



TWINSAYER GROUP (PTY) LTD

Basic Assessment (BA) for the Proposed Expansion of the Tissue Manufacturing Capacity at the Kliprivier Operations Base, Gauteng Province


Final Basic Assessment Report

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Basic Assessment Report in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014 (Version 1)

Kindly note that:

1. This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2014.
2. This application form is current as of 8 December 2014. It is the responsibility of the EAP to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
3. **A draft Basic Assessment Report must be submitted, for purposes of comments within a period of thirty (30) days, to all State Departments administering a law relating to a matter likely to be affected by the activity to be undertaken.**
4. **A draft Basic Assessment Report (1 hard copy and two CD's) must be submitted, for purposes of comments within a period of thirty (30) days, to a Competent Authority empowered in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended to consider and decide on the application.**
5. Five (5) copies (3 hard copies and 2 CDs-PDF) of the final report and attachments must be handed in at offices of the relevant competent authority, as detailed below.
6. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
7. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
8. An incomplete report may lead to an application for environmental authorisation being refused.
9. **Any report that does not contain a titled and dated full colour large scale layout plan of the proposed activities including a coherent legend, overlain with the sensitivities found on site may lead to an application for environmental authorisation being refused.**
10. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the application for environmental authorisation being refused.
11. No faxed or e-mailed reports will be accepted. Only hand delivered or posted applications will be accepted.
12. Unless protected by law, and clearly indicated as such, all information filled in on this application will become public information on receipt by the competent authority. The applicant/EAP must provide any interested and affected party with the information contained in this application on request, during any stage of the application process.
13. Although pre-application meeting with the Competent Authority is optional, applicants are advised to have these meetings prior to submission of application to seek guidance from the Competent Authority.

DEPARTMENTAL DETAILS

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prepared by: SiVEST Environmental

TWINSAYER GROUP (PTY) LTD

BASIC ASSESSMENT (BA) FOR THE PROPOSED EXPANSION OF THE TISSUE MANUFACTURING CAPACITY AT THE KLIPRIVIER OPERATIONS BASE, GAUTENG PROVINCE

FINAL BASIC ASSESSMENT REPORT

Executive Summary

The Twinsaver Group (Pty) Ltd (hereafter referred to as “Twinsaver”) operates a Tissue Manufacturing facility located on Portions 8, 20 and 23 of the Farm Zwartkoppies no. 143 in Kliprivier, Gauteng Province. The current operation, known as the Kliprivier Tissue Mill, produces approximately 23 000 tons per annum (tpa) of tissue paper which is converted to various consumer products at the conversion facility located in Pretoria West. In doing so, the operation stores and processes Virgin Pulp and Recycled Fiber in the production of Tissue Paper (10 000 tpa of Virgin Pulp and 21 000 tpa of Recycled Fiber). Papermaking sludge (approximately 7500 air dry tpa) is produced as a waste stream and is sent to a brick manufacturer where sludge mixed together with clay is fired in the brick kilns.

Drying and heating energy at the Kliprivier Tissue Mill is provided by Process Steam and Natural Gas. Approximately 52 000 tpa of Process Steam, which is produced by firing coal in a 10 t/hr (ton per hour) John Thompson 20 bar Boiler, and 59 500 GJ (Gigajoule) heat energy (derived from combusting natural gas) is consumed annually. In addition, electrical Energy is used to drive machinery. The annual consumption equates to approximately 33 650 000 kWhr (Kilowatt hour). Water is used as the main transport and cleaning medium in the Tissue Making process. The operation consumes approximately 107 000 m³ per annum of potable water supplied by the Rand Water Board and 266 000 m³ per annum from various boreholes on the property. Approximately 80% of the water consumed is cleaned to municipal standards and returned to the municipal system.

Twinsaver is now planning to increase its existing Tissue Manufacturing capacity at the Kliprivier Operations Base in Gauteng by installing additional tissue making capacity with a capacity of up to approximately 25 000 tpa.

