Sewage Generation and Capacity Limitations Inaccurate Estimates of Water Usage: The proposed sewage system is designed to handle 30 kL per day, allocating only 125 liters per person for a development of 60 houses with four occupants each. However, the average water usage in South Africa is 237 liters per person per day. This discrepancy suggests the sewage system is significantly undersized, particularly during peak holiday seasons when homes may have more occupants. Infrastructure Strain During Peak Seasons: In periods of high occupancy, wastewater production will exceed the system's capacity, increasing the risk of overflows and environmental harm. This underestimation reveals a fundamental flaw in the project's planning and undermines the reliability of the proposed wastewater management system.

'Dee Rissik' **deerissik@icon.co.za**

RE: Objection to Water Use License Application - Familie Roux Eiendomme (PTY) Ltd, Portion 91 of Farm 304 Matjiesfontein Dear Ms. Jordaan, I am writing as a concerned resident and property owner at Milkwood Glen Estate to express my strong objection to the Water Use License Application submitted by Familie Roux Eiendomme (PTY) Ltd. My objections focus specifically on critical water-related concerns that pose significant risks to both the environment and surrounding properties.

1. GROUNDWATER AND NATURAL WATER SYSTEMS a) Natural Spring Protection - The development site contains a natural spring with an excavated pond - The proposed 10m buffer zone is inadequate given the site's sensitivity - Development within 100m of the spring violates General Authorization requirements - Risk of contamination to this natural water source from:
    1. Construction activities
    2. Stormwater runoff from hardened surfaces
    3. Treated wastewater irrigation
    4. Potential sewage system failures b) Groundwater Impacts - High water table documented in the area (1.5-1.8m below ground level)
    5. The temporary wastewater treatment plant
    6. Three retention ponds
    7. Irrigation with treated effluent - Direct threat to Milkwood Glen Estate's borehole water supply
    8. No proposed groundwater monitoring system during operational phase
    9. Cumulative impacts on groundwater from multiple developments not assessed

2. FLOOD ATTENUATION AND STORMWATER MANAGEMENT
    1. Historical Flood Protection Role - Site serves as crucial natural floodplain and soakaway - November 2007 floods demonstrated vital flood attenuation function:
    2. Keurbooms River overflow was contained
    3. The Dunes Resort experienced 1.5m water depth
    4. Valley acted as essential buffer zone
    5. May 2023 storms reconfirmed site's flood management importance Climate Change Considerations - Increased frequency and intensity of extreme weather events - Rising sea levels affecting coastal water tables
    6. Historical flood patterns no longer reliable predictors - Greater need for natural flood buffers - Development would compromise essential flood defense at critical time
    7. Inadequate Stormwater Management
    8. Underground stormwater infrastructure deemed unfeasible - Retention ponds may overflow during heavy rains - No adequate provision for extreme weather events - Hardened surfaces will increase runoff and flood risk
    9. Cumulative impact of multiple developments not considered - No stormwater management plan for Keurbooms Road

3. MUNICIPAL WATER INFRASTRUCTURE CONCERNS
    1. Bulk Water Supply Limitations - Current system capacity: 1.0 ML/d - Peak holiday demand: 2.3 ML/d - System already significantly over capacity

2. No guaranteed timeline for infrastructure upgrades
3. At least eight other developments competing for same infrastructure
4. Regular water restrictions already imposed in area
5. Water Demand Calculations - South African average household usage: 237L per person per day - Realistic usage calculation for 60 houses: 60 houses × 4 people × 237L = 56.88 kL/day required
6. Higher usage expected during peak holiday periods
7. No provision for irrigation water requirements
8. No allowance for potential system losses

4. WASTEWATER TREATMENT RISKS
    1. System Capacity Issues - Proposed capacity: 30 kL/day - Actual requirement: minimum 56.88 kL/day
    2. System undersized by approximately 90%
    3. No capacity buffer for peak holiday periods
    4. No allowance for system inefficiencies
    5. Emergency Management Deficiencies - Only 48 hours emergency storage provided
    6. Inadequate contingency for: Extended power outages Equipment failure Holiday period breakdowns Maintenance delay
    7. No permanent connection to municipal system - Lack of qualified local maintenance personnel c) Treated Effluent Management Risks - 22.5 kL daily irrigation near residential areas - Irrigation within 100m of natural spring
    8. Three retention ponds with overflow risks - Potential contamination of wildlife water sources
    9. Risk to groundwater quality affecting local boreholes

5. WILDLIFE WATER ACCESS a) Critical Water Source - Natural spring and pond provide essential wildlife water access - Used by diverse species including:
    1. Resident baboon troops, Local leopard population, Indigenous bushbuck, Diverse bird species, Small mammals
    2. Access Impacts Proposed 20m wildlife corridor insufficient
    3. Water source access compromised by: Development footprint, Human activity, Light pollution, Noise disturbance
    4. Risk of contamination to wildlife drinking water
    5. Increased human-wildlife conflict around water sources

    CONCLUSION Based on these significant water-related concerns, I strongly urge the Department to reject this Water Use License Application. The proposed development presents unacceptable risks to: - Natural water systems and groundwater quality - Flood attenuation capacity - Already strained municipal infrastructure - Wildlife water access - Public health and safety - Property values and quality of life The magnitude of these water-related risks, combined with inadequate mitigation measures and infrastructure capacity, makes this development proposal untenable at this location.

'Carol Surya' <carolsurya@gmail.com

As a property owner and resident at Milkwood Glen I strongly object for the reasons stated below:

1. Environmental Risks to Local Water Resources Close Proximity to Sensitive Water Bodies: The proposed development is situated less than 100 meters from a natural spring and pond that are crucial to the local ecosystem. Despite the mitigation strategies suggested—such as a 10-meter buffer zone—the risk of contamination and disruption to these water sources during construction and ongoing operations remains significant. Alteration of Natural Watercourses: The activities described under Sections 21(c) and 21(i) of the National Water Act involve altering and impeding the natural flow of watercourses. Such actions pose long-term threats to aquatic ecosystems and can lead to a chain reaction affecting the area's biodiversity. Interference with Groundwater Recharge: The introduction of non-permeable surfaces and changes to the landscape gradient are likely to disrupt natural groundwater recharge processes. These potential impacts are downplayed in the application but could lead to lasting hydrological imbalances, affecting both the environment and local water availability.

2. Inadequate Wastewater Management Provisions Reliance on Temporary Sewage Treatment Systems: The plan to use a temporary bio-sewage system until municipal infrastructure is upgraded is deeply concerning. These systems require constant expert management, which may not be available due to local skill shortages. Any malfunction or overflow could result in untreated sewage contaminating groundwater and nearby ecosystems, posing serious health risks. Uncertain Municipal Infrastructure Upgrades: The application notes that municipal wastewater infrastructure improvements are dependent on future funding with no guaranteed timeline. This uncertainty introduces an unacceptable level of risk, as there is no assurance that necessary upgrades will occur promptly, if at all.

3. Insufficient Stormwater and Runoff Management High Potential for Runoff Contamination: The site's permeable soil conditions may not effectively prevent surface runoff from transporting construction debris and pollutants into the nearby spring and pond. Although detention ponds are proposed to manage runoff, they may not be adequate during extreme weather events, increasing the risk of flooding and water contamination. Negative Impact on Local Ecosystems: Contamination from construction and operational phases could harm local wildlife dependent on the spring and pond. While the proposal includes a wildlife corridor, it may not sufficiently mitigate these risks, potentially leading to a decline in local biodiversity.

4. Lack of Skilled Personnel for Wastewater System Management Deficit of Local Expertise: The effective operation of the proposed bio-sewage system requires highly trained personnel, who are scarce in the region. Without consistent expert oversight, the likelihood of system failures rises, increasing the risk of sewage spills and subsequent groundwater contamination. Risk of Mismanagement Due to Bias in Expert Consultation: It appears that the proposal has been prepared with input from experts who may have a vested interest in favoring the developer's objectives. This potential bias raises concerns about the reliability of the proposed management plans and the likelihood of overlooking critical operational challenges.

5. Inadequate Emergency Response and Contingency Planning Absence of Comprehensive Emergency Infrastructure: The proposal lacks a robust emergency plan for sewage overflows. The absence of a designated pump station for off-site sewage removal exacerbates the issue. In the event

of a system failure, sewage production would continue at 30 kL per day, intensifying environmental and health risks. Limited Emergency Storage Capacity: With only 48 hours of emergency storage, the system is ill-prepared for incidents, especially during peak periods like the December holidays when emergency services are less accessible. A malfunction during such times could lead to irreparable environmental damage before it can be addressed.

6. Threats to Adjacent Water Sources Risk to Milkwood Glen Estate's Borehole: The Milkwood Glen Estate relies on a borehole supplying water to all its residents. Located within 500 meters of the proposed sewage treatment system, the borehole is at significant risk of contamination from any sewage overflow or seepage. Protecting this essential water source is critical, yet the current plans do not adequately address this risk. Potential for Irreversible Groundwater Pollution: Contaminating this vital water source is unacceptable, as polluted borehole water is often irreplaceable and extremely difficult to remediate.

7. Underestimated Sewage Generation and System Capacity Inaccurate Water Usage Projections: The proposed sewage system is designed for a daily capacity of 30 kL, allocating only 125 liters per person for a development of 60 houses with four occupants each. Given that the average water usage in South Africa is approximately 237 liters per person per day, the system is significantly undersized. This discrepancy is especially concerning during peak holiday seasons when homes may house more occupants. Strain on Infrastructure During Peak Occupancy: Increased wastewater generation during high-occupancy periods will exceed the system's capacity, heightening the risk of overflows and environmental harm. This underestimation points to a fundamental flaw in the project's planning, potentially overlooked due to biased expert assessments favoring the developer.

8. Potential Devaluation of Surrounding Properties Decrease in Property Values Due to Environmental Concerns: The introduction of environmental risks such as potential water contamination and ecological disruption can diminish the natural appeal of the area. This makes nearby properties less attractive to potential buyers, leading to a decrease in property values. Perception of Increased Health and Environmental Risks: The proximity to a development with inadequate wastewater and stormwater management raises concerns about pollution and health hazards. This can deter prospective buyers, reducing demand for properties in the vicinity and negatively impacting property values. Economic Impact on Existing Homeowners: A decline in property values affects homeowners financially and can have broader economic implications for the community. Lower property values may result in reduced municipal revenue from property taxes, which could affect funding for local services and infrastructure.

   In summary Given the significant environmental risks, inadequate infrastructure planning, potential health hazards, and the probable devaluation of neighboring properties, it is strongly and urgently recommended that the Water Use License Application for the proposed development be rejected. The proposal appears to rely on expert assessments that may be biased in favor of the developer, potentially overlooking critical issues that could have long-term negative impacts on the community and the environment. It is imperative that the welfare of the local ecosystem and the interests of existing residents take precedence over the proposed project's advancement.

'Andrew Peck' andrewpeck888@hotmail.com

Formal Objection to Water Use License Application - Familie Roux Eiendomme (PTY) Ltd, Portion 91 of Farm 304 Matjiesfontein Dear Ms. Jordaan, As property owners and residents of Milkwood Glen Estate, located directly across Keurbooms Road from the proposed development site, we strongly object to the Water Use License Application submitted by Familie Roux Eiendomme (PTY) Ltd. The proposal presents unacceptable risks to environmental integrity, public health, and property values while threatening a pristine area of outstanding natural beauty.

1. ENVIRONMENTAL SIGNIFICANCE AND NATURAL HERITAGE
   Outstanding Natural Beauty and Tourism Value - The Keurbooms Valley and forested hills north of PO394 road represent an area of exceptional natural beauty - This pristine landscape is a crucial driver of tourism in the region - Development will irreversibly damage the area's sense of place and rural character - Loss of natural character will negatively impact tourism appeal and local economy B. Estuarine Functional Zone - Entire valley on both sides of road lies within Keurbooms/Bitou estuary functional zone - Area functions as natural flood plain for both rivers - Site lies less than 5m above mean sea level - Critical ecological role in estuarine system functionality

2. HYDROLOGICAL AND GEOLOGICAL CONCERNS A. Groundwater and Sea Level Dynamics - Valley lies in coastal zone with direct sea water/ground water connectivity via open aquifers - Current groundwater levels 1.5m-2m below surface - Predicted sea level rise will directly increase groundwater levels - Climate change implications not adequately addressed in application B. Surface Water and Runoff - No assessment of rainwater runoff from adjacent 40% slope forested area - Steep northern slope contributes significantly to site flooding - Site frequently saturated and submerged during heavy rains - Cumulative impact of multiple water sources not considered

3. CRITICAL WILDLIFE HABITAT A. Essential Water Source The spring and pond on site provide crucial fresh water access for diverse wildlife including: - Leopards - Baboon troops - Vervet monkeys - Various antelope (bushbuck, duiker) - Wild boar - Honey badgers - Cape clawless otter - Potential habitat for critically endangered Knysna Leaf Folding Frog- Diverse bird species and small mammals B. Wildlife Corridor Impacts - Development would severely restrict wildlife access to essential water - Proposed 20m corridor insufficient for wildlife movement - Increased human-wildlife conflict inevitable - Light and noise pollution affecting nocturnal species Fragmentation of established wildlife pathways

4. INFRASTRUCTURE AND CAPACITY CONCERNS A. Sewage System Inadequacies - Planned capacity (30 kL/day) vs. actual requirement (56.88 kL/day) System will operate at nearly 200% of capacity - No allowance for peak holiday period usage - Insufficient emergency storage (only 48 hours) - Lack of qualified local maintenance personnel B. Municipal Infrastructure Limitations - Current bulk water supply (1.0 ML/d) vs. peak demand (2.3 ML/d) - Gansevallei Wastewater Treatment Works at capacity - Eight other developments competing for same infrastructure - No guaranteed timeline for municipal upgrades - Regular water restrictions already imposed

5. FLOOD MANAGEMENT AND CLIMATE CHANGE A. Historical Flood Protection - Site serves as crucial natural floodplain and soakaway - November 2007 floods demonstrated critical flood attenuation role - May 2023 storms reconfirmed site's importance - Development would compromise essential flood defense system B. Climate Change Implications - Increased frequency and intensity of extreme weather events - Rising sea levels affecting coastal water tables - Historical flood patterns no longer reliable predictors - Natural buffer zones becoming more crucial

6. DIRECT THREATS TO EXISTING RESIDENTS A. Water Quality Risks - Milkwood Glen Estate's borehole within 500m of proposed sewage treatment - High contamination risk to drinking water supply - No proposed groundwater monitoring system Inadequate mitigation measures B. Property Impacts - Significant devaluation confirmed by local real estate experts - Loss of rural character and scenic views - Increased flood risk - Sewage treatment odors and pump noise Degradation of natural environment

   CONCLUSION This application must be rejected based on:
   1. Irreversible damage to an area of outstanding natural beauty
   2. Critical role in estuarine functional zone
   3. Unaddressed groundwater and sea level rise impacts
   4. Essential wildlife habitat destruction
   5. Severely inadequate infrastructure capacity
   6. Compromise of natural flood defense systems
   7. Direct threats to existing residents' water supply
   8. Significant negative impacts on property values
   9. Failure to account for climate change impacts The proposed development presents unacceptable risks to both the environment and surrounding communities.
      We urge the Department to protect this valuable natural heritage and reject this application.

'Dennis Cogzell' dcogsie@gmail.com

As a property owner at Milkwood Glen Estate I am writing to express my strong opposition to the proposed development on Portion 91 of Farm Matjesfontein 304, Plettenberg Bay
We bought our property at Milkwood Glen in 2002 due to the quiet nature and being away from the noise and pollution etc of the cities Currently we are letting out our cottage to holiday tenants and we are really sad to hear about all the proposed developments directly opposite Milkwood Glen, and in particular the proposed water purification/sewerage plant .Our concern is that the proposed facility will have a negative impact on the environment and also impact negatively on the possible tourism and holiday rentals in our estate. Weare concerned about the possible smell and air pollution due to the proposed water treatment plant As someone who deeply values our region’s rich biodiversity and unique natural beauty, I am gravely concerned that this project will lead to irreversible damage to critical habitats and compromise the long-term health of our environment. Including

Impact on Biodiversity and Critical Habitats

1. The proposed development site encompasses areas of immense ecological importance, including portions of a Critical Biodiversity Area (CBA) and land adjacent to the Estuarine Functional Zone (EFZ). These zones are vital for supporting a wide variety of plant and animal species, some of which may be endangered or uniquely adapted to these environments. According to the Biodiversity Assessment, there are already signs that

human encroachment has put immense pressure on the surrounding ecosystems. Developing high-density housing in such a sensitive area will exacerbate habitat fragmentation, disrupt wildlife corridors, and threaten the survival of indigenous species.

2. Degradation of Wetland and Estuarine Areas** The development footprint extends perilously close to wetlands and areas prone to flooding. Wetlands play a critical role in maintaining ecosystem balance, acting as natural water filters and serving as buffers against flooding. They also provide essential breeding and feeding grounds for various aquatic and bird species. Encroachment on these areas will diminish their ecological function, leading to a loss of biodiversity and worsening flood risks, particularly as climate change causes more extreme weather events. The Estuarine Functional Zone itself is an incredibly dynamic and sensitive system, where even small disruptions can have cascading effects on water quality and habitat stability. The draft Basic Assessment Report (BAR) underestimates the potential for long-term environmental harm, ignoring the precautionary principles necessary when dealing with such ecologically vulnerable zones.

3. Threat to Forest and Vegetative Cover**
   The northern slope of the property, covered in pristine indigenous forest, has been designated as having "Very High Sensitivity" in environmental reports. This forest acts as a crucial carbon sink and supports diverse wildlife. Developing 73 housing units would bring about significant deforestation and habitat degradation, putting immense pressure on this already stressed natural landscape. Furthermore, the project's reliance on small vegetation buffers as a means of mitigation is insufficient to prevent long-term damage to the ecosystem and fails to account for the ecological connectivity that large, contiguous natural areas provide.

   Conclusion We would really appreciate your urgent assistance to consider our objections

Eddie van Rooyen, eddievr@mweb.co.za

As property owners and residents at Milkwood Glen Estate, located directly across Keurbooms Road from the proposed development site, we strongly object to the Water Use License Application submitted by Familie Roux Eiendomme (PTY) Ltd. The proposal presents unacceptable risks to public health, environmental integrity, and property values.

1. CRITICAL HEALTH AND SAFETY CONCERNS
A.Immediate Threat to Milkwood Glen Water Source
- Our estate's borehole lies within 500m of the proposed sewage treatment plant
- High risk of contamination to our borehole water supply
- No proposed groundwater monitoring system No mitigation measures to protect our water source

B. Drastically Undersized Sewage System
- Planned capacity: 30 kL/day
- Actual requirement: 56.88 kL/day (based on SA average of 237L per person/day)

- System will operate at nearly 200% of capacity
- Even higher usage expected during peak holiday periods
- No capacity buffer for system inefficiencies

C. Inadequate Emergency Response Planning
- Only 48 hours of emergency storage provided
- No solution for holiday season breakdowns
- No pump station for sewage removal
- Continued sewage production during failures
- Local area lacks qualified maintenance personnel
- No contingency for extended breakdowns
- Reliance on both solar power and generator backup
- No guaranteed timeline for municipal infrastructure upgrades

2. ENVIRONMENTAL AND FLOOD MANAGEMENT RISKS

A. Historical Flood Protection Role
- Site serves as crucial natural floodplain and soakaway
- November 2007 floods demonstrated vital flood attenuation when:
  * Keurbooms River burst its banks
  * The Dunes Resort was submerged under 1.5 meters of water
  * Entire valley acted as essential buffer zone
- May 2023 storms reconfirmed site's flood management importance

B. Climate Change Implications
- More frequent extreme weather events predicted
- Increased intensity of rainfall events
- Rising sea levels affecting coastal water tables
- Historical flood patterns no longer reliable predictors
- Natural buffer zones becoming more crucial

C. Stormwater Management Failures
- Underground stormwater infrastructure deemed unfeasible
- Entire valley currently acts as soakaway
- Hardened surfaces will increase flood risk
- Retention ponds may overflow during heavy rains

- No adequate provision for extreme weather events
- No stormwater management plan for Keurbooms Road

3. INFRASTRUCTURE INADEQUACIES
   A. Municipal System Limitations
   - Bulk water supply system already at capacity:
     * Current capacity: 1.0 ML/d
     * Peak holiday demand: 2.3 ML/d
   - Gansevallei Wastewater Treatment Works lacks capacity
   - At least eight other developments competing for same infrastructure
   - Regular water restrictions already imposed
   - No guaranteed timeline for municipal upgrades

4. B. Treated Effluent Management Risks
   - 22.5 kℓ daily irrigation near residential areas
   - Irrigation within 100m of natural spring, violating General Authorization requirements
   - Three retention ponds that could overflow during heavy rains
   - Potential contamination of wildlife drinking water sources
   - Risk of groundwater contamination affecting local boreholes

5. WILDLIFE AND ENVIRONMENTAL IMPACTS
   A. Critical Wildlife Corridor
   - Site provides essential water access from adjacent rainforest
   - Steep forest slope forces wildlife to descend to development site
   - Natural spring and pond are crucial water sources for:
     * Resident baboon troops
     * Documented leopard population
     * Local bushbuck populations
     * Diverse bird species
     * Small mammals

   B. Development Impacts
   - Restricted wildlife access to essential water sources
   - Fragmentation of natural corridor between forest and water
   - Increased human-wildlife conflict

- Disruption of established wildlife movement patterns
- Compromise of proposed 20m wildlife corridor through:
  * Noise pollution
  * Light pollution
  * Human activity
- Particular impact on nocturnal species including:
  * Leopard
  * Fiery-necked nightjar
  * Cape eagle-owl

6. PROPERTY VALUE AND QUALITY OF LIFE IMPACTS

A. Direct Property Impacts
- Significant devaluation confirmed by local real estate experts
- Loss of rural character and scenic views
- Increased flood risk to properties
- Degradation of natural environment

B. Quality of Life Degradation
- Potential sewage treatment odors
- Noise from pump operations
- Risk of raw sewage spillage
- Increased density and traffic
- Loss of rural atmosphere

CONCLUSION

This application must be rejected based on:

1. Direct threats to public health through water contamination risk
2. Grossly inadequate sewage system capacity and emergency planning
3. Compromise of critical natural flood defense systems
4. Severe infrastructure capacity shortfalls
5. Disruption of essential wildlife corridors and water access
6. Significant negative impacts on property values and quality of life
7. Failure to account for climate change impacts
8. Inadequate stormwater management approach

Lisa Murray, lisajmurray59@gmail.com

Subject: OBJECTION TO PROPOSED WATER TREATMENT FACILITY TO SERVICE PROPOSED DEVELOPMENT ON ptn 91 of Matjesfontein 304 Keurboomsstrand As a resident of a neighboring Estate , I am extremely concerned about the “Temporary “ sewerage and water treatment facility that is proposed on ptn 91/304 Matjesfontein.

This critical ecologically sensitive property with its pristine natural “spring” plays a delicate role in the fragile ecosystem relied on by the present protected and in some cases endangered Fauna and Flora.

Natural springs are rare and should be protected- not threatened by greedy developments that push boundaries for the sake of money. If the current municipal sewerage and water systems cannot accommodate more load - then the proposed developments should be shelved until such time as the municipal systems can cope.

I OBJECT to this proposal in the strongest terms.

Chris Cogzell, chris.cogzell@gmail.com

Application for the Proposed Housing Development on Portion 91 of Farm Matjes Fontein 304
As a property owner at Milkwood Glen Estate I am writing to express my strong opposition to the proposed development on Portion 91 of Farm Matjesfontein 304, Plettenberg Bay, due to its potentially devastating impact on our estate and the impact on the surroundings.

We are in particularly concerned about the air pollution and smell that will be emitted from the proposed plant and possible health impact.
It will severely impact on possible holiday tenants and tourists that regularly stay in our estate

We have also consulted with the local environmentalists and they have highlighted the following;

1. Impact on Biodiversity and Critical Habitats*
   The proposed development site encompasses areas of immense ecological importance, including portions of a Critical Biodiversity Area (CBA) and land adjacent to the Estuarine Functional Zone (EFZ). These zones are vital for supporting a wide variety of plant and animal species, some of which may be endangered or uniquely adapted to these environments. According to the Biodiversity Assessment, there are already signs that human encroachment has put immense pressure on the surrounding ecosystems. Developing high-density housing in such a sensitive area will exacerbate habitat fragmentation, disrupt wildlife corridors, and threaten the survival of indigenous species.

2. Degradation of Wetland and Estuarine Areas*
   The development footprint extends perilously close to wetlands and areas prone to flooding. Wetlands play a critical role in maintaining ecosystem balance, acting as natural water filters and serving as buffers against flooding. They also provide essential breeding and feeding

grounds for various aquatic and bird species. Encroachment on these areas will diminish their ecological function, leading to a loss of biodiversity and worsening flood risks, particularly as climate change causes more extreme weather events.

The Estuarine Functional Zone itself is an incredibly dynamic and sensitive system, where even small disruptions can have cascading effects on water quality and habitat stability. The draft Basic Assessment Report (BAR) underestimates the potential for long-term environmental harm, ignoring the precautionary principles necessary when dealing with such ecologically vulnerable zones

3. Threat to Forest and Vegetative Cover**
   The northern slope of the property, covered in pristine indigenous forest, has been designated as having "Very High Sensitivity" in environmental reports. This forest acts as a crucial carbon sink and supports diverse wildlife. Developing 73 housing units would bring about significant deforestation and habitat degradation, putting immense pressure on this already stressed natural landscape. Furthermore, the project's reliance on small vegetation buffers as a means of mitigation is insufficient to prevent long-term damage to the ecosystem and fails to account for the ecological connectivity that large, contiguous natural areas provide.

4. Potential for Irreversible Ecosystem Damage**
   The cumulative impact of this development, along with other proposed projects in the area, has not been properly assessed. The proliferation of developments along the Keurbooms coastal corridor will magnify environmental stresses, further diminishing the natural assets that make this area unique. The Bitou Spatial Development Framework (SDF) and the Keurbooms and Environs Local Area Spatial Plan (KELASP) both caution against high-density projects that would degrade sensitive environments and set a dangerous precedent for future land use.

5. Climate Change and Flooding Risks**
   he development area is already susceptible to flooding, with parts of the property lying within or near the 1:100-year floodline. As climate change increases the frequency and intensity of storm events, the conversion of natural landscapes into hard surfaces will worsen stormwater runoff and increase flooding risks. This not only jeopardizes the new development but also puts surrounding natural and residential areas at greater risk. The proposed stormwater management strategies fail to fully account for these heightened risks, underscoring the need for a more cautious approach.
   Conclusion Our natural heritage is invaluable, and the proposed development poses a serious threat to the ecosystems that define and sustain the Keurbooms region. In the face of increasing environmental uncertainty and climate change, we must prioritize conservation and tread carefully when considering projects of this magnitude. I strongly urge the authorities to protect our fragile ecosystems by rejecting or significantly modifying this development plan to ensure it aligns with sustainable and environmentally responsible practices.

   We would really appreciate it if you could seriously consider the above objections

Andrew Duncan, andrew@andrewduncan.co.za

Dear Applicant for a WULA in respect of the above property I wish to object to this development. My wife and I are constant visitors to our children's home namely Milkwood Glen opposite the proposed development.

It is a critical feature of the area that it is an open wetland area sustaining wildlife and other natural incidents. This development will cancel this out entirely. It is objectionable because there is nothing stopping the developer, if indeed it gains the right to so develop the property, from awaiting the updated Gansevallei treatment plant to be completed. It cannot be right to interfere in the natural water resources of the area, and all the floodwater dangers, just to allow one to begin to build houses thereon, or apply to so construct houses.

The developer must await a proper urban solution to the sewerage problem if it wants to be part of an urban system. There is no guarantee whatsoever that the system proposed will even work as required, whatever the dangers from the floodwaters may be.

It seemed strange to me that the introductory paragraph refers to the property size being 17.7 hectares and then para 3.2 to it being 14.7. Is this type of error repeated in the technological aspects of the report as well? Not being competent in that field, I can't comment.