SiVEST SA (Pty) Ltd (hereafter referred to as SiVEST) has subsequently been appointed as independent Environmental Assessment Practitioner (EAP) by Twinsaver to undertake a Basic Assessment (BA) with regards to the proposed expansion of the Tissue Manufacturing capacity at the Kliprivier Operations Base, Gauteng Province (hereafter referred to as the “proposed development”). The proposed development requires Environmental Authorisation (EA) from the Gauteng Department of Agriculture and Rural Development (GDARD) and will be carried out under the 2014 Environmental Impact Assessment Regulations which were promulgated in December 2014 (Government Gazette No. 38282 of the 4th of December 2014) embodied by the National Environmental Management Act (NEMA) (Act 107 of 1998) as amended. In terms of these regulations, a Basic

Assessment (BA) is required for the proposed development. All relevant legislation and guidelines will be consulted during the BA process and will be complied with at all times.

The proposed development entails the expansion of the tissue manufacturing capacity at Twinsaver's Kliprivier Operations Base, Gauteng province. The proposed development will be located on Portions 8, 20 and 23 of the Farm Zwartkopjies no. 143. Access roads to the proposed study area will not be required as the site is located in a fully developed area.

Two (2) possible locations for the new Tissue Machine Building have been assessed by Twinsaver, namely Option 1 and Option 2. In addition, this new building will be constructed in two (2) phases, with approximately 70% of this building being constructed now and the remaining 30% of it being constructed in the future. The proposed development will therefore consist of the following main activities:

Option 1 (Alternative 1) - New Tissue Machine Building constructed on the Eastern side of the existing Pm3 Building

Phase 1:

- The Reel Storage Warehouse adjacent to the Pm3 building (eastern side) will be demolished to make way for the new Industrial Building. The Reel Storage Warehouse has a footprint of approximately 1680 m².
- Construct a new Industrial Building with a footprint of approximately 3522 m² to house an additional Tissue Machine / Toilet Rewinding Machine.
- Construct a Liquefied Petroleum Gas (LPG) Bulk Storage Facility. This facility will have a capacity of approximately 45 m³ and will cover an extent of 200 m².
- Extend the existing Boiler House by approximately 178 m² in order to accommodate the installation of an additional 10t/hr 20 bar Boiler.
- Upgrade the effluent treatment facility on the site. This will include the construction of an effluent treatment clarifier to treat effluent to municipal specifications. The effluent treatment clarifier will be included in the new Industrial Building and will have a capacity of 16 – 20 m³ / hr. The treated effluent will be sent to the municipal water works via existing infrastructure.
- Site Service like internal roads and storm water systems will be upgraded accordingly. This is expected to cover an extent of approximately 4178 m².

Phase 2:

- Construct the remaining 30% of the new Industrial Building which is to house the Toilet Rewinding Machine. The new Industrial Building will have a footprint of approximately 3522 m² when completed.
- Site Service like internal roads and storm water systems will be upgraded accordingly. This is expected to cover an extent of approximately 4178 m² when completed.

Option 2 (Proposal / Preferred Location) – New Tissue Machine Building constructed on the Western side of the existing Pm3 Building

Phase 1:

- The Weighbridge and Offices, which have a footprint of approximately 169 m², will be demolished in order to make room for the new Industrial Building.
- Construct a new Industrial Building with a footprint of approximately 3522 m² in order to house an additional Tissue Machine / Toilet Rewinding Machine.
- Construct a Liquefied Petroleum Gas (LPG) Bulk Storage Facility. This facility will have a capacity of approximately 45 m³ and will cover an extent of 200 m².
- Extend the existing Boiler House by approximately 178 m² in order to accommodate the installation of an additional 10t/hr 20 bar Boiler.
- Upgrade the effluent treatment facility on the site. This will include the construction of an effluent treatment clarifier to treat effluent to municipal specifications. The effluent treatment clarifier will be included in the new Industrial Building and will have a capacity of 16 – 20 m³ / hr. The treated effluent will be sent to the municipal water works via existing infrastructure.
- Relocate the Weighbridge and build a new Office. This is expected to cover an area of approximately 202 m².
- Site Service like internal roads and storm water systems will be upgraded accordingly. This is expected to cover an extent of approximately 12 305 m².