So I would urge the developer to exercise good grace and patience and wait until it makes sense to interfere with a delicate part of the earth

Marsha Roginsky, mroginsky@gmail.com

As a Keurbooms property owner in Milkwood Glen estate, located directly opposite the proposed development site, I'd like to submit my formal objection to the current Water Use Licence application for the proposed housing development on Portion 91 of Farm Matjes Fontein 304.

I am very much against the the proposed sewage treatment plant for the following reasons:

1. I am concerned about the treated sewage water flowing onto the land. There is a natural spring in the area and any ground water pollution will have a devastating effect on our estate's borehole water, which is less than 500m from the development site. We all rely on our borehole water, and the risk that this sewage treatment plant poses is unacceptable. Borehole water is very difficult to remediate once polluted.
2. The proposed development site is also within 100m of a natural spring and pond, which are obviously very integral to the local ecosystem. Despite the proposed mitigation measure of a 10m buffer-zone, the risk of contamination that it poses is highly significant.
3. These sewage treatment plants are not proven to work properly and the bad smells that we've witnessed at the Keurbooms angling club are a very high probability.
4. We all know that Plett has a local skills deficit. Without consistent monitoring, system failures become more likely, leading to the risk of sewage spills. This contamination will create a serious public health hazard.
5. It seems that the proposed system also has an inacurate water usage estimate. We know that in South Africa, our average water consumption sits at 237 L per person per day, however the proposed system is designed for a daily sewage treatment capacity of 30kL, which means it allows only 125 L consumption per person (for a development with 60 houses, 4 occupants per house). What would

happen during peak season, when homes are likely to be over occupied... This poses a further risk of overflow and environmental damage.

6. I am also against the development in general:
   This development is completely against the stated development plans for this area, which is part of the estuarine flood plain.
   The development is obviously not in keeping with Keurbooms' natural beauty - it has a quiet character and high environmental standards.

   I am concerned about my own property being devalued as a result and if this development goes ahead it will set a further precedent that will be repeated in other parts of Keurbooms, as well as Plett.

Margaret Ann Ford, margie@mosaicsetc.co.za

RE: Concerns Regarding Water Use License Application – Familie Roux Eiendomme (PTY) Ltd, Portion 91 of Farm 304, Matjiesfontein

I trust this letter finds you well. I am writing to you as a resident of Milkwood Glen Estate to express my significant concerns regarding the Water Use License Application submitted by Familie Roux Eiendomme (PTY) Ltd for the proposed development at Portion 91 of Farm 304, Matjiesfontein.

While I fully recognize the importance of development within our growing community, I feel compelled to raise several issues related to the potential impact on our water resources, local ecosystem, and overall community well-being.

Environmental Impact and Protection of Natural Water Resources

As a resident living in close proximity to the proposed development site, I have developed a deep appreciation for the area's natural water systems. The spring and pond located on the property are not only aesthetically valuable, but they also serve a critical function within our local ecosystem. Over the years, I have had the privilege of observing various wildlife, including resident baboon families and bushbuck, who depend on these water sources for survival. The presence of leopards in this area further underscores the ecological significance of these resources.

Given the vital role these water systems play, I am concerned that the proposed 10-meter buffer zone around the spring may not be adequate to ensure the protection of this delicate ecosystem. Specifically, the suggestion of irrigating treated wastewater within 100 meters of the spring raises substantial concerns regarding potential contamination of these vital water sources, which are crucial for local wildlife.
Floodplain Management and Natural Flood Protection

In addition to water quality concerns, I would like to highlight the importance of the natural floodplain on the property. Having resided here through significant flood events, including the 2007 floods and the more recent storms in May 2023, I have witnessed firsthand the invaluable role this valley plays in mitigating the impact of heavy rainfall. The natural floodplain functions as a natural sponge, absorbing and redirecting excess water,

thus preventing the risk of devastating flooding. With the increasing unpredictability of weather patterns due to climate change, it is essential that we preserve and protect these natural flood management systems.

Concerns Regarding Water Infrastructure Capacity I must also express my concerns regarding the capacity of our existing water infrastructure to accommodate the demands of the proposed development. Our community is already subject to water restrictions, and the addition of a large number of new homes will place further strain on an already stressed system.

During peak periods, such as holiday seasons, the current water supply often falls short of demand, with peak consumption reaching 2.3 ML/d compared to the available supply of 1.0 ML/d. This presents a significant challenge for our residents, many of whom have experienced the hardship of water shortages.

In addition, the proposed temporary wastewater treatment plant raises several issues:

1. Its proposed capacity appears inadequate for the number of homes planned.
2. The 48-hour emergency storage capacity may not be sufficient during high-demand periods, such as holidays, when access to maintenance services could be limited.
3. The proximity of the plant to our community's borehole water supply is a concern, particularly in terms of potential contamination risks. Protection of Local Wildlife One of the most cherished aspects of life in our community is the presence of local wildlife, much of which relies on the natural spring and pond for water. This includes baboons, leopards, various bird species, and bushbuck. While the proposed 20-meter wildlife corridor is a step in the right direction, I am concerned that human activity, noise, and lighting in the area may hinder these animals' access to their traditional water sources, especially considering the nocturnal nature of many of these species

Request for Reconsideration

In light of the above concerns, I respectfully request that the Water Use License Application be reconsidered, particularly with regard to the potential impact on our water resources and the local environment. I believe there may be alternative development strategies or locations that could better balance the need for growth with the preservation of our natural heritage

I would welcome the opportunity to discuss these issues further and explore potential solutions that would safeguard both our community's future and the ecological integrity of the area. Thank you for your attention to these important matters.

Marley Ford, marleyford46@gmail.com

RE: Concerns Regarding Water Use License Application – Familie Roux Eiendomme (PTY) Ltd, Portion 91 of Farm 304, Matjiesfo

I trust this letter finds you well. I am writing to you as a resident of Milkwood Glen Estate to express my significant concerns regarding the Water Use License Application submitted by Familie Roux Eiendomme (PTY) Ltd for the proposed development at Portion 91 of Farm 304, Matjiesfontein.

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As a resident living in close proximity to the proposed development site, I have developed a deep appreciation for the area's natural water systems. The spring and pond located on the property are not only aesthetically valuable, but they also serve a critical function within our local ecosystem. Over the years, I have had the privilege of observing various wildlife, including resident baboon families and bushbuck, who depend on these water sources for survival. The presence of leopards in this area further underscores the ecological significance of these resources.

Given the vital role these water systems play, I am concerned that the proposed 10-meter buffer zone around the spring may not be adequate to ensure the protection of this delicate ecosystem. Specifically, the suggestion of irrigating treated wastewater within 100 meters of the spring raises substantial concerns regarding potential contamination of these vital water sources, which are crucial for local wildlife.

Floodplain Management and Natural Flood Protection

In addition to water quality concerns, I would like to highlight the importance of the natural floodplain on the property. Having resided here through significant flood events, including the 2007 floods and the more recent storms in May 2023, I have witnessed firsthand the invaluable role this valley plays in mitigating the impact of heavy rainfall. The natural floodplain functions as a natural sponge, absorbing and redirecting excess water, thus preventing the risk of devastating flooding. With the increasing unpredictability of weather patterns due to climate change, it is essential that we preserve and protect these natural flood management systems.

Concerns Regarding Water Infrastructure Capacity

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During peak periods, such as holiday seasons, the current water supply often falls short of demand, with peak consumption reaching 2.3 ML/d compared to the available supply of 1.0 ML/d. This presents a significant challenge for our residents, many of whom have experienced the hardship of water shortages.

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2. The 48-hour emergency storage capacity may not be sufficient during high-demand periods, such as holidays, when access to maintenance services could be limited.
3. The proximity of the plant to our community's borehole water supply is a concern, particularly in terms of potential contamination risks.

Protection of Local Wildlife
One of the most cherished aspects of life in our community is the presence of local wildlife, much of which relies on the natural spring and pond for water. This includes baboons, leopards, various bird species, and bushbuck. While the proposed 20-meter wildlife corridor is a step in the right direction, I am concerned that human activity, noise, and lighting in the area may hinder these animals' access to their traditional water sources, especially considering the nocturnal nature of many of these species.

Request for Reconsideration
In light of the above concerns, I respectfully request that the Water Use License Application be reconsidered, particularly with regard to the potential impact on our water resources and the local environment. I believe there may be alternative development strategies or locations that could better balance the need for growth with the preservation of our natural heritage.

I would welcome the opportunity to discuss these issues further and explore potential solutions that would safeguard both our community's future and the ecological integrity of the area. Thank you for your attention to these important matters

'Kelly de Rosner' kellyderosner@gmail.com

Objection To Water Use License Application for Proposed Development/Portion 91

Objection to the Proposed Development on Portion 91 of Farm Matjesfontein 304: Risks to Groundwater Quality and Environmental Health
Dear Authorities,
As a concerned property owner at Milkwood Glen, directly across from the proposed development on Portion 91 of Farm Matjesfontein 304, I am writing to express my strong objections to this project. My main concern is the significant risk to groundwater quality posed by the planned sewage treatment plant and the increased impermeable surfaces associated with this development. The Keurbooms area, including Milkwood Glen, is characterized by its sensitive hydrology and high water table, and relies heavily on natural groundwater systems. Unfortunately, the current proposal fails to provide a sufficiently detailed analysis of the potential impacts on this vital resource.

1. High Water Table and Increased Risk of Contamination
The proposed development site lies in an area with a high water table, making it particularly vulnerable to groundwater contamination. The planned sewage treatment plant, which will be situated close to a natural spring and an excavated pond, poses a serious threat to the integrity of the groundwater. As a resident of Milkwood Glen, I am deeply concerned that the draft Basic Assessment Report (BAR) lacks a comprehensive hydrogeological study that evaluates how contaminants could spread if the sewage system were to leak or malfunction.

Any contamination could quickly infiltrate the groundwater, impacting not only the development site but also extending to neighbouring properties like those in Milkwood Glen. Contaminated groundwater would pose a significant health risk to local residents and could harm the delicate ecosystems in the Estuarine Functional Zone (EFZ), which depend on clean, unpolluted water .

2. Inadequate Buffer Zones and Protective Measures The proposal includes only a 10-meter buffer between the sewage treatment plant and the natural water bodies. This minimal buffer is far below what is considered safe in areas with a high water table. In similar sensitive environments, a much larger buffer zone is typically required, along with detailed groundwater modeling to ensure that potential pollutants do not migrate into the aquifer. The lack of these precautions in this proposal is concerning, as it increases the risk of groundwater contamination affecting properties in Milkwood Glen and the surrounding area.

3. Reliance on a Temporary Sewage Treatment Plant Increases Risk The plan to use a temporary sewage treatment plant until upgrades to the municipal system are completed adds another layer of risk. Temporary facilities are often more prone to operational issues, including equipment failures, leaks, and overflows, especially during heavy rainfall. The draft BAR does not include a comprehensive contingency plan for these scenarios, nor does it specify how monitoring will be conducted to detect early signs of contamination. This lack of foresight is alarming, as any failure could result in untreated effluent seeping into the groundwater, directly impacting the Milkwood Glen community .

4. Absence of a Detailed Groundwater Monitoring Plan A project of this scale and sensitivity should include a robust groundwater monitoring plan, yet the current proposal fails to outline one. For developments in areas like Keurbooms, where groundwater plays a critical role in sustaining both human and ecological health, regular and thorough groundwater testing is essential. Monitoring wells should be installed around the sewage plant site to track water quality before, during, and after construction. Without a detailed plan for ongoing monitoring, there is no assurance that potential contamination will be detected and mitigated in a timely manner .

5. Potential Long-Term Consequences for Milkwood Glen and Surrounding Areas The potential for groundwater contamination poses serious risks not only to the environment but also to property values in Milkwood Glen and the broader Keurbooms area. Clean, reliable groundwater is a key factor in the desirability of this region. Any degradation of water quality could lead to a cascade of negative effects, harming local wildlife, wetlands, and estuarine habitats, while also making the area less appealing to prospective buyers. Contaminated groundwater could significantly reduce property values, as buyers tend to avoid areas where water quality issues are known or suspected .

Conclusion

The current proposal for the development on Portion 91 of Farm Matjesfontein 304 is inadequate in its assessment of the risks to groundwater quality. The absence of a detailed hydrogeological study, the insufficient buffer zones, the reliance on a temporary sewage treatment plant, and the lack of a comprehensive groundwater monitoring plan all indicate a failure to address the potential for serious harm to our groundwater resources. As a property owner in Milkwood Glen, I am deeply concerned about the implications for our community and the surrounding

environment. I urge the authorities to require more thorough analysis and robust safeguards before considering approval of this development. Protecting our groundwater is essential to the health, safety, and financial well-being of the entire area.

'Hartwig Euler' **hartwig.euler@gmail.com**

Housing Development on Portion 91 of Farm Matjes Fontein 304

Formal Objection to the Water Use License Application for the Proposed Housing Development on Portion 91 of Farm Matjes Fontein 304

As an international homeowner of multiple properties in Milkwood Glen and Keurboomstrand who treasures the natural beauty of this area and frequently visits for holidays, I am deeply concerned about the proposed housing development and its potential negative impact on tourism and the local environment.

Threat to the Natural Environment and Tourism Appeal

1. Impact on Local Water Resources: The development is planned within 100 meters of a natural spring and pond that are essential to the local ecosystem and a significant draw for tourists. Any contamination or disruption of these water bodies during construction or operation could degrade the natural landscape, making it less appealing to visitors seeking pristine environments.

2. Alteration of Natural Watercourses: Activities under Sections 21(c) and 21(i) of the National Water Act involve altering the natural flow of watercourses, posing long-term threats to aquatic ecosystems. Environmental degradation can deter tourists who come to enjoy unspoiled nature, negatively affecting businesses that rely on tourism.

3. Disruption of Groundwater Recharge: Introducing impermeable surfaces and altering landscape gradients may interfere with natural groundwater recharge processes. This not only affects the environment but also diminishes the area's natural charm, potentially reducing tourist interest.

4. Inadequate Wastewater Management and Tourism Implications

- Reliance on Temporary Sewage Systems: The plan to use a temporary bio-sewage system until municipal upgrades are completed is worrisome. Any malfunction or overflow could lead to sewage spills, contaminating local waterways and beaches—key attractions for tourists. Such incidents could result in negative publicity, deterring visitors.
- Uncertainty of Municipal Infrastructure Upgrades: With no guaranteed timeline for municipal wastewater improvements, there is a prolonged risk of inadequate sewage management. This uncertainty can harm the area's reputation as a clean and safe tourist destination.

5. Insufficient Stormwater and Runoff Management

- Risk of Contaminated Runoff Affecting Recreational Areas: The potential for construction debris and pollutants to reach the spring, pond, and eventually the ocean poses a threat to water quality at nearby beaches. Poor water quality can lead to beach closures, directly impacting tourism.

- Negative Impact on Local Wildlife: The region's wildlife is a significant attraction for tourists. Pollution and habitat disruption could lead to a decline in biodiversity, reducing opportunities for nature-based tourism activities like bird-watching and hiking.

6. Lack of Skilled Personnel for Wastewater Management

- Risk of Mismanagement Leading to Environmental Incidents: The shortage of skilled personnel to manage the bio-sewage system increases the likelihood of environmental accidents. Such events can result in negative media coverage, harming the area's image and discouraging tourists.

7. Inadequate Emergency Response and Contingency Planning

- Potential for Prolonged Environmental Crises: Limited emergency storage and lack of robust contingency plans mean that any sewage system failure could result in extended environmental damage. Tourists planning visits during such times may cancel their trips, affecting local businesses and the economy.

8. Threat to Adjacent Water Sources

- Risk to Drinking Water Quality: Contamination of the Milkwood Glen Estate's borehole could lead to water quality advisories or bans. Such issues can tarnish the area's reputation among tourists, who may perceive the destination as unsafe or undesirable.

9. Underestimated Sewage Generation and System Capacity

- Overburdened Infrastructure During Peak Tourist Seasons: The proposed sewage system appears undersized, especially during holidays when tourist numbers—and thus water usage—increase. Infrastructure failures during these peak times can lead to unpleasant experiences for visitors, resulting in negative reviews and decreased future tourism.

10. Potential Devaluation of Holiday Properties

- Negative Impact on Property Investments: Environmental degradation and a decline in tourism can lead to a devaluation of properties in the area, including holiday homes owned by international visitors like myself. This not only affects individual investments but may also reduce overall foreign investment in the region.

Conclusion

The proposed development poses significant risks to the environment, the local tourism industry, and property values. As an international homeowner who contributes to the local economy through tourism, I strongly urge the authorities to reconsider this project. Preserving the natural beauty and ecological integrity of the area is crucial for maintaining its appeal to visitors and sustaining the livelihoods of those who depend on tourism.

'Sam Duncan' sam@flyphoto.co.za

Objection to the Proposed Development on Portion 91 of Farm Matjesfontein 304: Concerns About Inadequate Sewage Infrastructure and the Indefinite Use of a "Temporary" Sewage Treatment Plant

As a property owner in Milkwood Glen, I am writing to express my strong objection to the proposed development on Portion 91 of Farm Matjesfontein 304. My primary concern is the developer's plan to construct a sewage treatment plant, described as a "temporary" solution, due to the current lack of municipal sewage capacity. This approach raises serious issues regarding both the appropriateness of the development and the risk of allowing what may become a permanent, unplanned sewage facility in an area that is not equipped to handle it.

1. Development Should Align with Existing Municipal Capacity
   The current municipal sewage infrastructure in Keurbooms is already operating at or near full capacity, as acknowledged in the draft Basic Assessment Report (BAR). Approving a new development that exceeds the existing capacity of municipal services is irresponsible and inconsistent with sound urban planning principles. Municipal capacity constraints exist for a reason: to ensure that developments are sustainable and do not place undue strain on local infrastructure. Allowing this project to proceed without addressing the underlying infrastructure limitations sets a dangerous precedent and undermines the long-term planning efforts of the Bitou Municipality.

2. No Defined Timeline for "Temporary" Sewage Treatment Plant The developer's proposal includes the installation of a "temporary" sewage treatment plant until upgrades to the municipal system are completed. However, there is no concrete timeline provided for when these municipal upgrades will occur, nor is there any guarantee that the necessary funding will be available. Without a clear end date, the so-called temporary plant could easily become a permanent fixture, bypassing the proper regulatory and environmental scrutiny that a permanent facility would require. This uncertainty is unacceptable, particularly in a sensitive area like Keurbooms, where the environmental and community impacts of a long-term sewage facility have not been fully assessed.

3. Risk of Indefinite Operation and Lack of Accountability
   The indefinite use of a "temporary" sewage treatment plant raises serious concerns about accountability and oversight. Temporary systems are often not designed for long-term use and may lack the necessary resilience to handle ongoing sewage demands, particularly as the population increases with the new development. If the plant remains operational beyond its intended short-term use, there is a high risk of system failures,

environmental contamination, and increased maintenance issues. Yet, the application does not include specific provisions for how the developer will be held accountable if the temporary facility continues to operate for an extended period.

4. Inadequate Planning and Community Impact The proposal to rely on a temporary sewage solution highlights the lack of proper planning and disregard for the existing community. Milkwood Glen and the surrounding Keurbooms area are characterized by thoughtful, low-density developments that respect the limitations of local infrastructure. In contrast, this proposal appears rushed and incomplete, attempting to sidestep the fundamental issue of insufficient municipal sewage capacity. Approving such a plan would impose undue risks and potential nuisances—such as odours, noise, and increased maintenance traffic—on existing residents who chose this area for its quiet, natural character.

5. Failure to Align with Sustainable Development Practices Sustainable development requires careful consideration of long-term infrastructure needs and environmental impacts. By moving forward with a temporary sewage facility without a clear plan for integration into the municipal system, the developer is effectively ignoring these principles. The temporary plant is not only a stopgap measure but also a potential environmental hazard, particularly given the high water table in Keurbooms and the proximity of sensitive natural features like wetlands and springs. The lack of a detailed, time-bound plan for transitioning to a permanent municipal system is a critical flaw that should not be overlooked.

Conclusion
The current proposal for the development on Portion 91 of Farm Matjesfontein 304 should not be approved until the developer can demonstrate that it aligns with the existing municipal sewage capacity. A temporary sewage treatment plant, without a defined timeline or funding commitment for necessary upgrades, poses significant risks to the environment and the community. Allowing the developer to proceed under these conditions would set a dangerous precedent and could lead to the indefinite operation of an unplanned, inadequate sewage facility in the heart of a sensitive residential area. I urge the authorities to reject this application or require a clear, enforceable plan for integrating the development into the municipal sewage system before any construction is allowed to begin.

'Jo Balzer' balzer@zol.co.zw

OBJECTION TO THE WATER USE LICENSE APPLICATION FOR THE ORIOISED HOUSING DEVELOPMENT ON PORTION 91 OF FARM MATJES FONTEIN 304

Please find below my letter of objection to the above, kindly acknowledge receipt.

With reference to the proposed Water Use Application for the proposed Housing Development on Portion 91 of Farm Matjes Fontein 304, I as an owner and resident of Keurbooms, wish to make known my objection to the proposed sewage treatment plant, for the following reasons:

1. 1.It is my belief that this has not been properly and fully researched;

2. They have not been proven to work properly;
3. The necessary skills to operate and maintain it are lacking and there is every likelihood of there being overflows and bad smells such as those at the Keurbooms Angling Club;
4. The risk of contamination to the ground water and natural spring located within plus/minus 100m of it is very high;
5. I am against the proposed development because:
6. It is not in keeping with the nature of Keurbooms natural quiet residential character and beauty, with high environmental standards;
7. It is against the stated development plans for this area that is actually part of the estuarine flood plain;
8. It will negatively impact the values of all properties in the vicinity;
9. It will also set a precedent that can be repeated in other areas of Keurbooms and Plett.

I trust my concerns will be taken into serious consideration when making deliberations.

Helen Mudge, helen@troy.za.net

I am an Interested and Affected Party to this Development (Portion 91 of 304 Matjes Fontein, Keurboomstrand, Plettenberg Bay), and live in Milkwood Glen opposite the proposed development. I live in Milkwood Glen, opposite the land concerned. I am opposed to the development in every way. My comments will be submitted together with those of others by Cullinan & Associates, Environmental Attorneys, but thank you for this reminder.

Riccardo Pugliese

ATTENTION: DEPARTMENT OF WATER AND SANITATION Formal Objection to the Water Use License Application for the Proposed Housing Development on Portion 91 of Farm Matjes Fontein 304 As a registered I&AP and someone who regularly rents a holiday home in this beautiful area, I am deeply concerned about the proposed housing development and its potential negative impact on the environment and local tourism. If this development proceeds, I will unfortunately have to reconsider returning here for future vacations.

1. Threat to the Natural Environment and Visitor Experience Impact on Local Water Resources: The development is planned well within 100 meters of a natural spring and pond that are integral to the local ecosystem and a major draw for visitors. Any contamination or disruption of these water bodies during construction or operation could degrade the natural landscape, diminishing the area's appeal to tourists like myself who value its pristine environment. Alteration of Natural Watercourses: Activities under Sections 21(c) and 21(i) of the National Water Act involve altering the natural flow of watercourses, posing long-term threats to aquatic ecosystems. Environmental degradation can deter visitors who come to enjoy unspoiled nature, negatively affecting the local tourism industry. Disruption of Groundwater Recharge: The introduction of impermeable surfaces and alterations to the landscape may interfere with natural groundwater recharge processes. This not only affects the environment but also reduces the area's natural charm, potentially discouraging tourists.

2. Inadequate Wastewater Management and Its Impact on Tourism Reliance on Temporary Sewage Systems: The plan to use a temporary bio-sewage system until municipal upgrades are completed is worrisome. Any malfunction or overflow could lead to sewage spills, contaminating local waterways and beaches—key attractions for visitors. Such incidents could result in negative publicity, deterring tourists and impacting businesses that rely on tourism. Uncertainty of Municipal Infrastructure Upgrades: With no guaranteed timeline for municipal wastewater improvements, there is a prolonged risk of inadequate sewage management. This uncertainty can harm the area's reputation as a clean and safe destination for holidaymakers.

3. Insufficient Stormwater and Runoff Management Risk of Contaminated Runoff Affecting Recreational Areas: The potential for construction debris and pollutants to reach the spring, pond, and eventually the ocean poses a threat to water quality at nearby beaches. Poor water quality can lead to beach closures, directly impacting visitors' experiences and discouraging repeat visits. Negative Impact on Local Wildlife: The region's wildlife is a significant attraction for tourists. Pollution and habitat disruption could lead to a decline in biodiversity, reducing opportunities for nature-based activities that many visitors, including myself, greatly enjoy.

4. Lack of Skilled Personnel for Wastewater Management Risk of Mismanagement Leading to Environmental Incidents: The shortage of skilled personnel to manage the bio-sewage system increases the likelihood of environmental accidents. Such events can result in negative media coverage, harming the area's image and making it less likely for tourists to choose this destination.

5. Inadequate Emergency Response and Contingency Planning Potential for Prolonged Environmental Crises: Limited emergency storage and lack of robust contingency plans mean that any sewage system failure could result in extended environmental damage. Visitors planning holidays during such times may cancel their trips, affecting the local economy and deterring future tourism.

6. Threat to Adjacent Water Sources Risk to Drinking Water Quality: Contamination of local water sources, such as the Milkwood Glen Estate's borehole, could lead to water quality advisories or bans. Such issues can tarnish the area's reputation among visitors, who may perceive the destination as unsafe or undesirable.

7. Underestimated Sewage Generation and System Capacity Overburdened Infrastructure During Peak Tourist Seasons: The proposed sewage system appears undersized, especially during holidays when tourist numbers—and thus water usage—increase. Infrastructure failures during these peak times can lead to unpleasant experiences for visitors, resulting in negative reviews and decreased future tourism.

8. Personal Decision Not to Return if Development Proceeds Impact on Personal Holiday Plans: The potential environmental degradation and diminished natural beauty resulting from this development would significantly reduce the enjoyment of my holidays in this area. If the development goes ahead, I will choose alternative destinations for future vacations. Broader Implications for Tourism: Many visitors share my appreciation for the unspoiled environment of this region. The loss of repeat visitors like myself could have a cumulative negative effect on the local tourism industry, affecting businesses and employment in the area.

Conclusion The proposed development poses significant risks to the environment and the local tourism industry. As someone who contributes to the local economy through regular holiday visits, I strongly urge the authorities to reconsider this project. Preserving the natural beauty and ecological integrity of the area is crucial for maintaining its appeal to visitors and sustaining the livelihoods of those who depend on tourism. If the development proceeds, not only will it impact the environment, but it will also result in the loss of visitors like myself who value the area's pristine condition.

Dennis Cogzell, dcogsie@gmail.com

Objection to the Water Use License Application for the Proposed Housing Development on Portion 91 of Farm Matjes Fontein 304

As a property owner at Milkwood Glen Estate I am writing to express my strong opposition to the proposed development on Portion 91 of Farm Matjesfontein 304, Plettenberg Bay

We bought our property at Milkwood Glen in 2002 due to the quiet nature and being away from the noise and pollution etc of the cities Currently we are letting out our cottage to holiday tenants and we are really sad to hear about all the proposed developments directly opposite Milkwood Glen, and in particular the proposed water purification/sewerage plant.

Our concern is that the proposed facility will have a negative impact on the environment and also impact negatively on the possible tourism and holiday rentals in our estate. Weare concerned about the possible smell and air pollution due to the proposed water treatment plant

As someone who deeply values our region’s rich biodiversity and unique natural beauty, I am gravely concerned that this project will lead to irreversible damage to critical habitats and compromise the long-term health of our environment. Including ;

1. **Impact on Biodiversity and Critical Habitats** The proposed development site encompasses areas of immense ecological importance, including portions of a Critical Biodiversity Area (CBA) and land adjacent to the Estuarine Functional Zone (EFZ). These zones are vital for supporting a wide variety of plant and animal species, some of which may be endangered or uniquely adapted to these environments. According to the Biodiversity Assessment, there are already signs that human encroachment has put immense pressure on the surrounding ecosystems. Developing high-density housing in such a sensitive area will exacerbate habitat fragmentation, disrupt wildlife corridors, and threaten the survival of indigenous species

3. **Degradation of Wetland and Estuarine Areas** The development footprint extends perilously close to wetlands and areas prone to flooding. Wetlands play a critical role in maintaining ecosystem balance, acting as natural water filters and serving as buffers against flooding. They also provide essential breeding and feeding grounds for various aquatic and bird species. Encroachment on these areas will diminish their ecological function, leading to a loss of biodiversity and worsening flood risks, particularly as climate change causes more extreme weather eventsThe

Estuarine Functional Zone itself is an incredibly dynamic and sensitive system, where even small disruptions can have cascading effects on water quality and habitat stability. The draft Basic Assessment Report (BAR) underestimates the potential for long-term environmental harm, ignoring the precautionary principles necessary when dealing with such ecologically vulnerable zones

4. **Threat to Forest and Vegetative Cover** The northern slope of the property, covered in pristine indigenous forest, has been designated as having "Very High Sensitivity" in environmental reports. This forest acts as a crucial carbon sink and supports diverse wildlife. Developing 73 housing units would bring about significant deforestation and habitat degradation, putting immense pressure on this already stressed natural landscape. Furthermore, the project's reliance on small vegetation buffers as a means of mitigation is insufficient to prevent long-term damage to the ecosystem and fails to account for the ecological connectivity that large, contiguous natural areas provide.

   Conclusion We would really appreciate your urgent assistance to consider our objections

Marty Reddering, martyredd.ring@gmail.com

Objection to proposed Water Use License : Familie Roux Eiendomme (PTY) Ltd, Portion 91 of Farm 304 Matjiesfontein

As a Milkwood Glen Estate resident I am very concerned about, and strongly opposed the proposed development.

There are a number of environmental concerns I have as a resident across the road to this site, and I particularly object to the proposed sewage plant - in my experience sewage plants always have a bad smell nearby, and it is very unfair that it is proposed to be built close to our residential complex.
We also rely on income from AirBnB visitors to our home (which is over the road from the proposed development), which may be negatively affected by the development and sewage plant.

In addition, the site is a wonderful natural ecosystem which provides water for wildlife from the forest, as well as having a beautiful natural spring and pond for local wildlife.

The proposed development may significantly restrict wildlife access to water sources, disrupt the established wildlife movement patterns and increase polllution of all kinds.

I do not believe that the proposed 20m wildlife corridor would in any way help preserve the natural wildlife habitat and nocturnal species .

I am also concerned about flood management considerations, effluent management and infrastructure capacity.

As a property owner, I am deeply concerned about the changes to the character and nature of the area; the potential impacts on local groundwater resources,
stormwater management challenges and the possible effects on property values.

I thank you for noting my objections.

'leonard stoch' leonard.stoch@outlook.com

Objection -
Ref 571 Keurboomstrand

We agree with the objections as submitted by Hartwig Euler (Erf 574 Keurboomstrand and Milkwood Glen)

Objection to the Proposed Development on Portion 91 of Farm Matjesfontein 304: Concerns About the Sewage Treatment Plant and Premature Application for Infrastructure Approval

As a resident of the surrounding Keurbooms area, I am writing to object to the proposed development on Portion 91 of Farm Matjesfontein 304. My concerns are focused on the planned sewage treatment plant, which poses significant risks to our local environment and community. Additionally, I question the appropriateness of the developer seeking approval for such a critical piece of infrastructure before building rights for the development itself have even been granted. This sequence suggests a lack of proper planning and undermines the usual process of evaluating the broader impacts of the project.

1. Premature Application for Sewage Plant Approval It is highly irregular for a developer to request permission to construct a sewage treatment plant before securing the necessary building rights for the development. The approval of a sewage facility should be contingent on a thorough review of the entire development plan, including its density, layout, and potential environmental impacts. By applying for the sewage plant in advance, the developer is effectively trying to bypass the proper sequence of approvals, which compromises the integrity of the decision-making process. How can the authorities consider approving a key piece of infrastructure without first confirming that the broader project has met all planning, environmental, and community requirements?

2. Potential Environmental Risks from the Sewage PlantThe proposed sewage treatment plant is planned for a location close to sensitive natural features, including a spring and wetland areas. Even modern sewage systems are not immune to leaks or malfunctions, especially in areas with high groundwater levels like Keurbooms. The risk of untreated or inadequately treated effluent entering the groundwater system could have devastating effects on local water quality, affecting both the environment and nearby properties. Given the proximity to water bodies that contribute to the Keurbooms Estuary, any contamination could disrupt vital ecosystems and harm aquatic life, impacting the overall health of the area.

3. Lack of Detailed Risk Assessment and Mitigation PlansThe draft Basic Assessment Report (BAR) lacks sufficient detail about the potential risks associated with the sewage treatment plant. While the proposal mentions mitigation measures, these are vague and do not include specific plans for monitoring water quality, preventing leaks, or addressing potential failures. A project of this scale, in such an environmentally sensitive location, requires a comprehensive risk assessment that includes detailed contingency plans and clear guidelines for ongoing maintenance and monitoring. The absence of these critical elements raises serious questions about the viability and safety of the proposed sewage facility

4. Impact on the Character of the Keurbooms Area The Keurbooms area is valued for its natural beauty, quiet residential character, and high environmental standards. Introducing a sewage treatment plant, especially in the absence of an approved development plan, is out of step with the community's expectations for sustainable, low-impact growth. The visual and potential odour impacts of the facility could significantly alter the character of the area, reducing its appeal for both current residents and prospective buyers. This change is inconsistent with the careful, environmentally conscious development that has defined the region up to this point.

5. Strain on Local Infrastructure and Incomplete Planning The developer's reliance on a temporary sewage treatment plant until municipal upgrades are completed is another point of concern. Temporary systems are often more prone to issues such as leaks and equipment failures. Additionally, there is no clear timeline or funding commitment for the necessary upgrades to the municipal system, creating uncertainty about how long the temporary facility will be in operation. This incomplete approach to planning increases the risk of environmental harm and places an unnecessary burden on local infrastructure.

Conclusion
The current proposal to install a sewage treatment plant before obtaining building rights for the development is premature and undermines the proper review process. The potential environmental risks, lack of detailed planning, and impact on the character of the Keurbooms area are significant concerns that have not been adequately addressed. I respectfully urge the authorities to deny the request for sewage plant approval until the full development plan has been evaluated and all necessary rights have been granted. This project requires a more thoughtful, comprehensive approach that prioritizes the health and well-being of our community and environment.

'Veronica Rorich' veronica@rorich.co.za

RE: Formal Objection to Water Use License Application - Familie Roux Eiendomme (PTY) Ltd, Portion 91 of Farm 304 Matjiesfontein

As a property owners and residents of The Waves Estate, located on the Keurbooms Road close to the proposed development site, I strongly object to the Water Use License Application submitted by Familie Roux Eiendomme (PTY) Ltd. The proposal presents unacceptable risks to environmental integrity, public health, and property values while threatening a pristine area of outstanding natural beauty.

1. ENVIRONMENTAL SIGNIFICANCE AND NATURAL HERITAGE

A. Outstanding Natural Beauty and Tourism Value
- The Keurbooms Valley and forested hills north of PO394 road represent an area of exceptional natural beauty
- This pristine landscape is a crucial driver of tourism in the region
- Development will irreversibly damage the area's sense of place and rural character
- Loss of natural character will negatively impact tourism appeal and local economy

B. Estuarine Functional Zone
- Entire valley on both sides of road lies within Keurbooms/Bitou estuary functional zone
- Area functions as natural flood plain for both rivers
- Site lies less than 5m above mean sea level
- Critical ecological role in estuarine system functionality

2. HYDROLOGICAL AND GEOLOGICAL CONCERNS

A. Groundwater and Sea Level Dynamics
- Valley lies in coastal zone with direct sea water/ground water connectivity via open aquifers
- Current groundwater levels 1.5m-2m below surface
- Predicted sea level rise will directly increase groundwater levels
- Climate change implications not adequately addressed in application

B. Surface Water and Runoff
- No assessment of rainwater runoff from adjacent 40% slope forested area
- Steep northern slope contributes significantly to site flooding
- Site frequently saturated and submerged during heavy rains
- Cumulative impact of multiple water sources not considered

3. CRITICAL WILDLIFE HABITAT

A. Essential Water Source
The spring and pond on site provide crucial fresh water access for diverse wildlife including:
- Leopards
- Baboon troops
- Vervet monkeys
- Various antelope (bushbuck, duiker)
- Wild boar

- Honey badgers
- Cape clawless otter
- Potential habitat for critically endangered Knysna Leaf Folding Frog
- Diverse bird species and small mammals

B. Wildlife Corridor Impacts
- Development would severely restrict wildlife access to essential water
- Proposed 20m corridor insufficient for wildlife movement
- Increased human-wildlife conflict inevitable
- Light and noise pollution affecting nocturnal species
- Fragmentation of established wildlife pathways

4. INFRASTRUCTURE AND CAPACITY CONCERNS

A. Sewage System Inadequacies
- Planned capacity (30 kL/day) vs. actual requirement (56.88 kL/day)
- System will operate at nearly 200% of capacity
- No allowance for peak holiday period usage
- Insufficient emergency storage (only 48 hours)
- Lack of qualified local maintenance personnel

B. Municipal Infrastructure Limitations
- Current bulk water supply (1.0 ML/d) vs. peak demand (2.3 ML/d)
- Gansevallei Wastewater Treatment Works at capacity
- Eight other developments competing for same infrastructure
- No guaranteed timeline for municipal upgrades
- Regular water restrictions already imposed

5. FLOOD MANAGEMENT AND CLIMATE CHANGE

A. Historical Flood Protection
- Site serves as crucial natural floodplain and soakaway
- November 2007 floods demonstrated critical flood attenuation role
- May 2023 storms reconfirmed site's importance
- Development would compromise essential flood defense system

B. Climate Change Implications
- Increased frequency and intensity of extreme weather events
- Rising sea levels affecting coastal water tables
- Historical flood patterns no longer reliable predictors
- Natural buffer zones becoming more crucial

6. DIRECT THREATS TO EXISTING RESIDENTS

A. Water Quality Risks
- Milkwood Glen Estate's borehole within 500m of proposed sewage treatment
- High contamination risk to drinking water supply
- No proposed groundwater monitoring system
- Inadequate mitigation measures

B. Property Impacts
- Significant devaluation confirmed by local real estate experts
- Loss of rural character and scenic views
- Increased flood risk
- Sewage treatment odors and pump noise
- Degradation of natural environment

CONCLUSION

This application must be rejected based on:
1. Irreversible damage to an area of outstanding natural beauty
2. Critical role in estuarine functional zone
3. Unaddressed groundwater and sea level rise impacts
4. Essential wildlife habitat destruction
5. Severely inadequate infrastructure capacity
6. Compromise of natural flood defense systems
7. Direct threats to existing residents' water supply
8. Significant negative impacts on property values
9. Failure to account for climate change impacts

The proposed development presents unacceptable risks to both the environment and surrounding communities. We urge the Department to protect this valuable natural heritage and reject this application.

Reenen de Villiers, reenen@devilliersdebeer.co.za

Objection re. Portion 91 of Farm Matjes Fontein 304: Our client Dolphin Waves Properties (Pty) Ltd

We have received instructions from our client, being owner of Ptn 12 Matjes Fontein, to object to the Water Use License Application submitted by Familie Roux Eiendomme (Pty) Ltd. on the grounds below:

1. Threats to Local Water Resources and Quality

Contamination Risks to Borehole Water: The proposed location of the sewage treatment plant, less than 500 meters from the Milkwood Glen Estate borehole, poses a serious risk to this crucial water source. Any leakage or overflow from the plant could lead to direct contamination of the groundwater, potentially harming local ecosystems and the estate's water-dependent uses.

Inadequate Protective Measures: The application does not present sufficient safeguards to ensure the borehole's protection. Given the potential for spills or leaks, it is concerning that comprehensive mitigation strategies have not been proposed to prevent such contamination.
Impact on Groundwater Recharge: The development's alteration of the land—particularly the increase in impervious surfaces—threatens natural groundwater recharge processes. These changes may have long-term consequences on the area's overall water sustainability.

2. Insufficient Wastewater Management and Emergency Preparedness

Temporary Sewage System Concerns: The proposed use of a temporary sewage treatment facility until municipal upgrades are completed introduces significant risk. The complex nature of the system demands skilled operators, yet the area lacks the necessary expertise, increasing the probability of system failures

Lack of Contingency Infrastructure: There is no provision for emergency off-site sewage removal in the event of a malfunction. With a daily generation of 30kL of sewage, any failure would quickly escalate, particularly in peak periods when service response times are limited.

Inadequate Emergency Storage: The plant's 48-hour emergency storage capacity is insufficient, especially during high-demand holiday seasons. A breakdown occurring over public holidays, such as Christmas, would likely exceed the system's capacity before any effective response could be organized, resulting in severe environmental and health hazards.

3. Negative Impact on Community and Property Value

Potential Odor and Noise Pollution: The proximity of the sewage treatment plant to established residential areas poses a risk of unpleasant odors and operational noise. These disturbances would degrade the area's livability and appeal, significantly affecting the quality of life for nearby residents.

Devaluation of Nearby Properties: Real estate experts have indicated that the construction of a sewage facility close to high-value properties, coupled with an increase in residential density, would lead to a decrease in property values. The area's attractiveness, based on its rural and scenic character, would be compromised, impacting local real estate markets.

Merle Edwards, info@keurboomstourism.co.za

Please be so kind as to register me as an interested and affected party in the public participation process for the proposed residential development on Portion 9 of the Farm 304, Matjiesfontein, Keurboomstrand, Plettenberg Bay.

Sarah Kval, Sarah@greencounsel.co.za
Phillipa King, phillipa@greencounsel.oc.za

Subject: COMMENTS ON THE DRAFT BASIC ASSESSMENT REPORT FOR THE PROPOSED DEVELOPMENT OF A SUSTAINABLE MIDDLE INCOME RESIDENTIAL DEVELOPMENT ON PORTION 91 OF FARM MATJESFONTEIN 304, PLETTENBERG BAY Dear Ms. Marshall Attached please find comments submitted on behalf of our clients in respect of the draft BAR for the proposed development of a sustainable middle income residential development on Portion 91 of Farm Matjesfontein 304, Plettenberg Bay. Kindly confirm receipt of this email.

Attached please find our comments on the abovementioned WULA. As per the email correspondence with Sarah Kvalsvig, our clients are in the process of obtaining input from a civil engineer and will supplement the comments to the extent necessary in that regard. Due to the size of the annexures, pages 9-15 thereof will be sent in a separate email

Please see attached pages 12 – 15 of the annexures Please confirm receipt
Please could you confirm if you received the comments (and annexures) which we sent yesterday (see email below)

'mattia tassone' mattia.tassone@hotmail.com

I am writing to express my strong objection to the proposed development on Portion 91 of Farm Matjesfontein 304, Plettenberg Bay, based on the detrimental impact it is likely to have on the value of surrounding properties. As a property owner in the Keurbooms area, I have significant concerns that this development could negatively affect the desirability, character, and market value of our homes, which are intrinsically tied to the pristine natural environment and scenic assessment of the potential economic fallout on the real estate market, it would be irresponsible to proceed with

this project. I urge the authorities to reconsider the scale and nature of this development to safeguard the financial and communal interests of existing property owners.

Anel Keizer, Anel@kgkemp.co.za, 021 007 5515 / 076 274 0341
Gustav Kemp , Gustav@kgkemp.co.za

Dear Sonja, Your email dated 12 September 2024 refers.
As owners of property adjacent (Milkwood Glen) we are not in agreement with the application for water use. We are all aware that the Bitou Municipality does not have money and that the bulk sewerage system in Keurbooms will never be build. As it is there is a shortage of electricity and water to Keurbooms which will not be upgraded in the near future. As result of the aforesaid the already strained resources of Keurbooms will be pressurised by the development. To attempt to avoid the problem by treating sewerage is not going to be any of a solution. Furthermore, the environmentally sensitive area in Keurbooms, especially with water level (ungrounded water levels) cannot support such activity. The treatment plant is very close to existing water supply areas and will affect underwater bio-contamination. Milkwood Glen utilises a borehole and the water drawn from the borehole will be contaminated by the sewerage. The normal rules in relation to water course does also apply and as the mountain backs to the development water will most definitely become a problem in flooding. As such a water usage application must be declined. Regards Gustav Kemp

Milkwood Glen Homeowners Residents and Public Template type emails

RESPONSES per topic

1. Bulk water supply and capacity

It is noted that there are many new development proposals competing for the same water supply and water treatment services. Note the Bitou Municipality letter on Bulk water supply and treatment for this project.

The Bitou Municipality Engineering department provided a letter to confirm that:

‘The water treatment plant currently has sufficient capacity. The GLS report confirms The Matjiesfontein reservoir currently has sufficient capacity to accommodate the development. The bulk water supply to the reservoir is however inadequate and, to meet current demand and that of projected future developments, upgrades are required to the bulk watermains over the full length from the Town Reservoirs to the Matjiesfontein Reservoir. Implementation of partial upgrade of the bulk watermains is in the planning stage’.

1.1 Estimates of bulk water capacity demand

The average of 237 litres per day, stated in the objections, is based on bulk volumes supplied by water authorities and includes extensive municipal leakages, irrigation of parks and sporting facilities and various other usages and is of no relevance to the development demand..

Poise Engineering stated that the water consumption adopted in the Engineering Report is 600 litres per unit per day. This is the figure recommended in the GLS bulk services report. It is also the lower figure of the consumption figures recommended in the CSIR Red Book and the Neighbourhood Planning and Design Guidelines, the latter being the default reference of Bitou Water and Sanitation Department. The lower figure is motivated with consideration to the low expected average occupancy and the water harvesting and effluent recycling measures to be adopted.

2. Bulk sewerage services and treatment capacity

Gansevallei Wastewater Treatment Plant is at full capacity and requires upgrading. The GLS report confirms that the Keurbooms, Matjiesfontein and Aventura pump stations have sufficient capacity to accommodate the development. However, Aventura rising main requires upgrading to accommodate all future developments. The Matjiesfontein rising main has sufficient capacity but is in poor condition and requires replacement'.

The Bitou Municipality further issued a letter to confirm the following on sewerage services for this development by means of a package plant in the interim:

We confirm that Bitou Municipality has bulk infrastructure capacity in its networks and can accommodate the proposed development, subject to the following conditions.

1. That the developer enters into and sign a Service Level Agreement with Bitou Municipality,
2. That the developer makes payment of the prescribed Augmentation contributions in order for the municipality to implement the bulk upgrade of services as detailed and required.
3. That the developer implements and maintain a temporary wastewater treatment plant until the upgrades to the Ganzevallei WWTW has been completed. The temporary wastewater treatment plant must be approved by the relevant authorities as part of the civil engineering services for the development. A bulk connection to the Bitou sewer network must be commissioned once the Ganzevallei WWTW has been upgraded and the temporary WWTP must be decommissioned and removed from site. All costs for construction, operation, maintenance and decommission will be for the account of the developer.
4. That the developer duly communicate point 3 above with all future owners/Homeowners Associates and or Body corporate.

3. Site location concerns and flood risk

3.1 Within 1:100-year floodline

As per the Poise Engineering report (Version 7, January 2025), the site is situated approximately 3 km east of the eastern bank of the Keurbooms River Estuary. The site falls outside of the 1 in 100 year floodline which is indicated in the Keurbooms and Environs Local Area Spatial Plan (KELASP; 2013) and the Keurbooms-Bitou Estuary Management Plan (KBEMP). The 1 in 100 year floodline reaches approximately 30m from the southern boundary of the site and is effectively stopped by the Keurboomstrand Road. The road is at a height of 3.65 mamsl which effectively creates a barrier between the site and the floodline which is estimated at 3.2 mamsl. Therefore, while the site is undoubtedly low-lying it is not in any mapped floodlines. As a precautionary measure, the minimum floor level of each stand will be raised to 4.0 mamsl. The 1 in 50 year floodline is of no significance to the site, terminating approximately 0,95 km west of the site. See below taken from Table 1 in the aquatic specialist report which clearly depicts the floodlines in relation to the property.

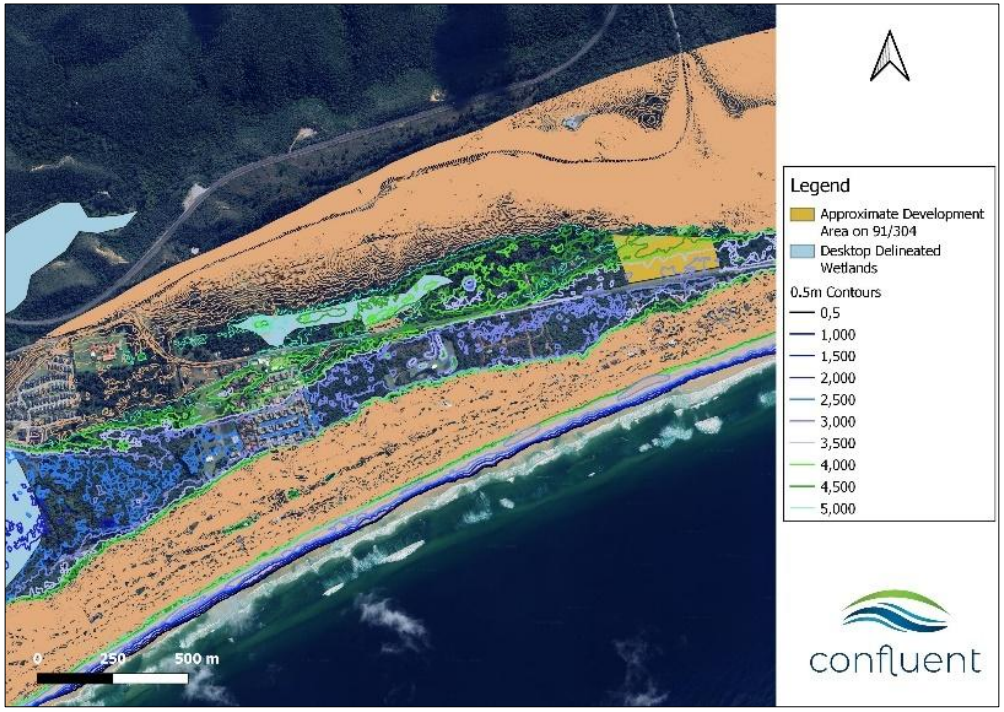
Development is not supported in areas below the 1:50 and 1:100 year floodline. Lines indicated are: dark blue = 1:100 year floodline, and light blue area is an 'island' below the 1:50 year floodline. The purple line is the 100m urban coastal setback line. *The proposed development area is located outside of all these features, and is therefore not flagged from a heightened flood risk perspective.*	

3.2 Within Estuarine Functional Zone

The mapped aquatic features at the site are associated with estuarine habitat which is mapped according to the contours (5 m.a.m.s.l.) and not the actual habitat present. Ground-truthing of the site by the aquatic specialist confirmed no estuarine habitat present in remnant vegetation at the site, and no hydromorphic indicators in the soil that would indicate wetland conditions. The other aspect related to areas mapped in the EFZ is that they are inherently low-lying which could indicate their vulnerability to flooding. Reference to the proposed development location in relation t the 1:100 yr floodline is made in the previous section.

3.3 Weather changes (climate change, sea level rise) exacerbating flood risk

It is true that increasing unpredictability and extreme events could exacerbate the flood risk to this site given its low-lying nature. Given its location at the 'end of the line' of the Keurbooms floodplain area (See map below, Figure 17 in the Aquatic Report), it is unlikely to impact on other developments in the floodplain, but rather, other developments would be in the line of the flood prior to any waters reaching Portion 91. The engineer has acknowledged this risk for residents by raising the minimum floor levels of houses within the development to 4m amsl. The stormwater attenuation ponds and permeable paving recommended in the stormwater management plan will encourage infiltration of water and retain at least some of the development's flood storage capacity.



4. Temporary Wastewater Treatment Plant (WWTP)

4.1 Planning

The duration of the municipal upgrade is uncertain, but the Bitou municipal letter (referred to in point 1.1 above) confirms that the temporary WWTP is allowed until such time that it can tie into the bulk sewer line once upgrades are done and it can accommodate additional capacity.

4.2 Sewage plant capacity estimation

The water figure usage of 237 kilolitres per day, stated in the objections, is irrelevant to both water and sewerage. See item 2 above.

See the Poise Engineering Report Paragraph 5.2:
The projected sewerage discharge takes consideration of the following recommendations for daily sewerage discharge:

19. RED BOOK Chapter 10, Table C1 Middle Income Group 750 litres per day based on 6 people per dwelling
20. NPDG Section K , Table J2 High Density Residential 480 to 560 litres per day

With consideration to the expected average occupancy of 3 only persons per stand the sewerage discharge is based on average daily discharge of 500 litres per erf. This equates to an average of 3,3 persons per stand.

Average Daily Discharge for 60 stands: 30 kl
Based on a peak factor of 2.5 the maximum peak discharge will be 0,86 litres per second.

The figure adopted of 500 litres per unit per day is based on the CSIR Red Book and Neighbourhood Planning and Design Guidelines figures of 150 litres per person per day and provides for an average of 3,3 persons per household. The figure is above the GLS recommended figure of 420 litres per unit per day.

4.3 Research/viability on type of WWTP

Bio Sewage Systems have been established for over 20 years and have over 800 plants, of size ranging from 5 to 200 m^3 per day, operating successfully in Southern Africa (Poise Engineering).

4.4 Maintenance and management

Poise Engineering report paragraphs 5.4.2 / 5.4.3:
A Plant maintenance manager will be appointed, who will be given comprehensive up front training to obtain the skills to repair if needed and will visit the site and inspect the plant on a daily basis. Bio Sewage Systems do also have support teams available at short notice should any unusual issues arise.

Pre-treatment screening will be provided which will facilitate the cleaning and removal of non bio-degradables. The frequency of cleaning will be determined once the plant is in operation and the amount of non-biodegradables being screened. The non-biodegradables removed would be sent for incineration at a recognised waste disposal site.

All required regular maintenance can be done within the 48-hour emergency storage period. Spares will be kept on site for all critical mechanical and electrical components. The Bio Sewage Systems plant is designed to be fully automated, and simple in operation. Regular inspections are only required to ensure it is running to specification.

4.5 Long-term monitoring

Refer to the Poise Report Paragraph 5.4.2.
Groundwater monitoring will be undertaken and effluent quality will be tested on a monthly basis. Permanent groundwater sampling wells will be installed, strategically positioned for the purposes of regular monitoring of the quality of groundwater which has been subjected to irrigation infiltration.

Should it be required, excess effluent will be discharged to the stormwater infiltration ponds system. This will be environmentally acceptable, the effluent being to DWAS Special Limits quality.

The aquatic specialist report recommends the following:

21. Install two groundwater spikes or wells at 8-10m depth to monitor groundwater quality. These should be located at least 200 m apart and provide easy access during construction and operational phases of the development.
22. Wells must not be located in any areas of natural vegetation, rather opting for locations in previously disturbed grassy areas.
23. Samples must be collected pre-development to determine baseline water quality (at least once/month over 3 months), to monitor possible impacts over time. Samples should be analysed from the start of construction onwards and be submitted for analysis on a monthly basis. Parameters for analysis should be aligned with those indicated in the DWS general limits.
24. Water chemistry must not vary by 10% of the background levels established through baseline sampling. If sampling shows indications that eutrophication of the groundwater is occurring for 3 months consecutively, then this is a reportable incident to BOCMA and DEA&DP, and an alternative to irrigation with treated wastewater or improved treatment must be immediately secured.

25. Water samples results must be submitted to BOCMA, the Bitou Municipality and reviewed by an aquatic ecologist on a quarterly basis from commencement of the development until the municipal WWTW has been upgraded and the package plant is no longer required.