Phase 2:

- Construct the remaining 30% of the new Industrial Building which is to house the Toilet Rewinding Machine. The new Industrial Building will have a footprint of approximately 3522 m² when completed.
- The upgrade of the site service such as internal roads and storm water systems will be completed accordingly. This is expected to cover an extent of approximately 12 305 m² when completed.

It is expected that the consumption of utilities will increase as follows:

- LPG consumption will increase by approximately 85 000 GJ per annum. This will be supplied via a LPG facility (installed and operated by the selected Gas Supplier) located on site.
- Steam consumption will increase by approximately 40 000 tpa.
- Potable consumption water by 135 000 m³ per annum.
- Effluent Discharge by 108 000 m³ per annum.
- Sludge discharge will increase by approximately 550 air dry tpa.
- Electrical consumption by approximately 30 000 000 kWhr per annum.

Conceptual illustrations for Option 1 (Alternative 1) and Option 2 (Proposal) of the proposed expansion of the tissue manufacturing capacity at the Kliprivier Operations Base are displayed in **Figure i** and **Figure ii** below:

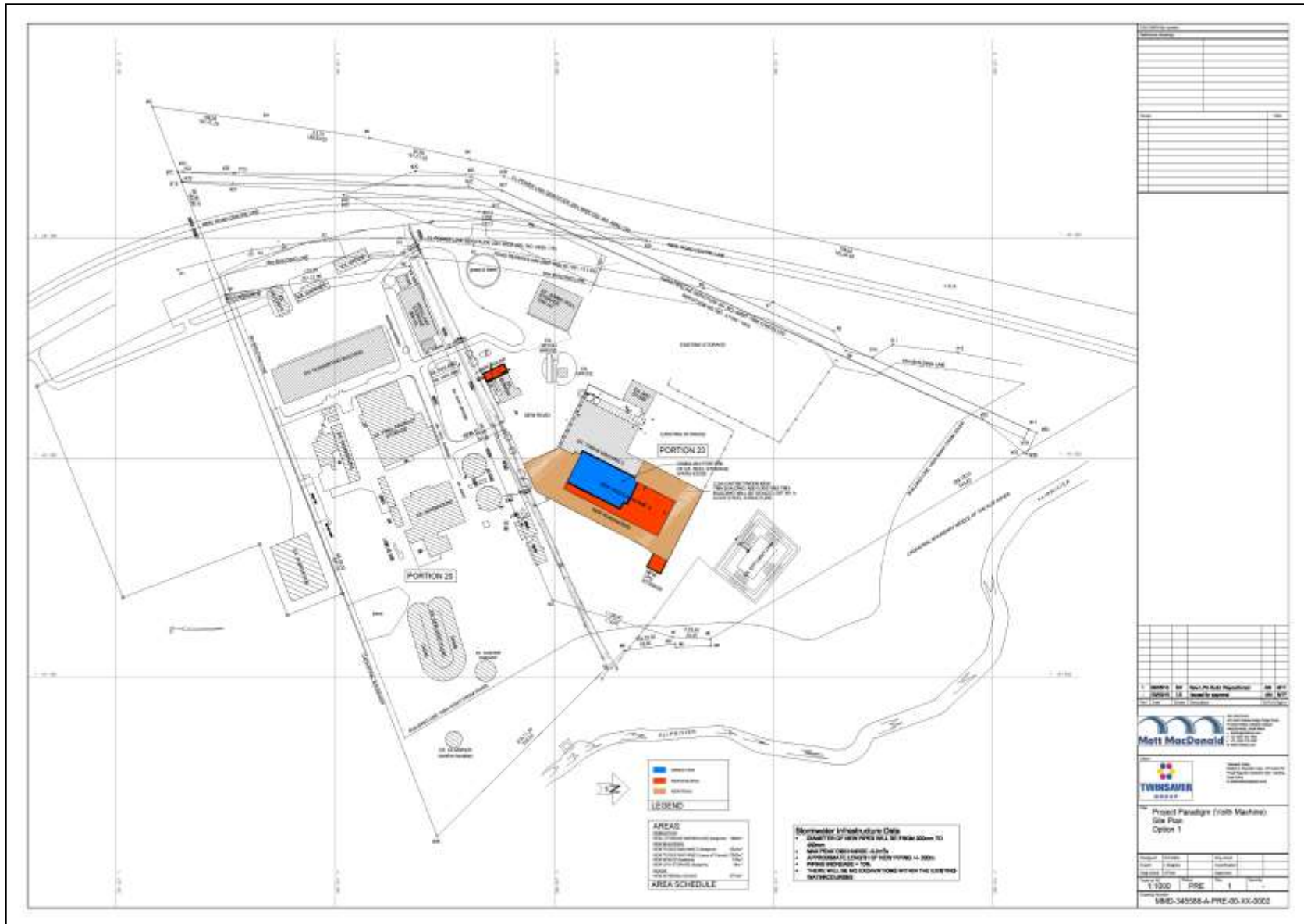


Figure i: Conceptual illustration for Option 1 of the proposed expansion of the tissue manufacturing capacity at the Kliprivier Operations Base