As per the Geohydrologist, (DHS Groundwater, Appendix 20), in order to effectively monitor and protect groundwater quality and levels, the installation of piezometers is crucial. It is recommended that three monitoring piezometers be strategically installed within the vicinity of the proposed development. These piezometers should be installed to a depth of 10 meters below ground level (mbgl), with one placed up-gradient of the proposed development (to monitor background groundwater quality) and two placed down-gradient (to track any potential movement of contaminants). Additionally, a fourth piezometer should be placed adjacent to the wastewater treatment plant (WWTP), particularly near the underground sewage storage tank, as this is a critical area for potential contamination. The placement of these piezometers will provide comprehensive coverage for groundwater monitoring across the site, both prior to and after construction.

To track changes in groundwater quality, water levels and chemical parameters should be recorded monthly from each of the installed piezometers. Additionally, effluent quality should also be regularly tested to assess the potential impact of the wastewater treatment plant (WWTP).

The Proposed monitoring requirements are as per the table below:

Class	Parameter	Frequency	Motivation
Physical	Static groundwater levels	Monthly	Groundwater recharge, flooding risk, temporal variation
Chemical	Faecal Coliforms, COD, pH, Ammonia as Nitrogen, Nitrate/Nitrite as Nitrogen, Chlorine as free Chlorine, EC, Orthophosphate as phosphorous, Fluoride, Soap oil or grease, Major ions and trace elements.	Monthly	Changes in chemical and microbial composition may indicate areas of groundwater contamination and be used as an early warning system to implement management/remedial actions.

The data should be reviewed by a geohydrologist on a quarterly basis to ensure that no contamination is occurring and that groundwater quality remains within acceptable limits.

Develop and implement a response plan for immediate action in case of contamination detection.

4.6 Enforcement mechanisms and responsibility

DWS is the competent authority which enforce that legislation relating to the National Water Act is followed. Hence the need to apply for a WUL with all the relevant specialist assessments to ensure that the standards of the water uses relevant to this application are understood, monitored and that

conditions of approval can be enforced. An Environmental Control Officer (ECO) will be present during the construction phase whose responsibility will be to monitor compliance with conditions set out in the licence. The CME unit of BOCMA do regular checks on licensee properties to audit compliance to the license conditions. Responsibility for implementation of the conditions set out by BOCMA in the water use license is for the license holder.

Important to note that as per the aquatic specialist report, a recommendation for monitoring water quality in groundwater wells is that any deviation in water quality by > 10% over 3 months consecutively must be reported to both BOCMA and DEA&DP. This must be treated as a reportable incident by the ECO and would trigger a compliance and enforcement inspection and investigation by authorities. This should be made clear in development approval conditions.

Furthermore, the ECO would need to monitor compliance with conditions of the Environmental Authorisation should that be issued by the Department of Environmental Affairs and Development Planning. This department has a similar mandate to that of BOCMA in terms of monitoring compliance with conditions of authorisations, and where serious deviations occur, these can result in enforcement procedures where rectification is required.

4.7 Inadequate Emergency storage and Emergency malfunction Procedure

See the Poise Report Paragraph 5.4.6:
The anaerobic tank accommodates 48 hours of emergency storage. Furthermore, a gravity overflow pipe will be installed to link the anaerobic tank to the Bitou municipal sewerage system located on the opposite side of Keurboomstrand Road MR395. This overflow will only become operational in the event of the overflow of the emergency storage.

There will therefore be no possibility of ground contamination through leakage or overflow.

Poise engineering further stated that to enable the monitoring of any potential failure and consequential overflow of the system, an emergency alarm will be installed which will be activated once effluent level rises in the emergency storage component of the system. All required regular maintenance can be done within the 48-hour emergency storage period Spares will be kept on site for all critical mechanical and electrical components

4.8 No off-site pump station

See point 0 above on emergency overflow connection to municipal line.

4.9 Prevention of groundwater contamination from leaks or seepage from the WWTP

As per Poise Engineering report the containment of leakage has been addressed as follows:

The anaerobic tank will be the only underground component of the Plant. The tank will be constructed of reinforced concrete including Penetron Admixture. The durability will therefore be in excess of 50 years, but effectively infinite.

The containerised plant is a fully contained unit, sealed against leakage. It is equipped with overflow protection back to the anaerobic tank in the event of an unlikely blockage within the system

A subsurface drainage system will be installed beneath the anaerobic tank, including a pump sump from which any leakage can be returned to the tank. The drainage system will have an impermeable lining beneath it designed such that that no leakage will infiltrate the ground below.
According to the DHS Groundwater report (Appendix 20), the following mitigation measures must be adhered to prevent groundwater contamination from the WWTP:

26. Ensure the WWTP comply with SANS1200 Part K:Civil Engineering Standard Specifications, NWA, Water Quality Guidelines (DWAF), SANS1913:Planning, Design, and Construction of Sanitation Systems, Wastewater Treatment Plant Design and Operational Guidelines (DWAF, 2008)
27. Use synthetic/geotextile liners and impermeable surfaces approved by the Department of Water and Sanitation (DWS) in areas where sewage and associated waste are handled.
28. Construct all sewer lines and pipes to ensure leak-proof systems that prevent contamination.
29. Ensure that sewage holding tanks and accommodation facilities are properly managed to prevent overflow and spillage.
30. Regularly service the WWTP and inspect the integrity and efficacy of the WWTP
31. Ensure emergency procedures are in place to rapidly repair WWTP should failure occur.
32. Set up a comprehensive monitoring system to monitor the effluent quality.
33. Install at least three monitoring piezometers into the water table, one upstream and two downstream of site. Additionally, a piezometer should be installed in close proximity of the WWTP.
34. Should a leak be detected or the monitoring piezometers be contaminated, a baseline Phase 1 Contamination Assessment should be undertaken and the site remediated in consultation with a contamination remediation consultant and the Authorities.

4.10 Irrigation with treated wastewater

Impact and contamination risk

Given that the intergranular aquifer consists primarily of shallow, unconsolidated material, it is particularly sensitive to contamination and requires stringent protective measures to mitigate potential risks.

By implementing the recommended monitoring network and mitigation measures as prescribed in the geohydrological report, the risk of groundwater contamination during both the construction and operational phases can be reduced to negligible - negative. This will ensure that groundwater quality is continuously protected and that any potential issues are addressed promptly, safeguarding the health and sustainability of the surrounding ecosystem and water users. See mitigation measures as outlined herein under section 4.5 and 4.9 (DHS Groundwater, Appendix 20).

Within 100m of the Spring

The spring and associated pond and buffer are located north of the proposed development area in the green corridor which is to be fenced off from the residential development area. Treated wastewater will be irrigated in gardens and potentially concentrated in the stormwater attenuation ponds which are all at a lower elevation than the natural pond. It is impossible that the treated wastewater can move against gravity to potentially flow into the natural pond, or move uphill to feed into the spring. See Fig. 16 in the Aquatic Specialist report which indicates 0.5 m contours at the site. Furthermore, the spring is sustained by water from the sloping, vegetated area above, which will not be developed. Therefore, it is constantly replenished with clean water.

All the detention ponds will be downslope from the area of the spring. It is therefore a physical impossibility that any flooding of detention ponds will result in contamination of the spring (Poise Engineering).

Impact on groundwater and being within 500m of a borehole

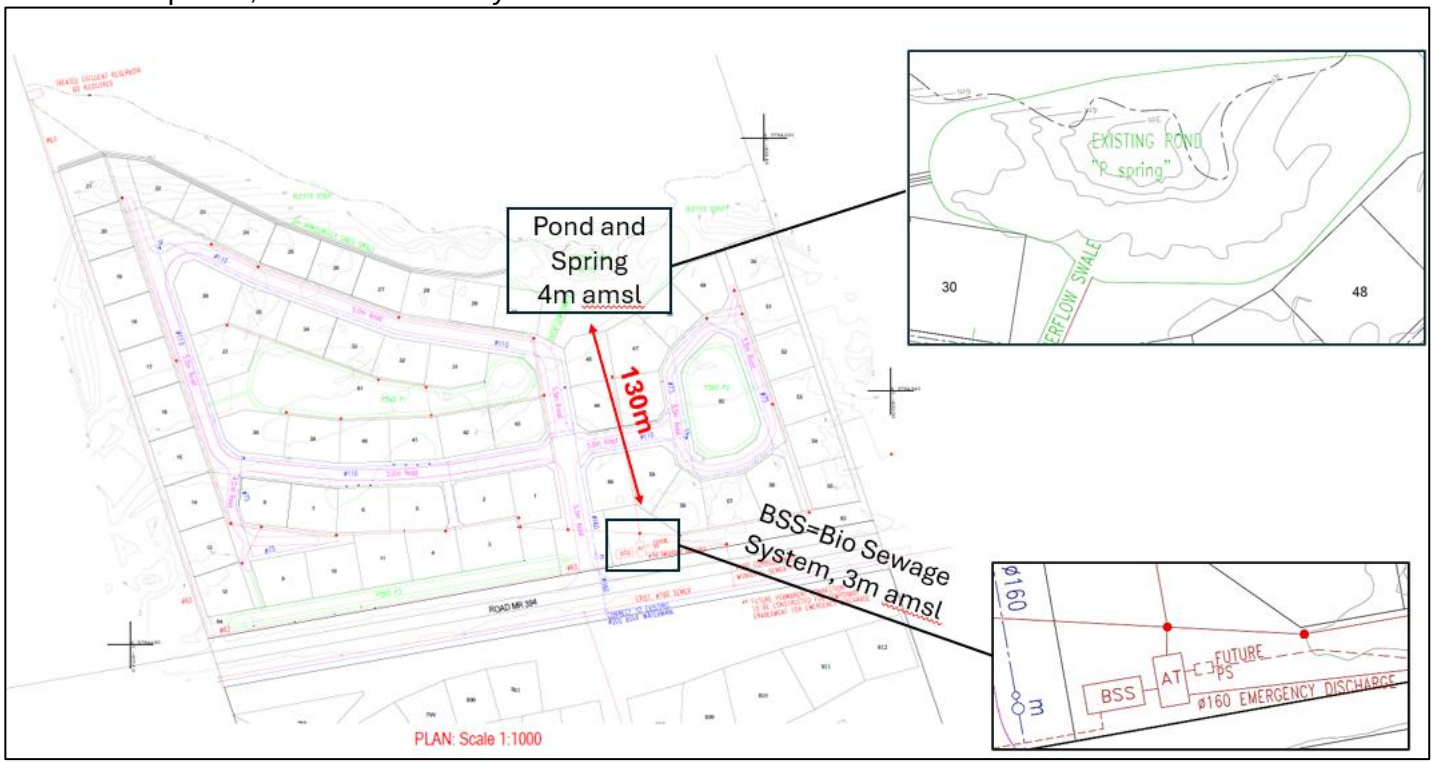
By implementing the recommended monitoring network and mitigation measures as prescribed in the geohydrological report (Appendix 20), the risk of groundwater contamination during both the construction and operational phases can be reduced to negligible - negative. This will ensure that groundwater quality is continuously protected and that any potential issues are addressed promptly, safeguarding the health and sustainability of the surrounding ecosystem and water users. See mitigation measures as outlined herein under section 4.5 and 4.9.

4.11 Inadequate 10 m buffer zone between WWTP and spring

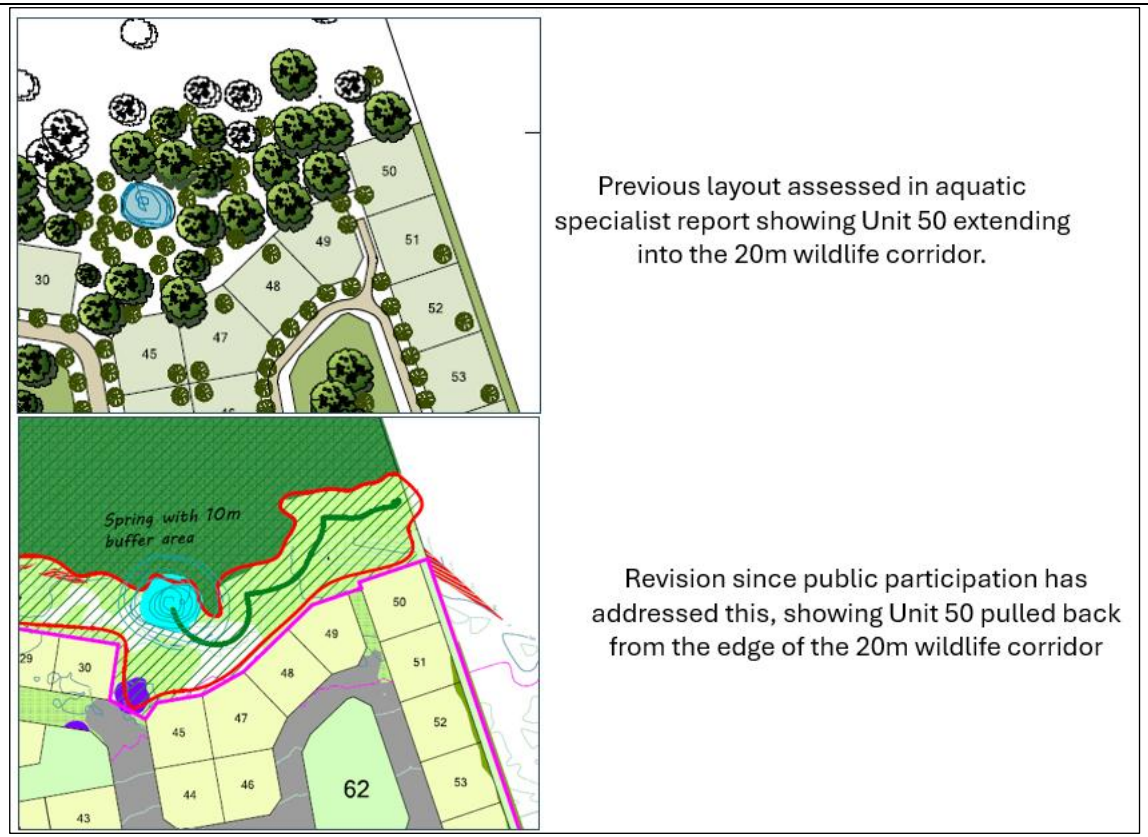
The 10m buffer zone is recommended primarily to preserve habitat around the spring and pond, primarily for access by wildlife and to avoid any direct disturbance to this feature. Strict recommendations have been made that no treated wastewater, or stormwater runoff from the development must be directed into the pond. Consider that the pond itself is not a natural feature. It was excavated to hold water from the spring for livestock drinking. At present it is used by horses who seriously agitate the water. It cannot be considered a highly sensitive aquatic ecosystem, but its preservation as drinking water source for wildlife is important in the wildlife corridor. Buffers around watercourses can be recommended for a variety of reasons including the

bioremediation and interception of polluted diffuse surface water runoff generated by the surrounding land use (e.g. from agricultural fields), or to preserve habitat and maintain connectivity along watercourses. The latter reason was the motivation for the recommended buffer.

The wastewater treatment facility (Bio-Sewage System/BSS) is approximately 130m distance from the pond at a lower elevation. The pond edge is at 4m amsl while the BSS is located around 3m amsl. See annotated figure below which is extracted from drawing DWG23G210S01 in the Poise Engineering report. This means that any leakage from the BSS could not physically enter the pond as it is at a higher elevation. Furthermore, the BSS plant is located on the opposite side of the development, much further away than the 10m buffer.



Since the PP started the layout has been updated and changed as per suggestion by the aquatic specialist (Confluent), so that unit 50 which slightly encroached into the 20m wildlife corridor was pulled back from this area. See below comparison of layouts demonstrating this adjustment.



4.12 Odour

Efficiently designed and operated high quality treatment plants do not give off odours. The comment on the Angling Club odours is based on ignorance. The angling club does not have a sewerage treatment plant and the odours emanate from the adjacent Bitou pump station (Poise Engineering).

4.13 Electricity supply

The plant will be powered by a Solar/Eskom charged battery system with a backup generator for emergency supply in the event of extended Eskom down time.

4.14 Contamination risk to drinking water supply of Glenwood borehole

As per the Geohydrology report (DHS Groundwater, Appendix 20), one spring, onsite, was identified along with a spike on a neighbouring property. Details are shown in Table 5 of the report:

Table 5. Details of boreholes located on neighbouring properties.

BH nr	Coordinates Decimal Degrees (WGS84)	Depth (m)	Estimated Yield (l/s)	EC (mS/m)	Static water level (mbgl)	Equipment	Water Use	Property Owner (Cell nr.)
MG01	S -34.00624 E 23.43842	2	~	290	~	Centrifugal pump	~	Dr Nick Frootko (076 223 0803)
MF01	S -34.00473 E 23.43689	Surface	~	143	~	~	~	Stephan Roux (sroux@worldonline.co.za)

Based on Table 6 below (from the DHS Groundwater report), both water samples, MG01 and MF01, are deemed unfit for human consumption. Both samples contain elevated levels of chloride (Cl), sodium (Na) and manganese (Mn), exceeding the SANS 241:2015 drinking water standards. Additionally, MG01 exhibits elevated electrical conductivity (EC), total dissolved solids (TDS) and iron (Fe).

Table 6. Water quality results compared to SANS 241-1:2015 (edition 2) drinking water standards

Sample Nr.	MG01	MF01	Standard Limits
pH	7.21	6.88	5.0 - 9.7
EC	380	167.5	170
TDS	2470	1089	1200
T-Alk	387.6	194.4	~
Cl	1089.02	424.72	300
SO_4	236	85	250
NO_3-N	0.8	0.7	11
NO_2-N	0.003	0.002	0.9
NH_4-N	0.2	0.4	1.5
F	0.85	0.77	1.5
Ca	280.365	70.264	~
Mg	90.33	26.379	~
Na	528.005	317.91	200
K	17.224	3.939	~
Fe	0.46	0.27	0.3
Mn	0.452	0.37	0.1
Cu	0	0	2
Zn	0	0	5
E.Coli (cfu/100ml)	0	0	0
Total Coliform (cfu/100ml)	35	27	10
Turbidity	6.01	1.75	5
Notes			
Yellow = Acceptable			
Exceeds standard limits			
Blank = Not Analysed			
0 = below detection limit of analytical technique			

It is important to note that the borehole in question is actually a spike/well point with poor water quality, and its water is used exclusively for irrigation purposes. Despite this, strict mitigation measures must be implemented to prevent any potential contamination from reaching the borehole.
Critical Mitigation Measures:

11. Containment of Leakage from the WWTP
    - As highlighted in the Poise Engineering Report, all necessary measures should be taken to prevent leaks from the wastewater treatment plant (WWTP).
12. Installation of a Groundwater Monitoring Network
    - One piezometer upstream of the development.
    - Two piezometers downstream to track potential contaminant migration.
    - One piezometer near the WWTP for close monitoring of effluent impact.
13. Regular Groundwater Quality Monitoring
    - Monthly groundwater sampling as recommended in the Geohydrology Impact Assessment to detect any early signs of contamination.
14. Effluent Quality Testing
    - Frequent testing of effluent quality to assess the potential impact of the WWTP on groundwater resources.
15. Immediate Response to Contamination
    - If a leak is detected, a monitoring piezometer shows contamination, or effluent quality deteriorates, a Phase 1 Contamination Assessment should be conducted.
    - Remediation efforts must be carried out in consultation with a contamination remediation consultant and relevant authorities.

By implementing the recommended monitoring network and mitigation measures outlined in both the Poise Engineering Report and the Geohydrology Report, the risk of groundwater contamination during both the construction and operational phases can be reduced to a negligible-negative impact. These proactive steps will ensure the long-term protection of groundwater quality and allow for prompt intervention should any contamination risks arise, safeguarding both the surrounding ecosystem and water users.

5. Flooding & Flood lines

5.1 Flood risk

As per the Poise Engineering report (Version 7, January 2025), the site is situated approximately 3 km east of the eastern bank of the Keurbooms River Estuary. The site falls outside of the 1 in 100 year floodline which is indicated in the Keurbooms and Environs Local Area Spatial Plan (KELASP; 2013) and the Keurbooms-Bitou Estuary Management Plan (KBEMP). The 1 in 100 year floodline reaches approximately 30m from the southern boundary of the site and is effectively stopped by the Keurboomstrand Road. The road is at a height of 3.65 mamsl which effectively creates a barrier between the site and the floodline which is estimated at 3.2 mamsl. Therefore, while the site is undoubtedly low-lying it is not in any mapped floodlines. As a precautionary

measure, the minimum floor level of each stand will be raised to 4.0 mamsl. The 1 in 50 year floodline is of no significance to the site, terminating approximately 0,95 km west of the site.

No flooding has been formally recorded on the site. Steep areas to the north of the proposed development area are not going to be developed and will be retained in a natural condition. No more runoff will be generated from this area than under pre-development conditions. Flood Risk is therefore unlikely to be exacerbated on the site through development of the residential housing complex. This is further supported by the high permeability of soils on the site, and SuDS measures that have been incorporated into the stormwater management plan which include the use of permeable paving and grass blocks for the main and secondary internal roads respectively. Three stormwater attenuation ponds (P1, P2 and P3) will collect runoff from roads and roofs. If the natural pond on the northern section of the site were to overflow during flood conditions it is planned to overflow via the road into stormwater P1 (See Eng Drawing DWG23/G210). The previous owner (Mr. David Steele) whose grandfather purchased the property (and neighbouring portions which were collectively farmed) in the 1950s stated that no flooding has ever occurred in his time on portion 91/304 (*pers. comm*. 29 January 2025).

The KELASP (2013) was reviewed from the perspective of the proposed development area (Dabrowski 2024). This report includes a thorough assessment of the Tshokwane Wetlands including various classifications of different wetland units, delineation of wetland areas, and development recommendations (Freshwater Consulting Group, 2013). Findings in the report relevant to proposed development at the site are summarised in Table 1. One of the development risks within the EFZ relates to flooding which can be exacerbated by climate change and associated sea level rise. The K-BEMP (2018) includes mapped 1:50 and 1:100 year flood lines which are shown in Figure 14 of the Aquatic report. The property is located on the edge of the 1:100 year flood line, which is not mapped to extend beyond the boundary of the property. In reality, the frequency of 100-year flood events is increasing due to climate change, and when coincident with sea-level rise and high tide events, it is not impossible that minor flooding could affect the low-lying area of the property in future. The engineering report has proposed raising the minimum floor level to 4m amsl, the stormwater attenuation ponds, and areas of permeable paving and grass pavers to maintain permeability on the site.

5.2 High rainfall – overflow/flooding of effluent ponds

The pond designs compensate for the lesser infiltration area due to impermeable surfaces for the 1 in 100 year storm interval. The pond catchment basins will ensure that overall storage volume is not less than the current natural state (Poise engineering). The wastewater treatment plant will have no significant implications under high rainfall conditions. The volume of daily effluent is 22.5kl which translates to less than 0.5mm over the site development area and less than 1% of the storage volumes of the attenuation ponds.

The total pond volumes also exceed the 1 in 50 year storm 24 hour runoff volume in all cases. Because there is no current and will be no post development discharge of stormwater to outside of the site boundaries the normal required stormwater attenuation parameters are not applicable to the stormwater management plan. The post-development Catchment Areas and ponds are indicated on attached Figure 1 of the report.

5.3 Compromising the natural flood defence

The site's high permeability property will continue. The site levels will be reshaped to drain toward the new ponds, and the surrounding pond catchment crest levels will be designed such that the overall site flood storage volume is not reduced from that of its current natural state.

Poise Engineering stated that the Development's stormwater management plan mitigates the impact of flood conditions for the Development and ensures that the Development will not negatively impact on surrounding properties under flooding conditions. It provides information on the Sustainable Urban Drainage system (SUDS), where the principals of discharge of runoff by infiltration through permeable paving and grass block roads surfaces and infiltration ponds which will enhance simple adherence to the regulatory SUDS reduction specifications.

Under point 8.6 of the Poise engineering report, the rainfall volumes and retention data are explained. The attached Stormwater Management Data Table indicates the areas of the 3 catchments, the pond areas, the 24-hour runoff volumes and the maximum stored volumes, for the 1 in 100 year return interval storm.

The data indicates that the infiltration ponds will have considerably more storage capacity than the modelled requirements.

5.4 Sensitive flood plain near 4.5m coastal setback line

The 4,5m setback line relates to swash risk. The development is 2,8km from 100m high water mark, and outside of the 1in 100 year backwater floodline. The floodplain of the estuary downstream from the Development is extensively barriered by building structures and dense vegetation. It is clear that in reality no swash whatsoever can be applicable on the site.

5.5 Neighbouring properties

Similar floods to the Keurboomstrand floods of 2007 will not be exacerbated with the additional development. Road 394 was not affected by flooding at the Dunes Resort, nor in the vicinity of the Development and was not impassable. Keurboomsriver Road, more than 2 kilometres to the west, was flooded and impassable.

The Development's stormwater management plan mitigates the impact of flood conditions and ensures that the Development will not negatively impact on surrounding properties under flooding conditions.

Keurboomstrand residents who witnessed the 2007 floods were consulted, who asserted that Keurboomstrand Road 394 was not affected by flooding at the Dunes Resort, nor in the vicinity of the Development and was not impassable. Keurboomsriver Road, more than 2 kilometers to the west, was flooded and impassable (Poise Engineering).

5.6 High groundwater level

The subsurface in this area primarily consists of sand, which has high permeability and is less likely to cause groundwater mounding and flooding. However, it is still important to consider the potential for changes to the local hydrology due to the alteration of land surfaces and drainage patterns. Modifications to the site, such as the construction of impervious surfaces or changes in runoff flow, could disrupt the natural groundwater recharge and increase the risk of localized flooding.

To mitigate these risks, appropriate stormwater management measures should be implemented to manage runoff effectively and maintain groundwater recharge. This includes the use of permeable pavements, retention ponds, and managed drainage systems that ensure water infiltrates into the ground rather than being directed away from the site. By adopting these strategies, the risk of flooding can be minimized, with a goal of reducing it to negligible-negative (DHS Groundwater, Appendix 20).

According to the Geotechnical report 10 test pits were dug. Groundwater was found in Test pits 1 and 5, positioned on the southern lowest side of the site, at depths 1,95m and 2,3m respectively. The other 8 pits were dug to depth varying between 2,3m and 3m without encountering groundwater.

5.7 Flood risk

The 3 attenuation ponds will be designed to ensure no overtopping under 100 year RI storm conditions. In the highly likely event of such conditions being exceeded the overflow will reach the Keurboomstrand Road Reserve. There will however not be any impact more severe that under the current natural state.

The preliminary designs indicate that the bottom level of the ponds will all be in excess of 1,5m above the groundwater level.

The site levels will be reshaped to drain toward the stormwater ponds, and the surrounding pond catchment crest levels will be designed such that the overall site flood storage volume is not reduced from that of its current natural state. The site will continue to serve as a soakaway.

5.8 Vulnerability if WWTP fails

The sandy unsaturated zone effectively reduces the movement of biological contaminants, significantly limiting their potential to reach groundwater. However, it provides minimal resistance to chemical contaminants, allowing them to migrate more easily and increasing the risk of groundwater contamination. This underscores the need for additional protective measures to manage chemical pollutants. These measures are discussed in section 4.5 and 4.9 in this document.

6. Stormwater Management

Stormwater management and flooding prevention designs as per the Poise Engineering report:

The stormwater will be managed such that roof areas will drain to gardens which will fall towards roads or directly to one of three infiltration attenuation ponds to be provided.

The main access roads will be surfaced with permeable paving and secondary roads with grass block paving. In either case infiltration will occur through the road structure and roadbed to the natural ground below. Excess runoff to the road surfaces which does not infiltrate will be surface discharged to the infiltration ponds.

Site levels will be designed to ensure the effective implementation of the stormwater management system. The minimum floor level of any stand will be 4.0m MSL. The site slopes and road levels will be designed to flat gradients to enable maximum infiltration whilst draining on surface to the ponds. The levels will also be designed to contain flood runoff within the ponds. The pond invert levels will be designed such that they will be no deeper than 1.5m above the existing water table.