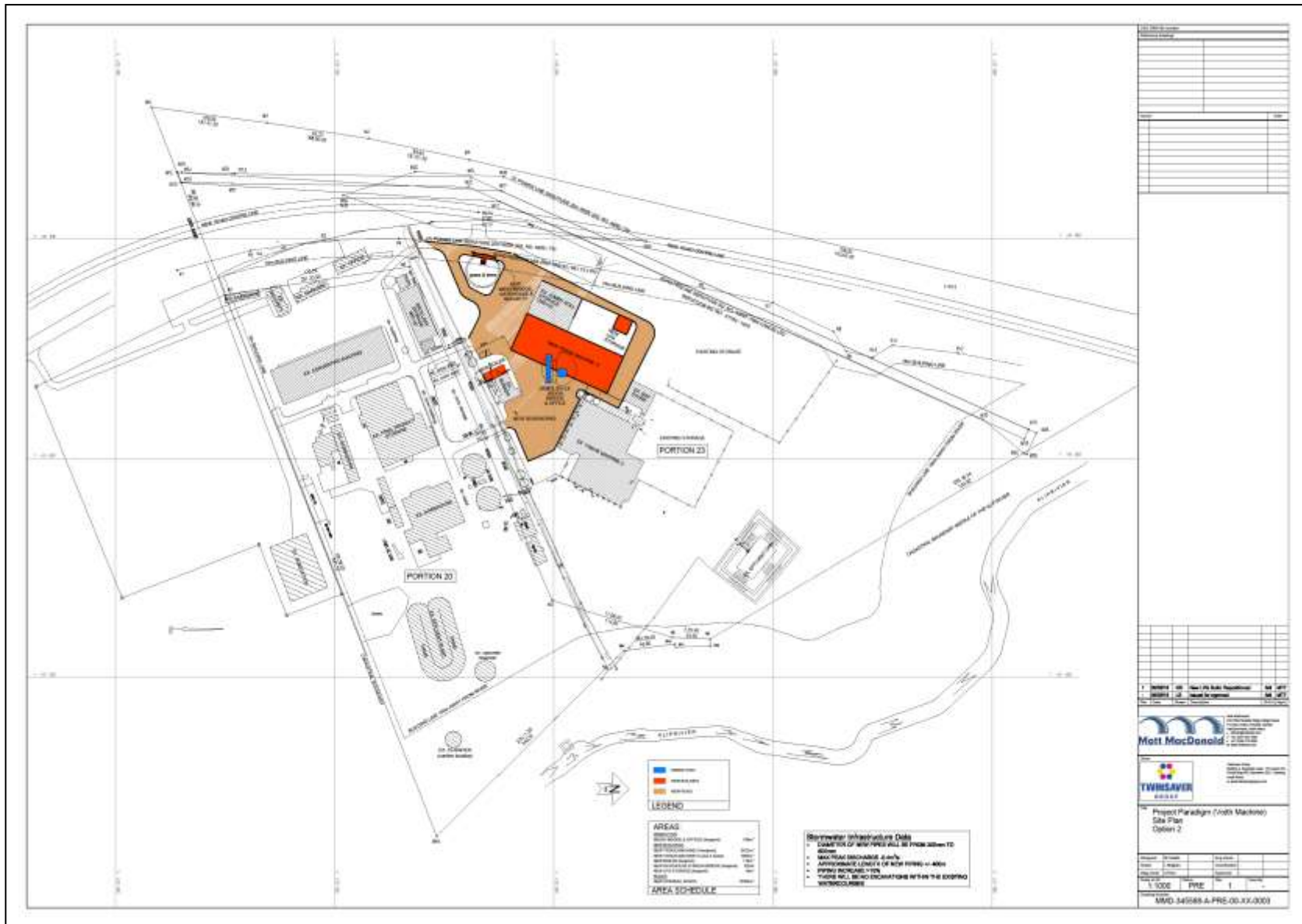


Figure ii: Conceptual illustration for Option 2 of the proposed expansion of the tissue manufacturing capacity at the Kliprivier Operations Base

It is however important to note that GDARD have provided comments on the Draft Basic Assessment Report (DBAR) which was submitted and have indicated that should development take place within 32m of the Kliprivier River, Fauna and Avifauna assessments / studies would need to be undertaken. However, should the applicant intend not to undertake these assessments / studies, the layout plans must be amended. Since Option 1 would result in development taking place within 32m of the Kliprivier River, the above-mentioned assessments / studies will need to be undertaken should this option be considered / proposed as the preferred location for the new Tissue Machine Operation. Therefore, Twinsaver will not be considering Option 1 as the preferred location for the new Tissue Machine Building and will only be considering this option as a layout alternative (i.e. Alternative 1). As a result, the Fauna and Avifauna assessments / studies will no longer be required. Option 2 is therefore being considered / proposed as the only preferred location for the new Tissue Machine Building (i.e. the proposal) at this stage. It must be noted that Option 1 has not been excluded as a possible location for the new Tissue Machine Building as Twinsaver want to show that all possible alternatives have been assessed accordingly. Despite that fact that two (2) possible locations / alternatives for the new Tissue Machine Building have been assessed, only Option 2 is being considered / proposed as a possible location for the new Tissue Machine Building and Option 1 will be avoided.

It should also be noted that Option 2 has been selected as the preferred location for the new Tissue Machine Building by Twinsaver as it will be located closer to the point of supply for the main raw material (i.e. the pulp stock) used in the operations at the Kliprivier site and will ensure that this building will be located further from the Kliprivier River, the Kliprivier River 100 year flood line, as well as the watercourse that runs through the mill site (i.e. the Kok's River). The construction activities associated with Option 2 are also expected to be less disruptive to the existing operations and it will be possible to add another tissue machine alongside in the future if Twinsaver wish to do so.

A Site Locality Map for the proposed expansion of the tissue manufacturing capacity at the Kliprivier Operations Base has been provided in **Figure iii** below.

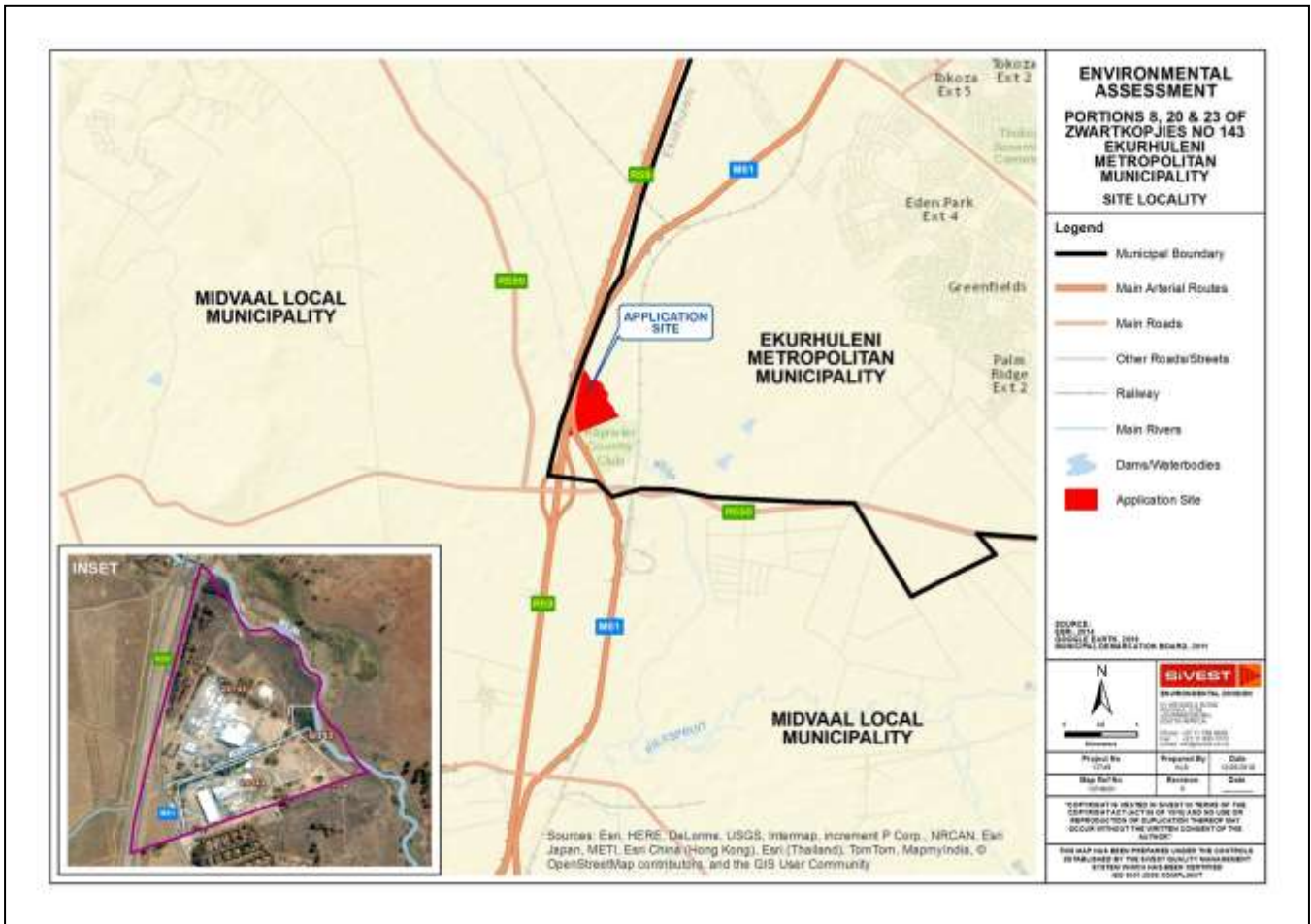


Figure ii: Site Locality Map

The study site is located on Portions 8, 20 and 23 of the Farm Zwartkopjes No. 143 IR, at Kliprivier in the south of Johannesburg, Gauteng Province (GPS Co-ordinate: and 26° 24,587' S; 28° 04,818' E). The study site is accessible via the Old Kliprivier Road which is adjacent to the R550. The existing Kliprivier Paper Mill was established in 1896 and has been significantly transformed over the years. It should be noted that a river known as the Kliprivier River can be found adjacent to the Kliprivier Paper Mill. The majority of the existing plant is currently located within the 1:50 year floodline. This is chiefly due to the age of the plant. The plant was initially constructed adjacent to the Kliprivier River due to the water requirements of paper making. Water is however no longer extracted from the river for the process. In addition, a tributary of the Kliprivier River known as Kok's River also cuts across the property.

According to the Surface Water Assessment, the Kok's River was deemed to be an artificially created channel. In addition, this artificial watercourse seems to have been a modification of a natural watercourse which once flowed through the proposed expansion study site to the Kliprivier River as a tributary. A 27m buffer was subsequently applied to this tributary. The Surface Water Assessment also revealed that one (1) channelled valley bottom wetland can be found within the Kliprivier study site. A buffer zone of 15m was subsequently applied to the identified wetland. The wetland is classified as an Orange Data List area for plant habitat, Red Data List area for

mammal habitat and primary vegetation at a desktop level however. In addition, this wetland was assessed to be categorised with an overall present ecological status (PES) of C – Moderately modified. Overall, the ecological importance and sensitivity class (EISC) for the wetland was assessed to be a category C – Moderate ecological importance and sensitivity. In terms of biodiversity sensitivities, Critical Biodiversity Areas (CBAs) were identified to the east of the Kliprivier study site. This CBA is sensitive in terms of Orange List plant habitat, Red Data List mammal habitat and primary vegetation. Lastly, the river buffer associated with the tributary of the Kliprivier River was deemed to be an Ecological Support Area (ESA).

Site Layout Maps for Option 1 and Option 2 indicating the sensitive areas identified within the existing Twinsaver Kliprivier Mill site have been provided in **Figure iV** and **Figure v** below.



Figure iv: Site Layout Map for Option 1 indicating the sensitive areas identified within the existing Twinsaver Kliprivier Mill site