The site design levels will protect homes from flooding

6.1 Prevent flooding

The Poise Engineering Stormwater Management Data Table indicates the areas of the 3 catchments, the pond areas, the 24 hour runoff volumes and the maximum stored volumes, for the 1 in 100 year return interval storm. The data indicates that the infiltration ponds will have considerably more storage capacity than the modelled requirements. The total pond volumes also exceed the 1 in 50 year storm 24 hour runoff volume in all cases. Because there

is no current and will be no post development discharge of stormwater to outside of the site boundaries the normal required stormwater attenuation parameters are not applicable to the stormwater management plan (Poise Engineering).

6.2 Slope runoff causing flooding

The runoff from the forested slope has been accounted for. See the Poise Engineering Report Paragraphs 8.2 and 8.3. The site is characterized by 2 catchment areas. The northern Catchment Area 1 consists of the northern forested area with gradients as steep as 50% and a flatter strip at the southern bottom end of the slope. This flat strip has a crest along its southern edge which falls across the site from west to east, and contains the runoff from the northern slope from flowing southward. This strip has a very slight fall eastwards towards a natural spring surrounded by a natural depressed pond at the base of the slope. The southern Catchment Area 2 is very flat by nature, generally less than 3 percent and falling southwards towards Keurboomstrand Road. The lowest point is in the south eastern corner of the site.

Currently, runoff from the slope infiltrates the ground quickly, as there is no record of extensive and/or persistent standing water on the site. This is consistent with the findings in the geotechnical report. Runoff from the slope is unlikely to be on the surface given the sandy soils, and is far more likely to occur as interflow through the soil. Therefore minimal surface water runoff is expected. If surface runoff occurred in a concentrated form at any point from the slope it would create distinct drainage lines, which are not evident (personal observation, J. Dabrowski, Aquatic Specialist). Regardless, to address the potential for this scenario (surface runoff from the slope), a 2m wide armourflex lined swale is included in the engineering report to act as a cutoff drain below the slope, which directs any surface water into the natural pond. This was considered acceptable from a water quality perspective as only clean water would be generated from the well vegetated slope.

There are no defined runoff exit positions from the site and the permeable conditions of the site allow that in the current state all rainwater falling on the site discharges through infiltration within the defined area of the site.
Keurboomstrand Road along the southern boundary of the site forms a barrier to runoff to the south in the unlikely event of extreme flooding conditions and insufficient discharge through infiltration.

The sites to the west and east of the site have similar characteristics and there is no significant overland (surface) discharge to or from either site boundary.

The total area of the site to be excluded from development is approximately 9.45 hectares. In the post-development state, rainfall over the undeveloped areas will continue to discharge via infiltration over those areas and toward the natural spring and pond.

7. Groundwater Impacts

7.1 Pollution/contamination due to irrigation

Refer to point 0 above on irrigation with treated wastewater as well as point 0 above on the long-term monitoring of groundwater which will be done.

7.2 Failure of WWTP

The sandy unsaturated zone effectively reduces the movement of biological contaminants, significantly limiting their potential to reach groundwater. However, it provides minimal resistance to chemical contaminants, allowing them to migrate more easily and increasing the risk of groundwater contamination (DHS Groundwater, Appendix 20). This underscores the need for additional protective measures to manage chemical pollutants. These measures are discussed in section 4.5 and 4.9 in this document.

7.3 Recharge of groundwater due to development

Groundwater recharge occurs over a broad region rather than being site-specific, and considering the implementation of effective stormwater and infiltration management strategies, the development is not anticipated to significantly diminish the natural recharge of the aquifer. Instead, with proper planning and mitigation, it can coexist with the surrounding hydrological system while ensuring sustainable groundwater availability (DHS Groundwater, Appendix 20).

The site levels will be reshaped to drain toward the new ponds, and the surrounding pond catchment crest levels will be designed such that the overall site flood storage volume is not reduced from that of its current natural state. The site will continue to serve as a soakaway (Poise Engineering).

Refer the Poise Report paragraph 8.4. All roads and driveway will remain permeable. The impermeable roof areas will amount to approximately 25% of the development area. By nature of the stand layout roof areas will not be in a concentrated location but will be distributed around the development area. Roofs will discharge to Rainwater Harvesting tanks from which excess water will discharge on surface between and around the units. The landscape levels will be modified, however the gradients will remain extremely flat and the majority of runoff will therefore infiltrate the ground before reaching the ponds. Under heavy rainfall conditions runoff reaching the ponds will be stored in the ponds whilst the infiltration process is in progress. Water infiltration around the houses and from within the ponds will spread laterally by capillary action.

The impermeable areas will therefore have no negative impact on the groundwater recharge process.

8. Ecological, Environmental and Sensitive biodiversity concerns

The compliance statement of the aquatic specialist on the aquatic biodiversity (Confluent) states that:
Based on the results of the desktop review and the site survey, the sensitivity of aquatic biodiversity on Portion 91/304 can be regarded as **Low**. The main factors influencing the statement include the following:

The mapped aquatic features at the site are associated with estuarine habitat which is mapped according to the contours (5 m.a.m.s.l.) and not the actual habitat present. Ground-truthing of the site by the aquatic specialist confirmed no estuarine habitat present in remnant vegetation at the site, and no hydromorphic indicators in the soil that would indicate wetland conditions. This finding is consistent with previous specialist assessment by K. Coetzee and the Freshwater Consulting Group as indicated in the KELASP (2013).
While a natural spring and pond are present on the site, they are very small in extent and can be adequately protected from the development by implementing the 10m buffer during the construction and operational phases as indicated in this report. The presence of this feature is not sufficient to increase the sensitivity of the site to Very High, and it has been excluded from the development area in both SDP options. No stormwater runoff from the development or treated wastewater should be put into this pond as the water is of high quality.

According to the Keurbooms-Bitou Estuarine Management Plan the property and proposed development area are located above the 100-year floodline and outside of any ecologically sensitive areas associated with the estuary or Tshokwane wetlands. The latter point was confirmed during two site assessments.
Following feedback received from DEA&DP querying the level of groundwater at the site, a geotechnical study was compiled. Groundwater was only present in 2 of the test pits at an average depth of 2 m. For wetland or estuarine conditions to form, the soil profile must be periodically saturated in the plant root zone (upper 50 cm). This would need to happen for at least several months of the year to influence vegetation composition. As the groundwater level was substantially deeper than this, and no wetland / estuarine vegetation was observed at the soil surface, it is concluded that no estuarine or wetland habitat could form at the site.

The management of the remaining property area as an Open Space III zone will promote conservation outcomes. Sustainable rehabilitation and restoration of indigenous vegetation supported by sustainable income. Stewardship agreements can be considered in consultation with CapeNature but at the very least the landowner has agreed to rezone the area as Open Space III.

As per the EMPr mitigation measures that must be adhered to –

Appoint a Landscape consultant to recommend and implement the introduction of an indigenous landscape plan to protect the existing indigenous vegetation and to prepare a landscape plan for implementation in the private and common areas of the development. Prior to the commencement of

clearing the proposed building site, the contractor must undertake vegetation search-and-rescue on the site. This operation is a legal requirement to ensure that any endangered or suitable plant species are transplanted prior to work commencing on the erf.

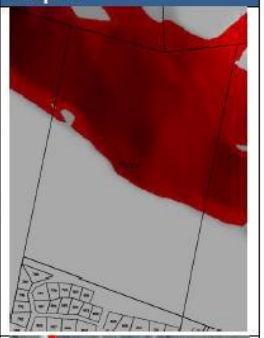
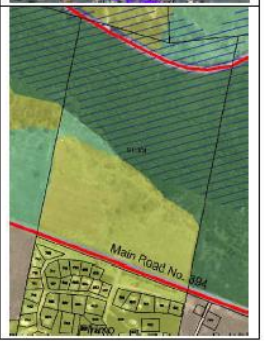
See EcoRoute Comments and Response report where the impact on the wetland corridor has been assessed by the aquatic specialist:
Impact on Wetland Corridor: as per the Aquatic Impact assessment (Appendix G2) the proposed residential development on Portion 91/304 is likely to have minimal to no impact on surface water resources or watercourses as defined in the NEMA and NWA. From the perspective of the DFFE screening tool the site has Low Sensitivity, and from the perspective of the NWA a Risk Matrix was completed with a Low Risk outcome. This is because the only definable watercourse on the site is a natural spring which overflows to an excavated pond which has been used for livestock watering for many decades. The number of stands has been reduced to 60, please refer to Appendix B1 for the preferred SDP. The preferred layout incorporates the recommended 20m animal corridor along the foot of the slope and forest area. All development and associated activities must remain outside of this buffer zone.

These concerns on sensitive biodiversity and vegetation clearance and regrowth of the site have been further noted and addressed in the EcoRoute Comments and Response report.

8.1 Plant species

According to the EcoRoute Comments and Response Report, the KELASP (2013) was reviewed from the perspective of the proposed development area (Dabrowski 2024). This report includes a thorough assessment of the Tshokwane Wetlands including various classifications of different wetland units, delineation of wetland areas, and development recommendations (Freshwater Consulting Group, 2013). Findings in the report relevant to proposed development at the site are summarised in Table 1.

Table 1. Summary of relevant features from the KELASP.

KELASP recommendations and guidelines	Graphic
Development on steep slopes with a gradient > 1:4 is not supported. The area highlighted in red represents the steeply sloping land on 91/304. *The development has been planned to avoid the steeply sloping areas.*	
Development is not supported in areas below the 1:50 and 1:100 year floodline. Lines indicated are: dark blue = 1:100 year floodline, and light blue area is an 'island' below the 1:50 year floodline. The purple line is the 100m urban coastal setback line. *The proposed development area is located outside of all these features, and is therefore not flagged from a heightened flood risk perspective.*	
Development is supported in transformed areas. The related graphic maps the southern portion of the site (proposed for development) as a 'Transformed Area' less sensitive to disturbance with opportunities for development and no natural habitat remaining. The relevant area is mapped in light green.	

Please refer to the Terrestrial Biodiversity, Plant and Animal Assessment attached as Appendix G5 -

The proposed development will be restricted to the lowland areas that were previously cultivated. The forest areas are therefore outside the proposed development footprint. On the basis of the presence of natural habitat within a CBA1 area and within a listed ecosystem, it is verified that the site occurs partially within an area of VERY HIGH sensitivity with respect to the Terrestrial Biodiversity Theme. These areas are not affected by the proposed development.

The lowland part of the site is not considered to be good habitat for any of the animal species flagged for the site. The impact assessment determined that the impact of the proposed development has Very Low significance on vegetation, protected trees, and animal species of concern. The proposed development is entirely within areas mapped as secondary or pasture that has low biodiversity value and sensitivity. The development is therefore supported on condition that forest habitats on the property are fully protected. Either option is acceptable, although Alternative 1 is marginally preferred.

The preferred layout incorporates a recommended 20m animal corridor along the foot of the slope and forest area. All development and associated activities must remain outside of this buffer zone. Management of the remaining property area as an Open Space III zone will promote conservation outcomes. Sustainable rehabilitation and restoration of indigenous vegetation supported by sustainable income (EcoRoute Comments and Response report).

8.2 Rehabilitation

While there are no watercourses where rehabilitation is required, the aquatic specialist (J. Dabrowski), provided a list of wetland plant species which can be planted around the margins of the pond to improve habitat for amphibians and water quality for wildlife making use of the natural pond. These plants can also be used in the stormwater ponds and are strongly recommended as alternatives to *Typha capensis* or *Phragmites australis*, both of which can become dominant and weedy, although they are indigenous. Plant species recommended include:

Isolepis prolifera; Eleocharis limosa; Persicaria decipiens; Wachendorfia thyrsiflora; Falkia repens; Juncus lomatophyllus; Juncus effusus.

8.3 Indigenous Estuarine and Wetland Habitat

In the aquatic specialist report it is stated that, though there are plant species on site that are typically associated with coastal, sandy habitats, they are not strictly associated with estuarine systems including the upper extent of the tidal zone. Furthermore, no estuarine species from any of the tidal habitats including saltmarsh or supra-tidal vegetation were identified at the site. These species would typically include rushes and sedges such as *Juncus kraussii*, *Cyperus laevigatus*, *Ficinia nodosa* or *Phragmites australis*.

According to the aquatic specialist (Confluent), soil augering at the site indicated deep, sandy, well drained soil with no textural change at 50 cm which could promote the development of wetland habitat. This is consistent with the mapped soil type in the area which is described as soils with limited pedological development (young soils with minimal organic matter), and a low clay content (< 15%).

Only remnant patches of indigenous vegetation were present on 91/304 and these contained a couple of large specimens of Milkwood trees (*Sideroxylon inermeis*) intermingled with *Searsia* sp. Shrubs which make up thicket areas. In the grazed open area which corresponds with the mapped EFZ, the dominant plant species are numerous candelabra flowers (*Brusvigia orientalis*), *Stenotaphrum secundatum* (Buffalo Grass), *Mesembryanthemum* spp. (ice plants), *Romulea* spp. (Froetangs), *Carprobrotus* sp., *Searsia crenata* (Dunekraaibessie), *Salvia aurea* (brown sage), and *Massonia longipes* (coastal hedgehog lily). While these species are typically associated with coastal, sandy habitats, they are not strictly associated with estuarine systems including the upper extent of the tidal zone. Furthermore, no estuarine species from any of the tidal habitats including saltmarsh or supra-tidal vegetation were identified at the site. These species would typically include rushes and sedges such as *Juncus kraussii*, *Cyperus laevigatus*, *Ficinia nodosa* or *Phragmites australis.*

8.4 Wildlife Corridor habitat

During site assessments for this property as well as adjacent properties to the east (unrelated to this project), it is evident that surface water features, such as the spring on this property, occur at the base of the steep slope. For wildlife at the site, this provides a source of fresh water. In most cases development is not proposed nor supported on the steep slopes but focusses on maximizing density on the flatter areas. The risk of this is that water sources become isolated 'islands' within developed areas which cannot be accessed by wildlife, and animals must adapt to life on steep slopes as level land is all developed.

This issue was highlighted with the development team and it was suggested that in addition to the 10m buffer around the pond, a 20 m wildlife corridor be established along the base of the steep slope which is continuous with neighbouring properties and remains unfenced. The purpose is to provide animals with sustained access to water and opportunities for movement in areas of low gradient. This also protects the slope base in terms of groundwater recharge which is an important function of this zone. The preferred SDP layout has accommodated an area larger than 10m around the pond, and includes a green corridor of 20m of relatively flat ground at the base of steep slopes. It is necessary to maintain these areas in their natural state and limit human use and disturbance. The purpose of retaining the pond and buffer, along with the green corridor is to maintain some open space for use by wildlife in an interconnecting corridor between properties that wish to develop (Aquatic specialist, Confluent).

The Risk Assessment Matrix (with an outcome of <u>low</u>, if mitigation measures are implemented), was done by the aquatic specialist (Confluent), which determined that certain mitigation measures must be implemented. Recommended control (impact mitigation) measures for protection of the spring, pond and buffer area during the construction and operational phase of the development are as follows:

The purpose of the pond and spring is to provide a sustained water source for wildlife in the green corridor. Landscaping and gardening staff must not undertake any clearing of vegetation inside of the 10m buffer. A bird hide in the buffer to spot wildlife would be acceptable, but no additional recreational activities. The point is to create a quiet habitat with suitable vegetation cover for continued use by animals, birds etc.

Indigenous plants found in adjacent thickets may be planted around the pond. Only indigenous plants found in the immediate surrounding area may be planted. A list of recommended wetland plants for that can be used to improve vegetation cover of muddy areas and marginal areas of the pond is provided in the aquatic specialist report. Do not place any fish into the pond as only alien invasive fish to the area would survive and could be transferred to other waterbodies on the feet of animals or birds. The only plants that should be removed from the area are listed alien invasive species.

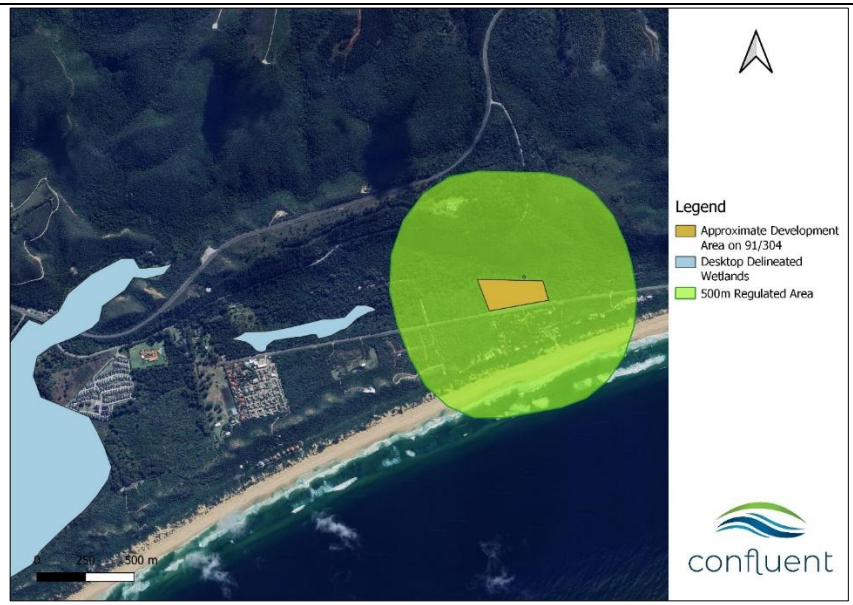
8.5 Light pollution

The EcoRoute Comments and Response report stated that as per the Visual Impact Assessment (Appendix G7 of the EIA report), effective light management needs to be incorporated into the design of the lighting to ensure that the visual influence is limited, without jeopardising operational safety and security. Several measures can be implemented to reduce light pollution and those relevant to the project:

- Where possible construction activities should be conducted behind noise/light barriers that could include vegetation screens.
- Low flux lamps and the direction of fixed lights toward the ground should be implemented where practical.
- Choose “full-cut off shielded” fixtures that keep light from going uselessly up or sideways. Full cut-off light fixtures produce minimum glare. They increase safety because you see illuminated people, cars, and terrain, not dazzling bulbs. If you can see the bright bulb from a distance, it’s a bad light. With a good light, you see lit ground instead of the dazzling bulb. “Glare” is light that beams directly from a bulb into your eye.
- The design of night lighting should be kept to a minimum level required for operations and safety
- The utilisation of specific frequency LED lighting with a green hue on perimeter security fencing.
- Where feasible, put lights on timers to turn them off each night after they are no longer needed

9. Need for a WULA

The need for a WULA is due to the development itself being in the regulated area of a watercourse, the spring, as defined in GN4167. The proposed package plant and possible irrigation with the treated water for the development, also necessitates an application for a 21(g) and 21(e) water use under the National Water Act (NWA), as it is the disposal of waste in a manner which may detrimentally impact on a watercourse, in this case the spring. No other watercourses as defined in the NWA are located within 500 m of the development area. Refer to the map below (Figure 12 of the aquatic specialist report) which shows the development area in relation to mapped wetlands. The wetlands indicated west of the site were identified by the freshwater consulting group and presented in the KELASP.



10. Conflict with the Spatial Development Plan

The urban edge in this area has been defined by the steep slope to the north and the 5m contour line which defines the Estuarine Functional Zone to the south.

As per EcoRoute Comments and Response Report , the reason why the proposed development area extends beyond the identified urban edge is because the Aquatic Assessment confirmed that the area contains no estuarine habitats and is below the 1:100-year flood line of the estuary and is thus not part of the estuarine functional zone, and for this reason, the 4,5 or 5m contour line has not been observed. The steep slopes and forest vegetation to the north have however been identified as sensitive and have been protected with a 20m buffer strip, which is of much greater ecological value than the limiting 5m contour line, which was proven in the specialist studies submitted, to be of no particular environmental consequence.

Furthermore, the SDF confirms that all land development applications for the use of land abutting an urban edge should be considered consistent with the SDF if the land has at any time in the past been used or designated for any urban development, which includes all development of land where the primary use of the land is for the erection of structures. In this case, the land was previously approved for a resort with 50 units, this has also been acknowledged

in the Keurboom Local Environs Spatial plan (see table D3) (Planning Space, Town and Regional Planners) and the old regional structure plan earmarked it for “Recreational purposes” (Planning Space Town and Regional Planners).

See comment (Appendix 6) from Bitou Spatial planning confirming that the proposal is considered to be consistent with the relevant forward-planning policy for the area and is therefore supported from a Spatial Planning perspective.

10.1 Proposed high density development

This is a comment which is noted but is not entirely relevant to the water uses applied for in the WULA and formed part of the EIA and town planning application for the development.

The town and regional planners, (Planning Space) advised that due to objections received, it is evident that the local community is predominantly concerned about the perceived high density of the development and the potential demographic it might attract, and how this may impact on their own property values. **To address the concerns of neighbouring residents, the development concept was revised.** Specifically, the density was reduced from 73 to 60 units, concurrently increasing property sizes from approximately 375 square meters to approximately 500 square meters. As a result, the development's gross density now stands at approximately 4 units per hectare, while the net density is approximately 10 units per hectare. These adjusted figures align more closely with the surrounding neighbourhood densities.

To provide further context for this density revision, the following table offers a comparative analysis with other developments in the vicinity. Notably, both the development density and property sizes are lower than those of the Milkwood Glen Development, the source of the majority of objections.

DEVELOPMENT DENSITIES IN THE AREA					
Development Name	**Property description**	**Status**	**Nr of Units**	**Property size**	**Density**
Candle wood	Pt 129, 92, 16 of 304	Lapsed but intend to reapply	50	37ha	1.3du/ha
Whale Haven		Implemented	17	3.9ha	4.4du/ha
Driftwood	Ptn 15/304	Implemented	5	3ha	1.7du/ha

Ptn 91/304	Ptn 91/304	Lapsed but intend to reapply	60	14.7ha	4.1du/ha
Milkwood	Ptn 14/304	Implemented	50	6.5ha	7.7du/ha
Keurbaai	Ptn of ptn 13	Implemented	11	1.3ha	8.46du/ha
Dolphin Wave	Ptn 12/304	GP approved 2016, road constructed - lapsed?	62	10,3ha	6,2du/ha
Ptn 10/304	Ptn 10/304	Rights granted in 2018 for 32 units	32	22ha	1.45du/ja
The Dunes	Re9/304	Implemented	143	11.7ha	12.6du/ha
Dune Park	Ptn 74/304	Implemented	41	2.1ha	19.5du/ha
Natures Path	Ptn 10 and 192 / 304	EIA granted 2018	98	6.8ha	14.4du/ha
Plett Manor	Ptn 3/304	Implemented	130	9.7ha	13.4 du/ha
Nautilus estate	Erf 1169	2 implemented	6	9.7ha	0.6du/ha

See point 4 in EcoRoute Comments and Response report: :

The density has been reduced from 73 to 60 to accommodate concerns raised by the local community. Property sizes has increase from average of 375m² to 450m², to be more in line with surrounding property sizes. Further specialist assessment has also revealed that an animal corridor of at least 20m along the foot of the hill would be more suitable than the previously proposed 10m buffer from the forest vegetation. This has been included in the Preferred Layout.

The concept of residential development at a net density of about 12 units per ha to the north of Keurboom Road has been established. The topography (steep slopes and low-lying potential flood prone areas) , vegetation and presence of wetland has also been pointed out as identified considerations that need to be investigated further should any development be planned in the area.

10.2 Changes to the natural beauty and rural character of the area

Many of the objectors echoed the assertion that the proposed middle-income residential development, characterised by what they perceived as high-density, is incongruous with the existing character of Keurboomstrand. However, it is important to note that this development shares significant similarities with other developments in the area, such as Milkwood Glen, and is unlikely to have a profoundly adverse impact on the character of the area. The development neither introduces exceptionally high densities nor a land use that is out of sync with its surroundings; it essentially represents a continuation of the prevailing housing landscape (Planning Space Town and regional planners).

10.3 Impact on the quality of life

Noted, but not relevant for the WUL application. It was commented that it will be taken into consideration during the EIA process (EcoRoute comments and response table)

10.4 Property Value

It is possible that there exists a misunderstanding regarding the nature of the affordability level of the housing being proposed. The developer's intention is to offer houses and properties at an approximate price point of R3,000,000. While this may still be beyond the means of many, it does present an opportunity for certain families to attain homeownership. Currently, there are no houses available in this price range, as confirmed by a brief search on Property 24 (Planning Space Town and regional planners)**.**

10.5 Character of the area

Many of the objectors echoed the assertion that the proposed middle-income residential development, characterised by what they perceived as high-density, is incongruous with the existing character of Keurboomstrand. However, it is important to note that this development shares significant similarities with other developments in the area, such as Milkwood Glen, and is unlikely to have a profoundly adverse impact on the character of the area. The development neither introduces exceptionally high densities nor a land use that is out of sync with its surroundings; it essentially represents a continuation of the prevailing housing landscape (Planning Space).

See comment (Appendix 6) from Bitou Spatial planning email confirming that the proposal is considered to be consistent with the relevant forward-planning policy for the area, and is therefore supported from a Spatial Planning perspective.

10.6 Agricultural land zoning of property

An application to the Bitou Municipality rezone the land from “Agriculture” to “Subdivisional Area” has been submitted. This application is currently being assessed. Furthermore, the property was originally earmarked in the Knysna Wilderness Plettenberg Bay Guide plan for “Recreational” purposes. This means that although the property has farm portion numbers and is zoned for agricultural purposes, it is exempt from the provisions of the Subdivision of Agricultural Land Act (Act 70 of 70). An exemption certificate from the Department of Environmental Affairs and Development Planning has been issued to confirm the above (See Attached Appendix 13).

An Agricultural Compliance Statement was compiled by Digital Soils Africa (DSA), attached as Appendix G1 (EcoRoute Comments and Response Report).

10.7 Sense of place

This is a comment which is noted, but is not relevant to the water uses applied for in the WULA and formed part of the EIA application for the development, See EcoRoute Comments and Response report:

Please refer to Annexure 1 for responses regarding Town Planning concerns. Please refer to the Visual Impact Assessment attached as Appendix G7. The well-positioned and designed development infrastructure allows for it to blend in very well with its surroundings and create minimal contrast in the landscape. The alternative 2 development layout option provides a slight advantage over the preferred and alternative 1 development layout options due to its lower density and more open space for landscaping to screen views from the road. But with the implementation of appropriate mitigation measures the preferred and alternative 1 development layouts can also be screened effectively screened from the road.

10.8 Visual, Socio-Economic, Tourism and Traffic impact on the community

It does not form part of the water uses applied for under the NWA 1998 for the WUL application. These concerns have been noted and addressed in the EcoRoute Comments and Response report. Extract from EcoRoute comments and response report:

Traffic Impact:
A Traffic impact study has been done, please see Appendix G 8 of the Draft BAR. It found no unacceptable levels of traffic or congestion. Under escalated (2025) background normal traffic conditions no problems are experienced at the affected junctions in terms of capacity. Access to the development can safely be accommodated from Keurboom Road (MR00394) provided the access is configured as indicated on the SDP attached as Appendix B1. ‘

The EIA done by ECORoute mentions that the proposed development is in line with the statutory planning vision for the area (namely the local Spatial Development Plan), and thus it is assumed that issues such as the cumulative impact of development in terms of character of the area and its resources, have been considered during the strategic planning for the area.

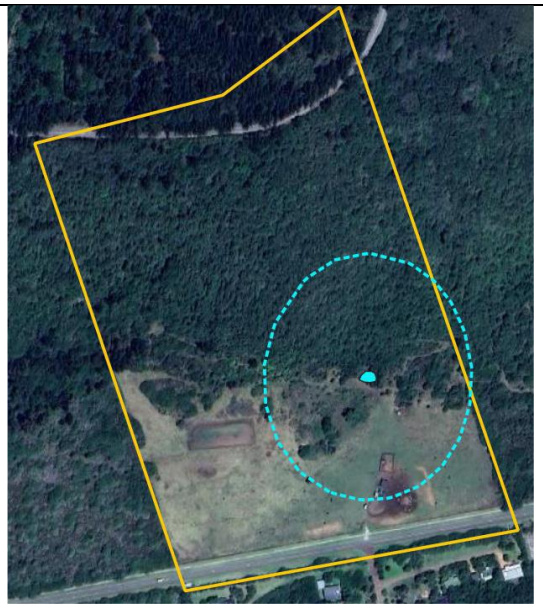
The EIA comments and response from ECORoute further stated with regards to the Spatial Development Framework (SDF) that the SDF confirms that all land development applications for the use of land abutting an urban edge should be considered consistent with the SDF if the land has at any time in the past been used or designated for any urban development, which includes all development of land where the primary use of the land is for the erection of structures. In this case, the land was previously approved for a resort with 50 units, this has also been acknowledged in the Keurboom Local Environs Spatial plan.

Furthermore, the SDF confirms that all land development applications for the use of land abutting an urban edge should be considered consistent with the SDF if the land has at any time in the past been used or designated for any urban development, which includes all development of land where the primary use of the land is for the erection of structures. In this case, the land was previously approved for a resort with 50 units, this has also been acknowledged in the Keurboom Local Environs Spatial plan (see table D3).

11. Concern about the development within 100m of a natural spring; Section 21(c) and 21(i) activities posing long-term threat to aquatic ecosystems

The proposed residential development is located in the Regulated Area of the spring as defined in GN4167 (Figure 15 under point 12 above). The development is therefore classified as a water use in terms of Section 21 c) and i) of the NWA. The Risk Assessment Matrix was applied to determine the level of risk posed by the development to the spring and pond provided all listed control measures are applied. The outcome of the Risk Matrix a Low Risk (Table 2 in the aquatic specialist report), and the control measures applicable are listed in Table 3 of the aquatic specialist report.

The below image shows the delineated pond excavated in front of a small spring on the site and a 100m buffer indicating the proposed development area (area mostly clear of vegetation) is within the regulated area of the watercourse. The purpose of the WULA is to provide the Department of Water Affairs with the necessary specialist studies that assess the level of risk posed by an activity to a watercourse.



The WULA is related primarily to the Section 21 e) and g) water uses. Irrigation with treated effluent is an activity identified in GN36820 of the NWA 1998, stipulates that if irrigation with treated wastewater takes place it is excluded from General Authorisation if not at least 50m above the 1:100 flood line or riparian habitat, whichever is the greatest, or alternatively at least 100 m from a water course, whichever is the greatest, or at least further than 500 m radius from a borehole that is utilised for drinking water or stock watering. In such case a WUL must be applied for, so that studies can be done to determine the impact it may have on surrounding groundwater and boreholes.

Table 2. Risk Assessment Matrix for anticipated Construction and Operational Phase impact for the proposed housing development on Portion 91/304 (this was compiled BEFORE it was known that Section 21 e) and g) uses would trigger the WULA).

Phase	Activity	Impact	Risk Ratings
Construction Phase (Site Preparation)	Earthworks and vegetation clearing for construction activities	Sedimentation of the pond resulting in poor water quality.	**LOW**
		Destruction of vegetation around the pond and spring.	**LOW**
Operational Phase	Inputs of stormwater from roofs and roads into the pond	Reduced physico-chemical water quality including the introduction of litter.	**LOW**
	Landscaping, gardening and maintenance extending into the pond and buffer area	Transformation of indigenous vegetation through planting, removal and / or dumping.	**LOW**
	Fencing	Habitat fragmentation and species movement restriction.	**LOW**

Table 3. Recommended control (impact mitigation) measures for protection of the spring, pond and buffer area during the construction and operational phase of the development.

Phase	Activity	Controls
Construction Phase (Site Preparation)	Earthworks and vegetation clearing for construction activities	• Pre-construction erect temporary fencing along the entire green corridor and open space to protect the pond as well as the corridor from impact during construction. • Add signage to the fence indicating the area as No-Go. • Site inductions for all staff must ensure contractors and works area aware they may not enter the pond and spring area.
	Inputs of stormwater from roofs and roads into the pond	• No stormwater infrastructure to be directed towards the pond. • Routine maintenance inspections to clear windblown / discarded litter from the pond and spring. • Stormwater should be diverted to detention ponds on the site which are indicated on various SDP layouts and are consistent with the SUDS approach to stormwater management.

		management.
Operational Phase	Landscaping, gardening and maintenance extending into the pond and buffer area	• The purpose of the pond and spring is to provide a sustained water source for wildlife in the green corridor. • Landscaping and gardening staff must not undertake any clearing of vegetation inside of the 10m buffer. • A bird hide in the buffer to spot wildlife would be acceptable, but no additional recreational activities. The point is to create a quiet habitat with suitable vegetation cover for continued use by animals, birds etc. • Indigenous plants found in adjacent thickets may be planted around the pond. Only indigenous plants found in the immediate surrounding area may be planted. • A list of recommended wetland plants for that can be used to improve vegetation cover of muddy areas and marginal areas of the pond is provided in this report. • Do not place any fish into the pond as only alien invasive fish to the area would survive and could be transferred to other waterbodies on the feet of animals or birds. • The only plants that should be removed from the area are listed alien invasive species.
	Fencing	• A perimeter fence is recommended along the northern section of the property to preserve the wildlife corridor and natural area beyond. The fenceline should not extend into the 20m corridor and should aim to separate the development area from the conservation / wildlife area. • Clear vu type fencing would have the important benefit of excluding pets (cats and dogs) from the wildlife corridor area where they could deter or kill wildlife large and small. • Fencing should not extend into the corridor on the neighbouring boundaries as the aim is to have an inter-connected corridor that extends across properties, should development occur in adjacent areas.

12 Risk of Mismanagement Due to Bias in Expert Consultation

The appointed specialists sign a declaration to declare and affirm that they are independent, with no business, financial, personal or other interest in the development proposal to compromise their objectivity. The specialists provided unbiased findings of site conditions and put measures in place to ensure the environmental protection as well as socio-economic considerations to meet the general requirements for a specialist. Uncertainties and assumptions must be highlighted in their reports.

13. Setting a precedent in Keurbooms and Plett if approve package plants

This is not the first development in Plettenberg Bay to seek approval with a package plant. The lack of capacity for municipal wastewater treatment and disposal is an issue affecting all new development proposals, and is also not restricted to Plettenberg Bay, as this issue is affecting other towns in the Garden Route. Without the option of package plants, no new residential development proposals would be possible. While package plants are not a perfect solution, there does not seem to be a feasible alternative apart from the no-go option. But if concerns about irrigating treated wastewater associated with this proposal meant the development could not be approved, then a moratorium on all development approvals, wherever capacity is exhausted, should be in place as the issue is pervasive.

14. Disruption of ecosystem, water resources and groundwater recharge due to development

Minimal disruption to the spring and associated pond is anticipated. This is because the 10m buffer is recommended during both the construction and operational phase. The spring's hydrology should be unaffected as the slope will not be modified in any way, and water quality in the pond should actually improve without the high numbers of horses using it. The pond is man-made in any event. From a terrestrial perspective, the open field with minimal vegetation cover where most of the development is proposed does not represent highly sensitive habitat, and is already a fragmentation of more dense vegetation either side of the property. This area is not utilised by any wildlife (apart from birds and smaller animals like tortoises). The transformation of this area for housing therefore represents minimal loss in terms of terrestrial biodiversity and plant species. The most sensitive vegetation is on the slope and that will not be disturbed at all. In fact, the 20m wide wildlife corridor along the slope base will conserve a level area with access to water (the spring) and open to neighbouring properties.

Regarding groundwater recharge, the stormwater management plan has proposed a number of SuDS-type stormwater interventions aimed at maintaining substantial areas of high permeability through permeable paving and stormwater attenuation ponds. Naturally high permeability of the soil at

the site means that water will continue to infiltrate across large areas of the site in spite of construction of houses. The base of the slope which has been set aside as the wildlife corridor is an important groundwater recharge zone, and this area will not be disturbed.

CULLINAN & ASSOCIATES COMMENTS ON THE WATER USE LICENCE APPLICATION – (Appendix 14)

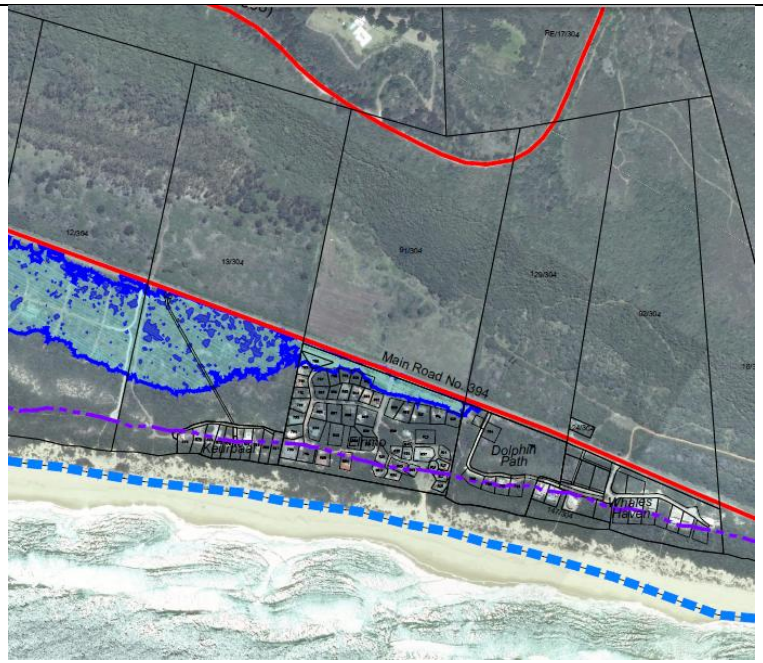
RESPONSE

GENERAL RESPONSE to take note of with regards to the Cullinan Report comments:

All comments from this report were individually answered by various specialists in the field where applicable and the WULA Technical Report updated with the information to address comments raised.

COMMENT 6.1: The WULA Report has failed to identify and assess the full scope of impacts associated with the water uses entailed in the proposed development by failing to take account of the potentially significant flooding risks associated with the Property (which will be exacerbated by the proposed development).

RESPONSE: It is worth noting that Cullinan's point states that the property potentially has a significant flooding risk which would be exacerbated by the development. But no flooding risk has been identified in KELASP planning document for Keurbooms which presents the 1:100 year floodline across the road from the property in a very small area (see clip below from Pg 31 in the report), and recommends certain areas be excluded from development because of their location in relation to floodlines. The report does not exclude Portion 91 and actually identifies the property as having at least 1.6 ha of developable area with development potential for at least 19 units. In contrast, Milkwood Glen (represented by Cullinan, and across the road) has approximately 49 residential erven, some of which are inside the 1:100 yr floodline AND beyond the 100m coastal setback line, covering an area of 6.2 ha, which are very similar parameters to that proposed at Portion 91/304.



COMMENT 6.2: The WULA Report has also sought to 'side-step' bulk services constraints through the implementation of a temporary wastewater treatment system and alternative water sourcing solutions without appreciating the implications of those measures in the context of high rainfall events, and without any clear indication of timeframes for bulk services becoming available for the development.

RESPONSE: The wastewater treatment plant will have no implications under high rainfall conditions. The volume of daily effluent is 22.5kl which translates to less than 0.5mm over the site development area and less than 1% of the storage volumes of the attenuation ponds (Poise Engineering Responses to Engineering Comments, Appendix 17, point 7.2 in the document).

The municipal letter to confirm that the development site will use a temporary WWTP until such time that it can be connected to the Municipal bulk sewer line, when upgraded, can be found in Appendix 5.

Comment provided by Planning Space is that the Service Level Agreement Bulk services constraints will be addressed in the Service Level Agreement between the applicant and the municipality, where the municipality will only support a certain number of houses at a time, i.e. a phased development approach as upgrades to the bulk services is done.

COMMENT 7: This means that substantively relevant considerations which ought to inform a decision by the Department regarding the WULA have not been placed before the decision-maker for consideration. The failure to consider flooding impacts has also meant that the WULA Report misrepresents the purported benefits of the proposed development while the significant negative impacts of flooding, both on the proposed development and surrounding properties, have not been taken into account in order to inform a defensible decision by the Department.

RESPONSES: Additional work has been undertaken by the engineer (regarding flood risks, stormwater management and bulk services assurance) since the WULA technical report was first compiled and advertised through the PPP. Feedback received from I&APs has been thoroughly reviewed and has informed revision of the WULA technical report as well as most of the specialist reports. That is consistent with the desired outcome of the public participation process. The engineer has undertaken additional analysis, modified aspects of the layout, and consulted with the BOCMA engineering specialist regarding engineering services (Aquatic specialist, Confluent).

This is not correct. The Development stormwater management plan mitigates the impact of flood conditions for the Development and ensures that the Development will not negatively impact on surrounding properties under flooding conditions (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.5.1 in the document).

INADEQUATE IDENTIFICATION AND ASSESSMENT OF POTENTIAL FLOODING RISKS ASSOCIATED WITH THE PROPOSED DEVELOPMENT

COMMENT 8. As is shown in Figure 1 of the WULA Report, the Property is located within the Estuarine Functional Zone ("EFZ") which is mapped in terms of the Keurbooms – Bitou Estuary Management Plan (2018) ("KBEMP") as being the area below the 5m contour line.

RESPONSE: Noted, and this is correct. Portion 91/304 is located in the area mapped as the Estuarine Functional Zone (EFZ) which is the case for ANY coastal area located below 5mamsl. The mapped EFZ provides a good indication of low-lying areas that POTENTIALLY have estuarine habitat, are subject to tidal inflows, or part of a floodplain associated with an estuary. The EFZ must always be ground-truthed by an aquatic specialist to establish whether any features typically associated with an estuary are present. In the case of Portion 91/304 there are no estuarine plants on the site (not even remnants), no indication of soil saturation within 50m below the soil surface (indicative of wetland habitat) and the site is mapped outside of the 1:100 yr floodline as previously stated. So while it is located within a mapped area which is based on contours alone, there are no features on the site itself that can be associated with anything related to an estuary. Estuarine sands noted on the site in the geotechnical report relate to historical inundation and landforms over geological time-scales. This is not to say that rising sea levels, high intensity rainfall co-occurring with king tides could not result in flooding in the future. This could potentially affect all developments, including Milkwood Glen, in the future. The engineer has made an allowance for this by stating that the ground floor level of all dwellings would be raised to 4m amsl (Aquatic Specialist, Confluent).

COMMENT 9: The aerial photograph below (extracted from the Town Planning Report Prepared for the Basic Assessment Report by Planning Partners) also shows the location of the property within the Keurbooms Estuary floodplain.

RESPONSE: Noted.

COMMENT 10: The EFZ is defined in terms of the 2014 EIA Regulations as "*the area in and around an estuary which includes the open water area, estuarine habitat (such as sand and mudflats, rock and plant communities) and the surrounding floodplain area*…". Activities within the EFZ are not permitted within an estuary without prior Environmental Authorisation.

RESPONSE: Noted. That is why an application for Environmental Authorisation and a WUL is being done.

COMMENT 11: Significantly the KBEMP states that the EFZ "*provides a useful guideline for a coastal management line, as much of the land below this mark is currently subject to flooding or may be in the future due to climate change (sea-level rise and increased flooding).* The BEMP goes on to state that *"the 5m contour … must be included in all planning documents*". While the coastal protection zone is intended to inform land use planning schemes, a coastal management line ("CML") is intended to limit development in ecologically sensitive areas. In this regard the KBEMP notes that "*for estuaries, the CML is delineated by the 5 m above msl contour or 1:100yr floodline, whichever is wider, to differentiate a zone where formal development should be discouraged*."2

RESPONSE: Noted. Refer to the quoted statement that states the EFZ "provides a useful **guideline**….." As discussed above, the EFZ provides an indication of areas that could be estuarine or aquatic features that may be associated with an estuary. It does not confirm that an estuary occurs exactly where the EFZ has been mapped, and site-specific ground-truthing is always necessary. Note that reference to the coastal management line in the KBEMP is not applicable to Portion 91/304 as it is mapped to the south of the property running through Milkwood Glen which has developed in the 'ecologically sensitive area'. The 5m contour is in effect shown on maps provided in the aquatic specialist assessment, as it is the EFZ which has been indicated. The KBEMP states that formal development should be **discouraged** below 5m amsl, but not excluded. The applicant therefore has the right to apply for approval (Aquatic Specialist, Confluent).

COMMENT 12: From the above, it is clear that development below the 5m contour line should, as far as possible, be avoided as this area is either already subjected to flooding, or is vulnerable to future flooding events owing to the impacts of climate change and sea level rise. The location of the proposed development within the EFZ therefore requires careful consideration in the context of environmental decision-making.

RESPONSE: No actual examples or evidence of serious flooding have been provided by I&APs for this site. On-site flood mitigation (in case of severe storms / future climate change) include 3 stormwater attenuation ponds and raising the ground floor of every dwelling to at least 4mamsl. At some point within the next few years the Ganse Valley WWTW will be constructed and will then be required to accept sewage from this development for treatment, eventually removing the need to continually irrigate the development area with treated wastewater (Aquatic specialist, Confluent).

Poise Engineering comment: No actual examples or evidence of serious flooding have been provided by I&APs for this site and no flooding occurred on the site during the flood event of 2007. The Development stormwater management plan mitigates the impact of flood conditions for the Development and ensures that the Development will not negatively impact on surrounding properties under flooding conditions. The storage volumes of the 3 stormwater

attenuation ponds include a 1 in 100 year 20% Factor of Safety which further mitigates the impact of severe storms / future climate change. Furthermore the ground floor of every dwelling will be raised to at least 4mamsl, higher than the Road MR394 flood barrier level.

COMMENT 13: Taking account of the implications of development within the EFZ, the Keurbooms and Environs Local Area Spatial Plan (2013) ("KELASP") identifies areas that are most vulnerable to coastal, estuarine and fluvial erosion and inundation based on three swash run-up contour lines, including the 4.5 mamsl swash (for exposed or sandy coastlines) which is relevant to the Property. In this regard the KELASP goes on to recommend that authorities should "strictly monitor (and preferably prevent) future development below the 6.5 mamsl swash contour and 4.5 m estuary/river flood contour, as well as on any undeveloped portions of fore dune that are currently backed by development."3.

RESPONSE: The general recommendations quoted from the KELASP are noted, however, the same document (KELASP) identifies Portion 91/304 as having 1.6 ha available for development of at least 19 units. The site-specific planning recommendations cannot be overlooked in favour of general recommendations made in the KELASP. In addition, the 4.5m amsl swash line would include the site, but the foredune across the road separates the site from the sea and is between 10 and 15m amsl, creating an effective barrier from heavy ocean swells and rising sea levels. If this dune were to fail, the entire Milkwood Glen would be the first development affected.

This is considered misinterpretation. The 3 swash lines are 2.5m for sheltered or rocky coastlines, 4,5m for exposed or sandy coastlines and 6,5m for headland and pocket bay beaches. The development is 2,8km from 100m high water mark, and outside of the 1in 100 year backwater floodline. The floodplain of the estuary downstream from the Development is extensively barriered by building structures and dense vegetation. It is clear that in reality no swash whatsoever can be applicable (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.5.1 in the document).

COMMENT 13.1: From the extract from the KELASP annexed as 'B', it is significant to note that: the lower reaches of the Property (where the proposed development will be situated) are largely located within the wetland corridor delineated in terms of the KELASP;

RESPONSE: The wetland specialist assessment incorporated in the KELASP only identified wetlands associated with the Tshokwane wetland system which are shown in the KELASP document and indicated in the following clipped image (Fig 2.4 of the Freshwater Consulting Group's report in the KELASP). The area of wetlands associated with Tshokwane is far to the west of the property. Further, in the FCG report, they indicate a series of wetlands that occur at the base of the slope south of the N2 (consistent with the spring location on Portion 91) and dune slack wetlands to the south along the coastline. No other wetlands are indicated. The second clipped picture is from the same report within the KELASP and shows the series of small wetlands at the base of the slope below the N2 and the coastal dunes between which dune slacks are indicated. The area pictured is once again, west of the project area. Not only did the aquatic specialist find no evidence of wetland habitat on the site (no wetland vegetation or saturated soil indicators up to 50cm below ground level), but the geotechnical report also reported that while the site has a perched water table at around 2m below surface, this is unlikely to rise to anywhere close to 50cm below ground level (Aquatic specialist, Confluent).

Photo 2 A photograph taken from the air of the seeps and depressions extending eastwards from the main watercourse of the Tshokwane River. The seeps draining the rocky ridge and south-facing slopes lie to the north, and the depressions or duneslack wetlands lie to the south.

COMMENT 13.2 Only a narrow area falling between the forested slope and the wetland corridor area on the Property are identified for residential development (i.e. the footprint of the proposed development extends well beyond the area designated on the Property for residential development in terms of the SDF).

RESPONSE: See comment (Appendix 6) from Bitou Spatial planning confirming that the proposal is considered to be consistent with the relevant forward-planning policy for the area, and is therefore supported from a Spatial Planning perspective. The urban edge in this area has been defined by the steep slope to the north and the 5m contour line which defines the Estuarine Functional Zone to the south.

COMMENT 14: The Bitou Spatial Development Framework ("SDF") also specifically states that no development may occur within 1:100 floodline surrounding rivers and delineates a limited area above the 4.5m contour for residential development on the Property, with the remainder of the Property being designated for "Biodiversity/ Conservation" (as reflected in the map from the SDF Annexed as 'C'). Significantly the SDF also points out that "decisions and actions related to the coastal zone must take a risk averse and cautious approach, which takes into account the limits of current knowledge about the consequences of decisions and actions, and which promotes the integrity of coastal ecological systems and functions."5 This is particularly relevant in the context of risks posed to coastal areas by climate change and sea-level rise**.**

As per EcoRoute Comments and Response Report , the reason why the proposed development area extends beyond the identified urban edge is because the Aquatic Assessment confirmed that the area contains no estuarine habitats and is below the 1:100-year flood line of the estuary and is thus not part of the estuarine functional zone, and for this reason, the 4,5 or 5m contour line has not been observed. The steep slopes and forest vegetation to the north have however been identified as sensitive and have been protected with a 20m buffer strip, which is of much greater ecological value than the limiting 5m contour line, which was proven in the specialist studies submitted, to be of no particular environmental consequence.

Furthermore, the SDF confirms that all land development applications for the use of land abutting an urban edge should be considered consistent with the SDF if the land has at any time in the past been used or designated for any urban development, which includes all development of land where the primary use of the land is for the erection of structures. In this case, the land was previously approved for a resort with 50 units, this has also been acknowledged in the Keurboom Local Environs Spatial plan (see table D3) (Planning Space, Town and Regional Planners) and the old regional structure plan earmarked it for “Recreational purposes”.

TOPOGRAPHICAL CONSIDERATIONS AND HISTORICAL FLOODING OF THE SURROUNDING AREA

COMMENT 15: The attached cross-section survey diagram (annexed as “D1”) was developed by Beacon Survey based on the Contour Plan Slope Analysis which was included in the BAR (annexed as “D2”) and the drone survey undertaken by Beacon Survey (annexed as “D3”). The survey diagram clearly shows that the natural ground level of the proposed development site (surveyed between the two points A-A) is less than 5m above mean sea level.

RESPONSE: Noted. This is also indicated on various maps we have presented using 0.5m contours. E.g. Fig 16 in the aquatic specialist report

The section is not relevant in the context of the proposed stormwater management plan. The section does not correctly reflect the lower natural ground levels on the southern side of Road 394. The indication of the 5m MSL line on the section, and the labelling of it as a high water mark is subjective and of no relevance to the current or future stormwater management characteristics (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.4 in the document).

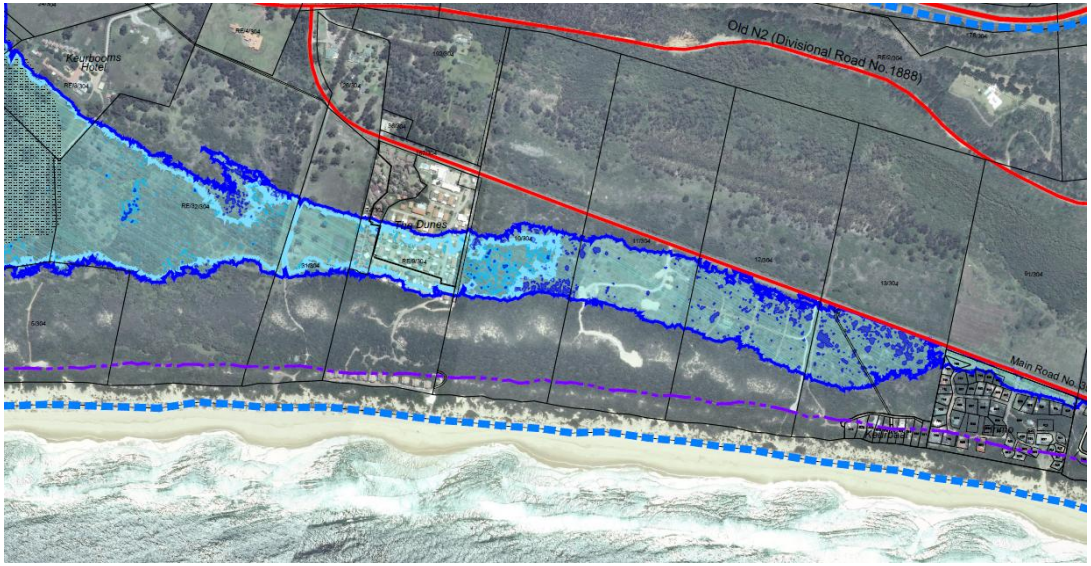
COMMENT 16: The Property is also located only just outside of the 1:100 floodline (as is evidenced by the KELASP floodline map annexed as “E”). In this regard it is particularly significant to note that the 1:100 year floodline tracks Keurbooms Road, which is much the same height above mean se level as the Property, meaning that it will be unlikely to act as a barrier to flooding of the Property.

RESPONSE: Nonetheless, the mapped 1:100 yr floodline is indicated south of the road. It is uncertain whether flooding occurs at this point in Milkwood Glen as it is within this delineated floodline. If that is the case, evidence of such flooding in relation to the road would be welcome (Aquatic Specialist, Confluent).

This statement is considered flawed. The exact floodline level is not indicated on the floodline plan, however the position at which the floodline is plotted and comparison to surveyed levels on the southern side of Keurboonstrand Road indicate the floodline to be approximately 500mm lower than the crest of the road (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.5.1 in the document).

COMMENTS 17. The need to preserve the Keurbooms valley on the north side of Keurbooms Road as a flood plain was confirmed during November 2007 when the Bitou area experienced high rainfall, resulting in the Keurbooms River bursting its banks and flooding surrounding areas (including resorts and individual houses). During that time, Keurbooms Road was impassable, and the Dunes resort was 1.5 metres under water. From here, water spilled into vacant ground on both sides of Keurbooms Road including the entire Keurbooms valley to the south of the road. The flood attenuation role of this property has also been evident during significant storm events (such as those experienced as recently as May 2023).

RESPONSE: Noted that the 2007 was a serious event and a good benchmark of the impacts of serious flooding in the area. The Dunes resort (mentioned in the comment) is located well within the mapped 100 year floodline and close to the Tshokwane wetlands (image below from the KELASP). It is a poorly located development and a simple analysis of the floodlines highlights the risk that materialised. However, portion 91/304 is mapped above the 1:100 year floodline towards the eastern-most extent of the floodline representing a much reduced risk. The flood attenuation role of the property is not going to be diminished because the engineering plan has incorporated a number of SuDS measures including permeable paving on main roads, open pavers (grass blocks on secondary roads, 3 stormwater attenuation ponds, and an armorflex lined swale to intercept runoff from the slope (Aquatic specialist, Confluent).



This statement is considered to be misrepresentative. It refers to “Keurbooms Road”, not Keurboomstrand Road, and implies that water spilled over the road at the Dunes Resort. The level of the floodwater at the Dunes Resort was at least a meter lower than Keurboomstrand Road level. We have consulted Keurboomstrand residents who witnessed the 2007 floods, who have asserted that Keurboomstrand Road 394 was not affected by flooding at the Dunes Resort, nor in the vicinity of the Development and was not impassable. Keurboomsriver Road, more than 2 kilometers to the west, was flooded and impassable (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.5.1 in the document).