Figure v: Site Layout Map for Option 2 indicating the sensitive areas identified within the existing Twinsaver Kliprivier Mill site

Only one (1) Basic Assessment (BA) application will be made for the required activities related to the proposed expansion of the tissue manufacturing capacity at the Kliprivier Operations Base. The BA studies will identify the impacts associated with the proposed development and associated alternatives and will undertake a preferred route / site selection process through comparative assessment.

Several specialist studies were conducted during the BA process to identify issues or legislative implications associated with the proposed development. These include:

- Surface Water Delineation and Impact Assessment;
- Heritage Assessment; and
- Air-Quality Assessment (includes a Baseline Assessment and Impact Assessment).

A summary of the specialist findings has been provided in **Table i** below.

Table i: Specialist Findings Summary Table

Environmental Parameter	Summary of Major Findings	Recommendations
<p>Surface Water</p>	<ul style="list-style-type: none"> ▪ The proposed expansion study site is located within the Vaal Primary Catchment. ▪ More specifically, the study site is situated within the quaternary catchment C22D and also falls within the Upper Vaal Water Management Area (WMA). ▪ Potential surface water resources were identified at a desktop level using the following database information sources: <ul style="list-style-type: none"> ○ The Department of Water and Sanitation (DWS, 2014); ○ The National Freshwater Priority Areas (NFEPA, 2011) database; ○ The Gauteng Conservation Plan (Gauteng C-Plan, 2005, 2010 & 2014); ○ The Environmental Potential Atlas (ENPAT, 2000 & 2002); and ○ The South African National Biodiversity (SANBI, 2012; RSA Wetlands, 2010) databases. ▪ From the NFEPA (2011) database, it is identified that the Klip River is located approximately 15m to the east of the property boundary. ▪ The Klip River is a perennial system and 	<ul style="list-style-type: none"> ▪ The following specialist recommendations have been proposed in the context of the proposed expansion: <ul style="list-style-type: none"> ○ All structures should be located outside of the wetland and tributary of the Klip River (including buffer zones) as far as practically possible. However, it is understood that construction will need to take place within the surface water resource and associated buffer zone for particular structures (such as, boiler facility) in which case, right of way construction areas within the surface water resources as well as buffer zones will need to be clearly demarcated. All access to areas outside demarcated areas during the construction of expansion