COMMENT 18: The very real flooding risks for the Property (and the surrounding area) are borne out by the photographs (annexed as ‘F’) which show high ground water levels on an adjacent property, as well as the flooding of properties in close proximity to the proposed development site.

RESPONSE: The photographs presented indicating flooding are not in close proximity to the site. The Dunes Resort is 1,1 kilometers west of the site, Silverstream and Matjiesfontein Estates are 2,9 kilometers west, on the banks of the Keurbooms River and Twin Rivers is further west between the Bitou and Keurbooms River. Reports received from local residents indicate that at the time of the 2007 floods, the estuary flooding did not back up to the area of the Development (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.5.1 in the document).

INADEQUATE CONSIDERATION OF POTENTIAL FLOODING RISKS

COMMENT 19: While the Aquatic Specialist Report (prepared by Dr Jackie Dabrovsky of Confluent) finds that the Property does not appear to support wetland or estuarine habitat, it nonetheless notes that: “One of the development risks within the EFZ relates to flooding which can be exacerbated by climate change and associated sea level rise. … The property is located on the edge of the1:100 year floodline, which is not mapped to extend beyond the boundary of the property. In reality, the frequency of 100-year flood events is increasing due to climate change, and when coincident with sea-level rise and high tide events, it is not impossible that minor flooding could affect the low-lying area of the property in future.”6

RESPONSE: The risk of future flooding due to climate change is acknowledged in several documents including the aquatic specialist report quoted. The engineer (Poise Engineering) has responded to this risk through provision of the following mitigation measures:

- Site levels will be designed to ensure the effective implementation of the stormwater management system. The minimum floor level of any stand will be 4.0m MSL higher than the Road MR394 flood barrier level.
- The site slopes and road levels will be designed to flat gradients to enable maximum infiltration whilst draining on surface to the ponds.
- The main access roads will be surfaced with permeable paving and secondary roads with grass block paving
- The levels will also be designed to contain flood runoff within the ponds.
- The site design levels will protect homes from flooding and will also detain excess site runoff from flooding over the Keurboomstrand Road.

The development is 2,8km from 100m high water mark, and outside of the 1in 100 year backwater floodline. The floodplain of the estuary downstream from the Development is extensively barriered by building structures and dense vegetation. No swash can be applicable (Poise Engineering Report, Appendix 2).

COMMENT 20: The WULA Report acknowledges (in the background section) that the proposed development will be located within the mapped EFZ of the Keurbooms Estuary. However, despite relevant policy instruments clearly discouraging development below the 5m contour line on the basis of flood risks, and clear evidence of potential flooding risks (which are acknowledged by the Aquatic specialist), the WULA Report dismisses any consideration of potential impacts related to the location of the proposed development within the EFZ. In this regard the Report states the following:
"*The site is located in quaternary catchment K60E, with a freshwater features within the footprint of the property, namely a spring. The only mapped aquatic feature is the Estuarine Functional Zone (EFZ), identified by an area below 5 m.a.m.s.l. (metres above mean sea level). The aquatic specialist found that the site did not have any indication of estuarine habitat during the site visit. The 5m contour is a desktop delineation of estuarine habitat to indicate likely areas of estuarine habitat (Aquatic Report, Appendix 1)*"(Sic).

RESPONSE: Water Use applications are applicable to watercourses only and an estuary is not classified as a watercourse per the National Water Act definition of a watercourse. Thus no impacts are required in the WULA as the development falls within the mapped EFZ (which is not a watercourse).

The mapped aquatic features at the site are associated with estuarine habitat which is mapped according to the contours (5 m.a.m.s.l.) and not the actual habitat present. Ground-truthing of the site by the aquatic specialist confirmed no estuarine habitat present in remnant vegetation at the site, and no hydromorphic indicators in the soil that would indicate wetland conditions (Aquatic specialist, Confluent).

The risk of flooding was addressed by the engineering, see above point 19 mitigation measures put in place.

COMMENT 21: While the WULA Report does not make any mention flooding risk posed by the Keurbooms River Estuary (despite this being recognised by the Aquatic Specialist), it does, to some extent, address the management of localised flooding through reliance on the permeability of soils on the site to allow rainwater to discharge through infiltration. In this regard, excess stormwater requiring longer discharge requirements will, according to the Report, be contained in three stormwater detention ponds which are to be designed to cater for 24-hour runoff volumes of 1:50-year interval storms. However, should the capacity of the retention ponds be exceeded, then stormwater will discharge into the road reserve. No provision has however been made for stormwater management along Keurbooms Road (PO394), notwithstanding the increasing likelihood of 1 in 50 year rainfall events).

RESPONSE: The 3 attenuation ponds will be designed to ensure no overtopping under 100 year RI storm conditions. In the highly likely event of such conditions being exceeded the overflow will reach the Keurboomstrand Road Reserve. There will however not be any impact more severe that under the current natural state. There is no warrant for Keurboomstrand Road Reserve management provisions (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.5.6 in the document).

COMMENT 22: Given the flooding risks associated with the proposed development (both for the development itself and surrounding properties), our client appointed Prof Denis Hughes from Rhodes University (an expert in the field of hydrology) to prepare a review of the WULA Report (the "Hughes Review") which is annexed as "G". The Hughes Review makes the following significant observations regarding the potential flooding risks associated with the site:

RESPONSE: See point 19 mitigation measures for flooding above.

COMMENT 22.1: "… the topography to the east of the Keurbooms Estuary indicates that there are low-lying areas on the inland side of the coastal dunes (Figure 1). Although quite detailed 2m contour maps were provided, they do not extend all the way to the estuary and it is difficult to definitively conclude that the development site is directly hydraulically connected to the estuary during high floods. However, all the evidence points to the fact that it is connected and will form an inundated backwater area when the estuary is subjected to flooding. This is supported by the cross-section data (approximately north-south through the proposed development property) that indicates that most of the area to be developed is below 5m above mean sea level.

RESPONSE: At the time of the 2007 event, which arguably exceeded a 1 in 100 year flood, the estuary backwater did not reach the Development site. The Keurbooms River Estuary is not considered a flood risk (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.6.7 in the document).

The development is 2,8km from 100m high water mark, and outside of the 1in 100 year backwater floodline. The minimum house floor level will be 4.0m, which is higher than the Road MR394 flood barrier level. The floodplain of the estuary downstream from the Development is extensively barriered by building structures and dense vegetation. No swash can be applicable (Poise Engineering comment).

COMMENT 22.2: The cross-section data suggests that almost all parts of the development will be below 5m above mean sea level (the black dashed line in Figure 2). There seems to be little doubt that the site does play a role in providing some flood storage, as well as the fact that the site is highly likely to be flooded during heavy and prolonged rainfall events.

RESPONSE: The design of the stormwater management system for the Development will take cognisance of and ensure that the current flood storage role of the site is not compromised (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.6.10 in the document).

COMMENT 23.1: "the potential benefits of the proposed stormwater retention ponds for reducing the flooding impacts of surface water runoff during high rainfalls have been quite substantially overestimated". The underlying rationale for this observation is (in summary) that:

23.1.1 the duration of flooding events in the region generally exceed 24 hours;

RESPONSE: The pond storage values have been tested for storms of all durations up to 72 hours, and are sufficient (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.6.1 in the document).

COMMENT 23.1.2 the effects of antecedent wetness conditions have been entirely overlooked;

RESPONSE: The effects of antecedent wetness conditions have not been ignored. The stormwater runoff coefficient used in the calculations includes an adjustment factor which varies for storm return intervals and accounts for higher runoff under higher RI conditions (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.6.2 in the document).

COMMENT 23.1.3 possibility of runoff and near surface drainage from the forested slopes to the North of the site.

RESPONSE: The runoff from the forested slope has been accounted for (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.6.4 in the document). The existing runoff is routed via an infiltration swale leading to the spring pond. This status will be maintained. In extreme flooding conditions overflow from the spring pond will be accommodated within the design for the development attenuation ponds.

COMMENT 23.1.4 the likelihood of low draining gradients (given that the site is relatively flat);

Impermeable areas will amount to only 25% of the development area and will not be concentrated but will be spread within the development area, with permeable areas between. Roof runoff will discharge to these permeable areas and the flat gradients will enhance infiltration before runoff reaches the attenuation/infiltration ponds. All rainwater falling on the site currently infiltrates within the area of the site the same will apply post development. The overall spread of infiltration will thus not be significantly different to the current status. The overall volume of rain falling on the site will remain unchanged as will the load on the underground storage capacity (Poise Engineering comment).

COMMENT 23.1.5 limited storage capacity for draining of water into soils (as evidenced by the findings of the Geotechnical Report); anddraining

RESPONSE: See point 23.1.4 above.
According to the Geotechnical report 10 testpits were dug. Groundwater was found in Testpits 1 and 5, positioned on the southern lowest side of the site, at depths 1,95m and 2,3m respectively. The other 8 pits were dug to depth varying between 2,3m and 3m without encountering groundwater (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.2 in the document).

23.2 COMMENT: While the Geotechnical Report suggests that 'Stormwater from roofs can generally be handled in gutters, downpipes and open channels or underground pipes, with suitable discharge locations on the southern side of the site' the cross-section and contour data suggests that there is no drainage route to the south due to the existence of the coastal dune.

RESPONSE: It is correct that there is no drainage route the south. All rainwater falling on the site currently discharges by infiltration and will continue to do so in the developed state (Poise Engineering Comment).

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24. COMMENT: Prof Hughes' report concludes as follows regarding the assessment of flood risks posed to the site:
"The development plans and proposals generally fail to give due consideration to potential future flooding risks associated with evelopment. My evaluation of the available information suggests that the risks to flooding on the development site itself have been quite seriously under-estimated. This includes the risks associated with large scale flooding from the Keurbooms Estuary, as well as those associated with more localised flooding. The extent to which these flood risks are likely to be extended to adjacent properties is somewhat more difficult to be sure about, but there seems to belittle doubt that the development will remove at least some existing flood retentionstorage and could therefore impact on existing developments, notably those in therelatively low lying areas to the south of the road.

RESPONSE: The pond storage values have been tested for storms of all durations up to 72 hours, and are sufficient.

The stormwater retention ponds:
The pond designs compensate for the lesser infiltration area due to impermeable surfaces for the 1 in 100 year storm interval The pond catchment basins will ensure that overall storage volume is not less than the current natural state.
The design of the stormwater management system for the Development will take cognisance of and ensure that the current flood storage role of the site is not compromised. The Development will not remove any flood retention storage. The stormwater management proposals mitigate reduced infiltration capacity relating to foundations (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.6.1 /8.6.6 /8.6.10 /8.6.12 /8.6.13 in the document).

FAILURE TO CONSIDER THE FULL SCOPE OF IMPACTS RELATED TO SECTIONS 21(c) AND (i) WATER USES

25. COMMENT: The section 21 (c) and (i) water uses applied for in terms of the WULA entail "impeding or diverting the flow of water in a watercourse and "altering the bed, banks, course or characteristics of a watercourse", respectively

RESPONSE: Noted

26. COMMENT: "Watercourse" is defined in section 1 of the NWA to mean *(a) " a river or spring;*
(b) a natural channel in which water flows regularly or intermittently;
(c) a wetland, lake or dam into which, or from which, water flows; and
(d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse,
and a reference to a watercourse includes, where relevant, its bed and banks"

RESPONSE: Noted

27. COMMENT: From the above definition it is clear that a “watercourse” includes non-perennial drainage lines and streams which may develop in periods of high rainfall, and would necessarily include areas within the floodplain of a watercourse.

RESPONSE: The spring is the only watercourse as defined by the NWA on the property. While the site may be flood prone because it is low-lying, this has not been a big issue in the past, so it could only be considered an extension of the Keurbooms floodplain at this point. Of course this may change under future scenarios, in which case the site could develop more features as a floodplain wetland which could lead to its classification as a wetland. But at this point, no wetland features are present to classify any other watercourse (Aquatic specialist, Confluent).

28. COMMENT: From section 9 of the WULA Report it is evident that the consideration of water uses (and particularly section 21(c) and (i) water uses) is limited to the impacts on the spring located on the Property, with no consideration whatsoever being given to the implications for the Keurbooms Estuary and its associated floodplain.

RESPONSE: These wetlands are all more than 500m from the development area. Therefore, the only classifiable watercourse within the regulated area is the spring. A floodplain is only a watercourse if it is classified as a floodplain wetland. And as the only wetland habitat is > 500m from the development area, it is not considered part of the assessment in terms of the NWA.

29. COMMENT: The proposed development will undoubtedly disrupt the flow of water to the Keurbooms River and alter the course and characteristics of the drainage lines that feed it, particularly in the Dcontext of a flood event.

RESPONSE: I fail to see how this development could disrupt the flow of water to the Keurbooms River. There is no surface water on the site and the vast majority of it infiltrates the well drained soil. There is no flow to interrupt here (Aquatic specialist, Confluent).

30. COMMENT: The WULA Report clearly fails to appreciate that development below 5m above mean sea level is discouraged, not only due to impacts on the estuarine environment, but also because of the significant flooding risk presented in that regard. Although the WULA Report does Address section 21(c) and (i) water uses related to the spring and pond, it does not consider those water uses in the context of broader flooding-related concerns which have been traversed above. In this regard the WULA ought to have included a hydrological engineering study which provides a comprehensive analysis of the present and future flood risks associated with the proposed development, particularly in light of climate change and sea-level rise.

RESPONSE: The WULA acknowledges that the proposed development is below 5mamsl and does not try to avoid this subject. It is further acknowledged that various planning documents recommend that development not take place below the 5m contour. But development at this level is not prohibited, and several mitigation measures have been considered and provided, particularly in the engineering services report (Aquatic specialist, Confluent). Other developments below the 5m contour have already been approved along Keurboomstrand Road. Including Milkwood Glen.

Poise Engineering: The development is 2,8km from 100m high water mark, and outside of the 1in 100 year backwater floodline. The floodplain of the estuary downstream from the Development is extensively barriered by building structures and dense vegetation. No swash can be applicable.

31. COMMENT: It follows that the WULA Report has failed to provide a comprehensive assessment of impacts associated with section 21(c) and (i) water uses insofar as potential flooding risks are concerned for the Property and surrounding properties.

RESPONSE: Section 21 c and i water uses apply to watercourses. There are no watercourses apart from the spring to consider in terms of Section 21 c and I (Aquatic specialist, Confluent).

INSUFFICIENT BULK WATER AND SANITATION SERVICES AVAILABLE FOR PORPOSED DEVELOPMENT

32. The WULA Report indicates that:

32.1 COMMENT: The existing reticulation system and reservoir has sufficient capacity to service the proposed development. However, there is Insufficient capacity in the bulk water mains serving the reservoir to maintain the peak seasonal demand. Although a masterplan is in place to upgrade the bulk supply system, it is dependent on the availability of municipal finances. Consequently the timeframes for such upgrades cannot be guaranteed. Alternative water sourcing is therefore proposed in terms of rainwater harvesting for domestic use and to treated greywater for irrigation purposes**.**

RESPONSE: The GLS report confirms that the Matjiesfontein Reservoir and the reticulation supply line from the Matjiesfontein Reservoir to the site of the proposed development have sufficient capacity to support the development. The supply line feeding the Matjiesfontein Reservoir however requires upgrading and this is being addressed by Bitou, however the timeline can not be determined . Notwithstanding the above, Bitou have confirmed that they are able to supply water for the Development (Poise Engineering Responses to Engineering Comments, Appendix 17, point 2.1 in the document).

See Appendix 1 for the Municipal letter confirming bulk services for the development.

32.2 COMMENT There is not sufficient capacity in the existing Bitou Bulk Sewage system to accommodate the proposed development until such time as proposed upgrades are completed by the Municipality. A temporary wastewater treatment plant is therefore planned to be installed to treat the development's wastewater pending the planned municipal upgrades.[11]

RESPONSE: The municipal letter to confirm that the development site will use a temporary WWTP until such time that it can be connected to the Municipal bulk sewer line, when upgraded, can be found in Appendix 5.

33. COMMENT: GLS Consulting's Infrastructure Planning Report (the "GLS Report"), which concerns the provision of bulk water and sewerage services, identifies at least 8 other developments which are intended to be undertaken which would need to be supplied with potable water by the Goose Valley/Matjiesfontein/Wittedrift bulk supply system.[12] This means that while municipal upgrades are likely to be held up due to financial constraints, any additional bulk water and sewage capacity which is ultimately made available might still not be sufficient to cater for the proposed development together with the numerous other intended developments.

RESPONSE: A pre-requisite for implementation of the Development will be the conclusion of a Services Level Agreement with Bitou Municipality. Bitou Municipality will not conclude such an agreement . Such an agreement will not be concluded until such time as Bitou are able to allocate water to the Development

34. COMMENT: In the circumstances, the temporary waste water treatment works may be required to be in place for an extended period of time, with associated deterioration concerns. Furthermore, no consideration has been given to how treated effluent will be disposed of during wet periods where there is no irrigation requirement (or where irrigation may in fact contribute to flood risks). Such aspects are particularly relevant in the context of the assessment of impacts related to the water use in Section 21(g) of the NWA.

RESPONSE The wastewater treatment plant will have no implications under high rainfall conditions. The volume of daily effluent is 22.5kl which translates to less than 0.5mm over the site development area and less than 1% of the storage volumes of the attenuation ponds (Poise Engineering Responses to Engineering Comments, Appendix 17, point 7.2 in the document).

35. COMMENT: While the Civil Engineering Report addresses the supplementation of bulk water supply requirements with rainwater harvesting and greywater irrigation, it does not provide any detail regarding the volumes of water that will be made available through such methods. It is therefore not possible to establish whether such measures will in fact be sufficient to supplement the water requirements for the development, particularly during peak season.

RESPONSE The statement that it is insufficient to accommodate the potable water demand is irrelevant.
The Development will not be independent of Bitou water supply and there is no such motivation in the Poise Report (Poise Engineering Responses to Engineering Comments, Appendix 17, point 3.1 in the document).

36. COMMENT: Our client is in the process of appointing a civil engineer to consider the issues related to provision of bulk services further. We therefore intend to supplement these comments to the extent necessary in due course

RESPONSE Noted. With respect to the comments made by ZS2 Consult see Poise Engineering Responses to Engineering Comments, Appendix 17, point 2.3, 3.1, 6,1, 6.6, 7.1, 8.2-8.4.

MISREPRESENTATION OF SECTION 27(1) FACTORS

37. COMMENT: Section 27 of the NWA sets out factors which must be taken into account by the Department in reaching a decision on a WULA.

RESPONSE Noted

38. COMMENT: While the WULA Report addresses to some extent the factors set out in section 27(1) in paragraph 16 of the WULA Report, it has failed to address and/or misrepresented certain aspects in its consideration of the following factors:

38.1 COMMENT: With regard to section 27(1)(b)(the need to redress the results of past racial and gender discrimination), the WULA Report focusses on the economic opportunities which may be available to the local community. There is a vague statement to the effect "Upliftment initiatives for Historically Disadvantaged Individuals (HDI) will be by means of training programs, mentorships and transportation support to HDI employees." It is well known that this kind of vague statement is virtually impossible to enforce, even if conditions are included in a Water Use Licence. The decision-maker for the WULA should not lose sight of the fact that the proposed development will not address past racial and gender discrimination or promote transformation in any way, being the provision of yet more expensive housing aimed at high income individuals in a historically White area. The employment opportunities available are overwhelmingly unskilled (likely poorly-paid) labour and the vast majority of them are temporary.

RESPONSE: Sustainable and effective spatial redress is best achieved through comprehensive spatial planning initiatives that align with national, provincial, and municipal development frameworks and cannot effectively be applied to every individual erf in a municipality.

The property in question is situated in Keurboomstrand, a predominantly high-income and historically advantaged area, far removed from previously disadvantaged communities and public transport opportunities. Development in such areas cannot inherently contribute to transformation or social equity unless it includes mechanisms for subsidised housing and targeted socio-economic upliftment which is normally government driven. Introducing such measures in an area like Keurboomstrand is unlikely to be practically feasible or locally supported.

In this instance the proposal has been found to be compatible with the Spatial Development Framework for Bitou which has identifies other areas suitable for integration. The Socio Economic Statement submitted with your application confirm how the project supports economic empowerment for historically disadvantaged groups by stimulating economic growth, job creation and skills development (Comment by Planning Space Town planning and Regional Planners).

38.2 COMMENT: With regard to Section 27(1)(c) (Efficient and Beneficial use of Water in the Public Interest) the WULA Report notes that "the water use in this case is Section 21 (c), 21 (i), 21(e) and 21(g) for the development of the housing estate within 100 m of the spring. The people that will benefit from the water uses will be the community of Keurboomstrand, since many jobs will be created for locals both during the construction and operational phase of the housing development." By limiting the assessment to exclude a comprehensive consideration of potential flood risks, the WULA Report has misconstrued the purported benefits of the water uses sought to be authorised. The increased flood risks associated with the proliferation of high density

residential development will undoubtedly have significant negative impacts on the local community, and will likely also have knock on impacts on tourism. These issues have not been given any cognisance whatsoever in the WULA Report

RESPONSE: In this instance the proposal has been found to be compatible with the Spatial Development Framework for Bitou which has identifies other areas suitable for integration. The Socio Economic Statement submitted with your application confirm how the project supports economic empowerment for historically disadvantaged groups by stimulating economic growth, job creation and skills development (Comment by Planning Space Town planning and Regional Planners).

The spring and associated pond and buffer are located north of the proposed development area in the green corridor which is to be fenced off from the residential development area. Treated wastewater will be irrigated in gardens and potentially concentrated in the stormwater attenuation ponds which are all at a lower elevation than the natural pond. It is impossible that the treated wastewater can move against gravity to potentially flow into the natural pond, or move uphill to feed into the spring. See Fig. 16 in the Aquatic Specialist report which indicates 0.5 m contours at the site. Furthermore, the spring is sustained by water from the sloping, vegetated area above, which will not be developed. Therefore, it is constantly replenished with clean water.

All the detention ponds will be downslope from the area of the spring. It is therefore a physical impossibility that any flooding of detention ponds will result in contamination of the spring (Poise Engineering).

Similar floods to the Keurboomstrand floods of 2007 will not be exacerbated with the additional development. Road 394 was not affected by flooding at the Dunes Resort, nor in the vicinity of the Development and was not impassable. Keurboomsriver Road, more than 2 kilometres to the west, was flooded and impassable.

The Development's stormwater management plan mitigates the impact of flood conditions and ensures that the Development will not negatively impact on surrounding properties under flooding conditions.

Keurboomstrand residents who witnessed the 2007 floods were consulted, who asserted that Keurboomstrand Road 394 was not affected by flooding at the Dunes Resort, nor in the vicinity of the Development and was not impassable. Keurboomsriver Road, more than 2 kilometers to the west, was flooded and impassable (Poise Engineering).

38.3 COMMENT: The WULA Report's consideration of socio-economic impacts (Section 27(1)(d)) is entirely focussed on purported economic benefits associated with creation of job opportunities and investment in the local economy. The assessment does not however take account of the potential costs associated with flooding events, which costs will largely be borne by surrounding property owners (with knock-on impacts for tourism and future investment in the area) and the Municipality insofar as infrastructure is impacted.

RESPONSE: As per Planning Space response to the comment, Sustainable and effective spatial redress is best achieved through comprehensive spatial planning initiatives that align with national, provincial, and municipal development frameworks and cannot effectively be applied to every individual erf in a municipality.

The property in question is situated in Keurboomstrand, a predominantly high-income and historically advantaged area, far removed from previously disadvantaged communities and public transport opportunities. Development in such areas cannot inherently contribute to transformation or social equity unless it includes mechanisms for subsidised housing and targeted socio-economic upliftment which is normally government driven. Introducing such measures in an area like Keurboomstrand is unlikely to be practically feasible or locally supported.

In this instance the proposal has been found to be compatible with the Spatial Development Framework for Bitou which has identifies other areas suitable for integration. The Socio Economic Statement submitted with your application confirm how the project supports economic empowerment for historically disadvantaged groups by stimulating economic growth, job creation and skills development (comment provided by Planning Space).

See response 38.2 above on flooding of surrounding property.

As per the Poise Engineering report (Version 7, January 2025), the site is situated approximately 3 km east of the eastern bank of the Keurbooms River Estuary. The site falls outside of the 1 in 100 year floodline which is indicated in the Keurbooms and Environs Local Area Spatial Plan (KELASP; 2013) and the Keurbooms-Bitou Estuary Management Plan (KBEMP). The 1 in 100 year floodline reaches approximately 30m from the southern boundary of the site and is effectively stopped by the Keurboomstrand Road. The road is at a height of 3.65 mamsl which effectively creates a barrier between the site and the floodline which is estimated at 3.2 mamsl. Therefore, while the site is undoubtedly low-lying it is not in any mapped floodlines. As a precautionary measure, the minimum floor level of each stand will be raised to 4.0 mamsl. The 1 in 50 year floodline is of no significance to the site, terminating approximately 0,95 km west of the site.

No flooding has been formally recorded on the site. Steep areas to the north of the proposed development area are not going to be developed and will be retained in a natural condition. No more runoff will be generated from this area than under pre-development conditions. Flood Risk is therefore unlikely to be exacerbated on the site through development of the residential housing complex. This is further supported by the high permeability of soils on the site, and SuDS measures that have been incorporated into the stormwater management plan which include the use of permeable paving and grass blocks for the main and secondary internal roads respectively. Three stormwater attenuation ponds (P1, P2 and P3) will collect runoff from roads and roofs. If the natural pond on the northern section of the site were to overflow during flood conditions it is planned to overflow via the road into stormwater P1 (See Eng Drawing DWG23/G210). The previous owner (Mr. David Steele) whose grandfather purchased the property (and neighbouring portions which were collectively farmed) in the 1950s stated that no flooding has ever occurred in his time on portion 91/304 (*pers. comm*. 29 January 2025).

38.4. COMMENT: In considering section 27(1) (f) (Likely Effect of the Water Use to be authorized on the Water Resource and on other Water Users) the WULA Report notes the measures that will be put in place to ensure containment of effluent, mitigate impacts on the spring and pond and manage

stormwater. While the effectiveness of the stormwater management measures has been disputed in the Hughes Review, the WULA Report has also failed to consider the flooding risks associated with the proposed development (and particularly the fact that proposed development will exacerbate flooding risks for surrounding properties).

RESPONSE: See response to comment 38.2 and 38.3.
As per Poise Engineering, the 3 attenuation ponds will be designed to ensure no overtopping under 100 year RI storm conditions. In the highly likely event of such conditions being exceeded the overflow will reach the Keurboomstrand Road Reserve. There will however not be any impact more severe that under the current natural state.

The preliminary designs indicate that the bottom level of the ponds will all be in excess of 1,5m above the groundwater level.

The site levels will be reshaped to drain toward the stormwater ponds, and the surrounding pond catchment crest levels will be designed such that the overall site flood storage volume is not reduced from that of its current natural state. The site will continue to serve as a soakaway.

The Development stormwater management plan mitigates the impact of flood conditions for the Development and ensures that the Development will not negatively impact on surrounding properties under flooding conditions (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.5.1 in the document).

38.5 COMMENT: As regards the strategic importance of the water use to be authorised (Section 27(1)(i)), while it is acknowledged that proposed development may contribute to the municipality's economic and social development objectives, this must be considered in the context of its proposed location within a flood risk area. The WULA Report has failed to take account of substantively relevant policy imperatives which are aimed at guarding against inappropriate and unnecessary development within the EFZ.

RESPONSE:

As per communication with Planning Space Town Planning and Regional Planning, the concept of residential development at a net density of about 12 units per ha to the north of Keurboom Road has been established. The topography , vegetation and presence of wetland has also been pointed out as identified considerations that need to be investigated further should any development be planned in the area.

The urban edge in this area has been defined by the steep slope to the north and the 5m contour line which defines the Estuarine Functional Zone to the south.

The reason why the proposed development area extends beyond the identified urban edge is because the Aquatic Assessment confirmed that the area contains no estuarine habitats and is below the 1:100-year flood line of the estuary and is thus not part of the estuarine functional zone, and for this reason, the 4,5 or 5m contour line has not been observed. The steep slopes and forest vegetation to the north have however been identified as sensitive and have

been protected with a 20m buffer strip, which is of much greater ecological value than the limiting 5m contour line, which was proven in the specialist studies submitted, to be of no particular environmental consequence.

Furthermore, the SDF confirms that all land development applications for the use of land abutting an urban edge should be considered consistent with the SDF if the land has at any time in the past been used or designated for any urban development, which includes all development of land where the primary use of the land is for the erection of structures. In this case, the land was previously approved for a resort with 50 units, this has also been acknowledged in the Keurboom Local Environs Spatial plan (see table D3).

39. COMMENT: It follows that the assessment of the section 27 considerations provided in the WULA Report has overstated the purported benefits associated with the proposed development by failing to give due cognisance to the significant negative impacts associated flooding risks for the Property (and surrounding properties). The potential implications of proposed measures to address bulk service constraints have also not been comprehensively considered. There is no sense in which the proposed development will address past racial and gender discrimination for the purposes of section 27(1)(b) of the NWA.

RESPONSE: See points 38.2 and 38.3 above
Comment provided by Planning Space is that the Service Level Agreement Bulk services constraints will be addressed in the Service Level Agreement between the applicant and the municipality, where the municipality will only support a certain number of houses at a time, i.e. a phased development approach as upgrades to the bulk services is done. The Municipality's final approval will therefore be subject to signature of the service level agreement

PROPOSED DEVELOPMENT DOES NOT MEET REQUIREMENTS FOR SUSTAINABLE DEVELOPMENT

40. COMMENT: Section 2 of the National Environmental Management Act, 1998 ("NEMA") sets out the principles which apply to the actions of all organs of state that "may significantly affect the environment". The decision to issue a Water Use Licence is such an action. The principles must "serve as guidelines by reference to which any organ of state must exercise any function when taking a decision in terms of ... any statutory provision concerning the protection of the environment."13 The WULA does not consider the principles.

RESPONSE: Section 2 of NEMA (Act No. 107 of 1998) sets out the National Environmental Management Principles that guide decision-making and environmental governance in South Africa. These principles apply to all organs of state and serve as the foundation for interpreting and applying environmental laws.

1. Sustainable Development – Development must integrate social, economic, and environmental factors. Water use must balance environmental, social, and economic needs to ensure long-term sustainability.
2. Polluter Pays Principle – Those responsible for environmental harm must bear the cost of preventing or remedying damage. The applicant must ensure that any negative water-related impacts are mitigated, and costs are borne by the responsible party.

3. Precautionary Principle – If environmental harm is uncertain but potentially serious, precautionary measures must be taken. If a water use could cause harm to water resources, measures should be taken to prevent damage.
4. Environmental Justice – Adverse environmental impacts must not unfairly discriminate against any group, particularly disadvantaged communities.
5. Public Participation – Decision-making should involve the public in an open and transparent manner. Affected communities must be consulted as part of the WUL process.
6. Integrated Management – Environmental management must be coordinated across different sectors and government levels. Since water use affects ecosystems, licensing must align with broader environmental governance.
7. Recognition of Traditional Knowledge – Indigenous and community knowledge should be considered in environmental decisions.

The WULA demonstrates these principals and has been undertaken with instruction and input from BOCMA case officer. Specialist studies have been conducted to inform the application and to ensure that any negative water-related impacts can be mitigated. The consultants undertaking the WULA process have adhered to requirements and provided evidence to the Competent Authority to inform a decision. The process allows for a transparent public participation process whereby effected communities can engage in the process. The WULA aligns with the Basic Assessment process being undertaken in accordance with the National Environmental Management Act, 1998 ("NEMA"). The National Environmental Management Laws Amendment Act, Act 2 of 2022 (NEMLAA), came into effect on 30 June 2023. This Act added sub-section 24C(11) to the National Environmental Management Act, Act 107 of 1998, as amended, and requires that the EIA process and a Water Use Application process must be synchronised. BOCMA are also a commenting authority for the Basic Assessment process (EcoRoute).

41. COMMENT: Section 2(3) requires that "development must be socially, environmentally and economically sustainable." In terms of section 2(4), sustainable development requires "the consideration of all relevant factors" including that "[s]ensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure."14 The proposed development is exactly the kind of development envisaged by this subsection and therefore the decision-maker in a WULA is bound to pay special attention to its sustainability. For the reasons set out above, including the susceptibility of the site to flooding, the climate change unknowns with regard to high rainfall events which have not been considered or factored in, the lack of real contribution to transformation, the potential negative effects on existing landowners, the lack of certainty regarding the long-term provision of bulk services, the proposed development does not meet the requirements of sustainability in section 2, and the WULA should therefore be refused

RESPONSE The specific attention in management and planning procedures etc. have been applied in this process because numerous specialists have provided inputs and a rigorous public participation process has been run which has resulted in numerous changes to the layout and operation of the proposed development. Specialist inputs include:

Poise Civil Engineering report
Planning Space Town Planning

Confluent Aquatic assessment
EcoRoute EIA
DHS Groundwater study

CONCLUSION

19. COMMENT: In summary, while the proposed development will be situated in an area that is vulnerable to flooding, the WULA Report:

19.1 COMMENT: fails to give due consideration to potential future flooding risks associated with development below the 5m contour (particularly given concerns around climate change and sea level rise) (Poise Engineering comment).

RESPONSE The development is 2,8km from 100m high water mark, and outside of the 1in 100 year backwater floodline. The minimum house floor level will be 4.0m, which is higher than the Road MR394 flood barrier level. The floodplain of the estuary downstream from the Development is extensively barriered by building structures and dense vegetation. No swash can be applicable. Estuary backwater flooding of the development is not considered a risk of any significance.

19.2 COMMENT: Relies on implementation of a temporary wastewater treatment system and alternative water sourcing solutions without appreciating the implications of those measures in the context of high rainfall events, and without any clear indication of timeframes for bulk services becoming available for the development;

RESPONSE The development does not rely on alternative water sourcing solutions. The temporary wastewater treatment plant is completely sustainable and the irrigation of treated effluent will have no impact on stormwater management, including under severe rainfall conditions. (Poise Engineering Responses to Engineering Comments, Appendix 17, point 7.2 in the document)

19.3 COMMENT: Overstates the purported benefits of the proposed development in its analysis of the factors contained in section 27 of the NWA; and

RESPONSE:
As per Planning Space response to the comment, Sustainable and effective spatial redress is best achieved through comprehensive spatial planning initiatives that align with national, provincial, and municipal development frameworks and cannot effectively be applied to every individual erf in a municipality.

The property in question is situated in Keurboomstrand, a predominantly high-income and historically advantaged area, far removed from previously disadvantaged communities and public transport opportunities. Development in such areas cannot inherently contribute to transformation or social equity unless it includes mechanisms for subsidised housing and targeted socio-economic upliftment which is normally government driven. Introducing such measures in an area like Keurboomstrand is unlikely to be practically feasible or locally supported.

In this instance the proposal has been found to be compatible with the Spatial Development Framework for Bitou which has identifies other areas suitable for integration. The Socio Economic Statement submitted with your application confirm how the project supports economic empowerment for historically disadvantaged groups by stimulating economic growth, job creation and skills development (comment provided by Planning Space).

19.4 COMMENT: Fails to consider the factors in section 2 of NEMA regarding the sustainability of the proposed development.

RESPONSE: See no. 40 above.

20. **COMMENT:** This means that substantively relevant considerations which ought to inform a decision by the Department regarding the WULA have not been placed before the decision-maker for consideration. The failure to consider flooding impacts has also meant that the WULA Report misrepresents the purported benefits of the proposed development as the significant negative impacts of flooding, both on the proposed development and surrounding properties, have not been taken into account in order to inform a defensible decision by the Department.

RESPONSE: All specialist reports have been considered, specialists consulted and specific topics raised answered to by the various specialists in the engineering, aquatic, planning, EIA and geohydrology field. Additional information was added to the WULA Technical report. Flooding was addressed and concerns raised addressed by the specialist engineer. The information provided took all concerns into account and addressed it where applicable, for the department to consider.

21. **COMMENT:** Our clients request that they be informed of, and invited to comment on, any and all other applications for permissions that may be required for this development. Their rights to comment further on this and future applications are hereby reserved.

RESPONSE: Noted

CULLINAN & ASSOCIATES COMMENTS ON REVIEW OF THE WATER USE LICENSING APPLICATION; Hughes report – Appendix 15

RESPONSE

COMMENT: 1. INTRODUCTION

The main objective of this review is to comment on the contents of the Water Use Licence Application (WULA: including the supporting Information contained within the 10 Appendices) for the proposed housing development on Portion 91 of the farm Matjesfontein 304, in Keurboomstrand, Plettenberg Bay. Additional information that was provide to the reviewer included documentation of a number of comments on the draft basic assessment report for the proposed development, as well as several maps and diagrams that highlight the topographic characteristics of the area.

The objectives of this review are:

• To review the main contents of the WULA.
• To comment on the key conclusions of the WULA.
• To review any additional evidence provided that pertain to water resources, flooding or other issues that fall within this reviewer's area of expertise (i.e. hydrology).
• To assess the impact of the proposed development on other existing residential properties in the area with respect to flooding or other issues relating to water resources, water supply and wastewater disposal.
• To make any additional comments that might be relevant to the feasibility of the development.

This review will not address any issues pertaining to socio-economic or non-water related infrastructure (e.g. roads and traffic) impacts of the development, nor is the reviewer qualified to address issues related to biodiversity or other ecological impacts.

RESPONSE: Noted

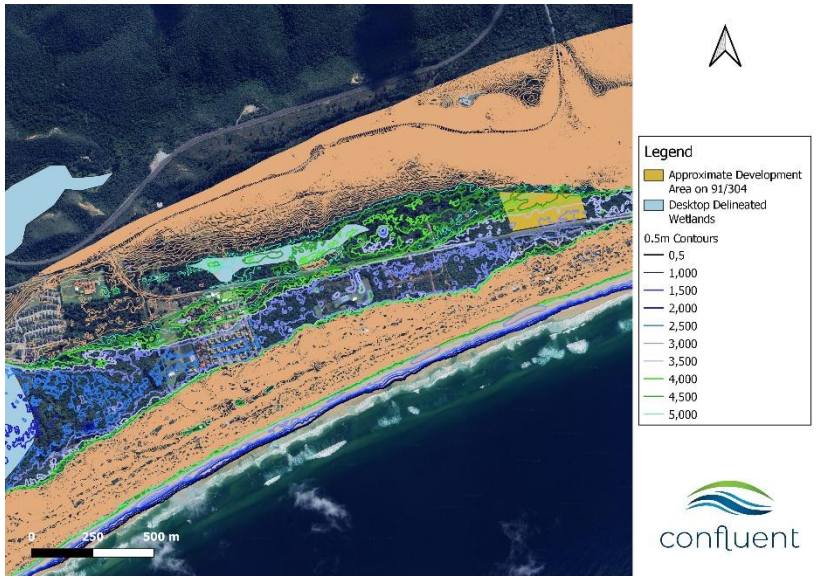
COMMENT: 2. GENERAL OBSERVATIONS ABOUT THE DEVELOPMENT SITE

The proposed development is situated some 5.8km along the shoreline from the main part of the Keurbooms Estuary mouth. It is therefore initially surprising that part of the area is included in the Estuarine Functional Zone (EFZ) of the Keurbooms Estuary. However, a more detailed examination of the topography to the east of the Keurbooms Estuary indicates that there are low-lying areas on the inland side of the coastal dunes (Figure 1). Although quite detailed 2m contour maps were provided, they do not extend all the way to the estuary and it is difficult to definitively conclude that the development site is directly hydraulically connected to the estuary during high floods. However, all the evidence points to the fact that it is connected and will form an inundated backwater area when the estuary is subjected to flooding. This is supported by the cross-section data (approximately north-south through the proposed development property) that indicates that most of the area to be developed is below 5m above mean sea level.

A further characteristic of the site is the existence of a spring (reportedly perennial) and a pond situated at the base of the steep inland slopes to the north. The protection of this spring appears to be a major component of the WULA.

RESPONSE: (provided by J. Dabrowski) 0.5m contours were sourced for the coastline from DEA&DP and a map showing the contours of the site along the entire coastline from Keurbooms estuary to the project area was compiled and added to the aquatic specialist report (see below, and Fig 17 in the

report). The furthest extent of known flooding during the very serious 2007 floods was the Dunes development (indicated in Fig 17 of the aquatic report). That development is 2.5m amsl while everything east of that is at 3m or higher. While extreme floodwaters from the Keurbooms could theoretically push further east, the Keurboomstrand road acts as a barrier to waters from moving north. What is also clear from the below figure is that there is no way that development on Portion 91/304 could remove flood storage area from the floodplain that would negatively impact on flooding for others in the floodplain. As this property is at the end of the floodplain, it would receive floodwaters last, and is therefore more susceptible to other developments removing flood storage area. Again, the 1:100 year floodline is located south of the road and no part of the development proposed is within the floodline.



Protection of spring seems to be major component of WULA

That is correct as it is the only actual watercourse (as defined in the NWA) present on the site, or within the regulated area within which development constitutes Section 21 c) and i) water use. The development is above the 1:100 year floodline, so is out of the regulated area of the floodplain.

COMMENT: 3. OBSERVATIONS ABOUT THE KEY COMPONENTS OF THE WULA

There is a great deal of discussion in the WULA about the likely impacts of the development on the spring and all the regulations pertaining to developments close to a watercourse. However, these seem to be largely irrelevant because there is no drainage line away from the pond that is supplied by the spring and I am doubtful if this spring would be classified as a significant water resource.

A further key component of the report relates to the proposed waste-water disposal system which consists of an underground anaerobic storage tank, a containerised bioreactor plant and an elevated storage tank located in the northwest of the property. Some of the treated waste-water will be used for irrigation of the property but the area close to the spring will not be irrigated. The proposals for the waste-water treatment system seem to be appropriate. However, this also seems to be a temporary measure as the report suggests that the wastewater will eventually be directed to the municipal sewer system when the existing capacity has been increased.

The WULA report includes a stormwater management plan that includes the construction of three stormwater retention ponds and concludes that the total volume of 2 840 m^2 is sufficient to store the runoff that might occur during a 1:50 year rainfall. The 24 hour rainfall depth used in the calculations is about 77mm, and the report appears to assume that a large proportion of the runoff will infiltrate during the 24 hours such that the available storage will be sufficient. However, my experience suggests that flooding events in this region of the Southern Cape coast are typically a result of rainfalls with a longer duration than 24 hours and therefore only focussing on the rainfall depth in a 24 hour period is unlikely to provide an accurate value for the storage required. The effects of antecedent wetness conditions have been ignored and could be very significant. The report also assumes a quite high rate of natural drainage from the ponds. However, the ground is very flat and sea level is not far below, suggesting that drainage gradients will be very low and that the capacity of the soil material immediately beneath the ponds will also be very low. The stormwater management plan also appears to ignore the possibility of runoff and near surface drainage from the forested slopes to the north of the property. The Geotechnical Report (compiled by Outeniqua Geotechnical Services, Knysna) noted that groundwater was identified in test pits at an average depth of 2 m (see also the photographs in Annexure C of this report), supporting the suggestion that there is limited storage capacity for drainage into the soils underlying the property, although this will clearly vary over time depending on the antecedent rainfall conditions. My conclusion is that the potential benefits of the proposed stormwater retention ponds for reducing the flooding impacts of surface water runoff during high rainfalls have been quite substantially over-estimated.

The WULA report does not make any mention of the flooding risk from the Keurbooms River estuary and only focuses on the risks of localised flooding from stormwater.

The Geotechnical Report also suggests that ‘Stormwater from roofs can generally be handled in gutters, downpipes and open channels or underground pipes, with suitable discharge locations on the southern side of the site’. However, the cross-section and contour data suggests that there is no drainage route to the south due to the existence of the coastal dune It is noted that upgrades to the existing bulk water supply system will be required to accommodate the potable water supplies to the new development. It was not clear to me what the time frame of these planned upgrades is and therefore it is difficult to comment on the likely impact of the proposed development on the assurance of water supply to existing users.

RESPONSE:

Doubtful if spring would be classified as significant water resource

Agreed, it is not a significant water resource at all. But it IS classified as a watercourse in terms of the NWA, and surrounding development is regulated as a result.

24 Hour Rainfall Depth

Dr Hughes' calculation of the 24 hour rainfall is incorrect. He incorrectly derived it from the figure from the Poise Report after application of the Coefficient of Discharge. The 50 year 24 hour rainfall depth is actually 140 mm (Poise Engineering).

Stormwater calculations and flooding for only 24-hours questioned

The pond storage values have been tested for storms of all durations up to 72 hours, and are sufficient (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.6.1 in the document).

Stormwater design did not consider antecedent wetness

The effects of antecedent wetness conditions have not been ignored. The stormwater runoff coefficient used in the calculations includes an adjustment factor which varies for storm return intervals and accounts for higher runoff under higher RI conditions (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.6.2 in the document).

The Geotechnical Report noted that groundwater was identified in test pits at an average depth of 2m supporting the suggestion that there is limited storage capacity

The storage capacity is not as limited as implied. The Geotechnical report states that 10 testpits were dug. Groundwater was only found in Testpits 1 and 5, positioned on the southern lowest side of the site, at depths 1,95m and 2,3m respectively. The other 8 pits were dug to depth varying between 2,3m and 3m without encountering groundwater.

High rate of drainage assumed for flat area, low drainage gradients and soil storage area

The pond design infiltration rate has been reduced. See the Poise Report Paragraph 8.5. Percolation occurs through gravity and lateral capillary action which increases on approach to the water table.

Impermeable areas will amount to only 25% of the development area and will not be concentrated but will be spread within the development area, with permeable areas between. Roof runoff will discharge to these permeable areas and the flat gradients will enhance infiltration before runoff reaches the attenuation/infiltration ponds. All rainwater falling on the site currently infiltrates within the area of the site the same will apply post development. The overall spread of infiltration will thus not be significantly different to the current status. The overall volume of rain falling on the site will remain unchanged as will the load on the underground storage capacity.

WULA report does not make mention of flooding from the estuary, and focusses on localised flooding risk from stormwater

As per the Poise Engineering report (Version 7, January 2025), the site is situated approximately 3 km east of the eastern bank of the Keurbooms River Estuary. The site falls outside of the 1 in 100 year floodline which is indicated in the Keurbooms and Environs Local Area Spatial Plan (KELASP; 2013) and the Keurbooms-Bitou Estuary Management Plan (KBEMP). The 1 in 100 year floodline reaches approximately 30m from the southern boundary of the site and is effectively stopped by the Keurboomstrand Road. The road is at a height of 3.65 mamsl which effectively creates a barrier between the site and the floodline which is estimated at 3.2 mamsl. Therefore, while the site is undoubtedly low-lying it is not in any mapped floodlines. As a precautionary measure, the minimum floor level of each stand will be raised to 4.0 mamsl. The 1 in 50 year floodline is of no significance to the site, terminating approximately 0,95 km west of the site.

Surface drainage from forested slopes to the north not considered

The runoff from the forested slope has been accounted for. See the PoiseEngineering Report (Appendix 2), paragraphs 8.2 and 8.3.

The site is characterized by 2 catchment areas. See attached Figure 1 (Appendix 18). The northern Catchment Area 1 consists of the northern forested area with gradients as steep as 50% and a flatter strip at the southern bottom end of the slope. This flat strip has a crest along its southern edge which falls across the site from west to east, and contains the runoff from the northern slope from flowing southward. This strip has a very slight fall eastwards towards a natural spring surrounded by a natural depressed pond area.

This status will be maintained by installation of a Armourflex lined cut off infiltration swale leading to the spring pond. In extreme flooding conditions overflow from the spring pond will be accommodated within the design for the development attenuation ponds.

Overestimated stormwater retention ponds to reduce flooding impacts

This is considered an unsubstantiated, subjective opinion, formulated without design review. The pond designs compensate for the lesser infiltration area due to impermeable surfaces for the 1 in 100 year storm interval The pond catchment basins will ensure that overall storage volume is not less than the current natural state (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.6.6 in the document).

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Flooding risk from Keurbooms

At the time of the 2007 event, which arguably exceeded a 1 in 100 year flood, the estuary backwater did not reach the proposed development site. The Keurbooms River Estuary is not considered a flood risk (Poise Engineering Responses to Engineering Comments, Appendix 17, point 8.6.7 in the document). The site is mapped below the 1:100 year floodline.

The development is 2,8km from 100m high water mark, and outside of the 1in 100 year backwater floodline. The floodplain of the estuary downstream from the Development is extensively barriered by building structures and dense vegetation. No swash can be applicable (Poise Engineering).

No drainage route to the south due to coastal dune

It is correct that there is no drainage route the south. All rainwater falling on the site currently discharges by infiltration and will continue to do so in the developed state (Poise Engineering).

COMMENT: 4. REVIEW OF PHOTOGRAPHIC EVIDENCE AND CROSS-SECTIONAL DATA PROVIDED

A number of maps, topographic cross-sections and photographs of inundation during the November 2007 floods were also provided to the reviewer and these are added as annexures at the end of this report. Annexures A and B show that the 1:100 year flood line (based on the Keurbooms and Environs Local Area Spatial Plan) reaches almost to the development site but is confined to the south of the road. At Portion 91/304 the 394 road itself does not appear to be elevated above the surrounding ground (see the cross-section in Figure 2) and therefore does not act as a barrier to flooding. It is therefore possible that the actual extent of a 1:100 year flood could continue to the north of the road. The extent to which the property currently plays a role in flood attenuation, would also depend on whether or not the property would be locally saturated from local runoff from the slopes to the north.

Annexure C shows some photographs taken during the November 2007 flood when the Keurbooms Road (394) was reported to be impassable and the Dunes Resort (about 1 400 m to the west of the proposed development) was 1.5 m under water. Fortunately, vacant land on both sides of the road were not saturated before the heavy rainfall and floods of 2007 and acted as important areas for floodwater drainage. I assume that this also means that the existing properties to the south of the road, adjacent to the development site and constructed below the slopes of the coastal dune, were also under water.

The cross-section data suggests that almost all parts of the development will be below 5m above mean sea level (the black dashed line in Figure 2). There seems to be little doubt that the site does play a role in providing some flood storage, as well as the fact that the site is highly likely to be flooded during heavy and prolonged rainfall events.

While there is little real evidence to suggest that the frequency of high, flood producing, rainfalls are increasing in this part of South Africa due to climate change, there remains a great deal of uncertainty surrounding the likely effects of climate change. However, there does seem to be some evidence that sea tidal/storm surges are becoming more frequent (note the flooding of the N2 entering Port Elizabeth due to several storm surges during 2024). To suggest that storm surges are likely to impact on flooding in the Keurbooms Estuary EFZ would be very speculative in the absence of further information, however, the possibility should not be entirely discounted.

Although the WULA does consider cumulative impacts related to bulk water infrastructure, the resolution of those concerns appears to depend upon upgrades to these services and it seems as if no timeframe can be guaranteed for the implementation of these upgrades. It is noted that the development plans do include an interim solution for waste-water treatment that appears to be appropriate.

RESPONSE:

At Portion 91/304 the 394 road itself does not appear to be elevated above the surrounding ground (see the cross-section in Figure 2) and therefore does not act as a barrier to flooding.

Figure 2 does not accurately reflect the cross-section across the site. Road MR394 is elevated relative to the lower natural ground levels on the southern side opposite Portion 91/304.

The extent to which the property currently plays a role in flood attenuation

The design of the stormwater management system for the Development will take cognisance of and ensure that the current flood storage role of the site is not compromised.

Annexure C shows some photographs taken during the November 2007 flood when the Keurbooms Road (394) was reported to be impassable and the Dunes Resort (about 1 400 m to the west of the proposed development) was 1.5 m under water.

The comments made are based on misinformation. The estimated level of the floodwater at the Dunes Resort is at least a meter lower than Keurboomstrand Road level. We have consulted Keurboomstrand residents who witnessed the 2007 floods, who have asserted that Keurboomstrand Road 394 was not affected by flooding at the Dunes Resort, nor in the vicinity of the Development and was not impassable. Keurboomsriver Road, more than 2 kilometers to the west, was flooded and impassable.

Storm surges are likely to impact on flooding in the Keurbooms Estuary

The development is 2,8km from the 100m high water mark, and outside of the 1in 100 year backwater floodline. The floodplain of the estuary downstream from the Development is extensively barriered by building structures and dense vegetation. No swash can be applicable

COMMENT: 5. OVERALL CONCLUSIONS ABOUT THE IMPACT OF THE PROPOSED DEVELOPMENT

The main conclusion relates to the impacts of flooding on the development itself, as well as on adjacent existing property developments. I reached the conclusion that the development plans and proposals generally fail to give due consideration to potential future flooding risks associated with Development. My evaluation of the available information suggests that the risks to flooding on the development site itself have been quite seriously under-estimated. This includes the risks associated with large scale flooding from the Keurbooms Estuary, as well as those associated with more localised flooding. The extent to which these flood risks are likely to be extended to adjacent properties is somewhat more difficult to be sure about, but there seems to be little doubt that the development will remove at least some existing flood retention storage and could therefore impact on existing developments, notably those in the relatively low lying areas to the south of the road.

It is assumed that under existing conditions any flood waters that inundate the property will gradually decrease through either evaporation or drainage through the soils towards the south (underneath the coastal dune and eventually seeping out through the beach sands). This drainage is expected to be relatively slow due to the low gradients involved. Apart from the potential for increased localised flooding due to the increase in impervious areas (roofs, roads, pathways, etc.) there is also the potential for the compacted foundations to restrict the rate of sub-surface drainage after flooding and therefore prolong the period of inundation. This is based on the assumption that the compacted foundations (which will reduce the permeability of the soils underneath each building) will reduce the area of the seepage face along the southern boundary of the property. Whether or not this would constitute a significant impact is difficult to say in the absence of more quantitative data, but if there are doubts about the validity of this assumption, it would be appropriate to set up a groundwater flow model to assess the impacts of the reduced permeability on the duration of inundation. This was beyond the scope of this short review. Many of the issues discussed above are also raised in an untitled report by Nick Frootko that was made available to this reviewer. The impacts on bulk water and sewerage services will be largely determined by the timeframes of proposed upgrades to these services by the relevant local authorities. It is therefore difficult to make any definitive comments about such impacts without further information about the implementation of the upgrades. It is clear, however, that without the upgrades the impacts (particularly on bulk water supplies) will be significant.

RESPONSE:

Potential future localised flooding impacts on property and surrounds
Poise Engineering comment:
The project stormwater design engineer is in disagreement with the conclusions reached by Dr Hughes.

The fundamental principle of the stormwater management system for the development is that the full volume of rainfall received on the site will be discharged from the site by infiltration. The introduction of 25% impermeable area will not increase the volume of rainfall received on the site not the volume to be discharged from the site. The levels of the erven and permeable road surfaces will be designed to flat gradients to ensure maximum surface infiltration of stormwater discharge before reaching the attenuation/infiltration ponds. The ponds will mitigate the impact of both, flooding, and the lesser infiltration area. The lowest house floor levels will be set to levels higher than the flood barrier, that being Road MR394.

The risks associated with large scale flooding from the Keurbooms Estuary

It would seem that that Dr Hughes may have been influenced in his thinking my misinformation on the extent of the 2007 Floods. The indeterminable factor of future sea level rise is acknowledged. However with consideration to the Road MR394 flood barrier level of 3,65, the proposed minimum house floor level of 4.00, the 1 in 100 year flood level being lower than Road MR394, and the non applicability of swash ,estuary backwater flooding of the development is not considered a risk of any significance.

Removal of existing flood retention storage

The design of the stormwater management system for the Development will take cognisance of and ensure that the current flood storage role of the site is not compromised. The Development will not remove any flood retention storage.

Appendix 17 – Poise Engineering responses to Hughes, Z2S and Cullinan comments