Environmental Parameter	Summary of Major Findings	Recommendations
	<p>flows in a south easterly direction.</p> <ul style="list-style-type: none"> ▪ The Klip River's Present Ecological Status (PES) as of 1999 is categorised as being a Class E-F: Not an Acceptable Class. ▪ The more recent DWS (2014) database however shows this system to be a Class E: Greatly Modified system. ▪ Furthermore, the Ecological Importance (EI) is classed as Low whilst the Ecological Sensitivity (ES) is also classed as Moderate. ▪ The older 2005 C-Plan database also identified an unnamed non-perennial river system. There is no PES/EI/ES category available at desktop level for this system. ▪ The Gauteng C-Plan 2010 database however shows a buffer along this non-perennial system in addition to a river buffer for the Klip River. ▪ The initial desktop assessment also identified a tributary of the Klip River and one (1) natural channelled valley bottom wetland within the study site. ▪ In terms of biodiversity sensitivities in accordance with the Gauteng C-Plan 3 (2014), a Critical Biodiversity Area (CBA) area was identified to the east of the study site. This CBA is sensitive in terms of Orange List plant habitat, Red Data List mammal habitat and primary vegetation. ▪ The Gauteng C-Plan 3 (2014) database shows the river buffer associated with the tributary of the Klip River to be an Ecological Support Area (ESA). ▪ Following the desktop assessment, an in-field assessment was undertaken which resulted in a refinement of the initial desktop surface water identification study. The in-field identification and delineation results were based on the DWAF (2005) methodology. 	<p>activities are to be prohibited. All other mitigation measures are to be undertaken as stipulated and where applicable.</p> <ul style="list-style-type: none"> ○ A Water Use License Application (WULA) will need to be applied for considering activities that will take place in or in close proximity to the channelled valley bottom wetland as well as the tributary of the Klip River. This must be done in consultation with the DWS prior to undertaking any construction activities related to the proposed expansion. Additional potential applicable water uses should be confirmed when consultation with the DWS is undertaken. ○ A wetland and riparian rehabilitation plan is to be compiled where construction will take place within the wetland and/or the tributary of the Klip River. ○ An operational storm water management plan is critical to prevent contamination of the wetland and tributary of the Klip River. Where additional structures are to be implemented, these will need to be assessed to determine additional potential legislative

Environmental Parameter	Summary of Major Findings	Recommendations
	<ul style="list-style-type: none"> ▪ The field assessment revealed that there is one (1) channelled valley bottom wetland and a tributary of the Klip River on the study site. ▪ A buffer zone of 15m was applied to the identified wetland whilst a 27m buffer was applied to the tributary of the Klip River. ▪ According to the present ecological status (PES), the identified wetland was assessed to be categorised with an overall PES of C – Moderately modified. ▪ According to the evaluation of the wetland ecosystem services provided by the delineated wetland, the channelled valley bottom wetland was found to score highest in terms of streamflow regulation, nitrate removal as well as tourism and recreation. ▪ Toxicant removal, phosphate and sediment trapping scored slightly lower with erosion control, flood attenuation, maintenance of biodiversity and education and research being a measure lower. These ecosystems services are also fairly typical considering the type of the wetland. ▪ The ecological importance and sensitivity class for the wetland was assessed in order to identify any special (rare) attributes and the degree to which each wetland is sensitive to changes in condition. ▪ No Red Data species were observed on the site visit, although this does not discount their occurrence. ▪ The wetland is classified as an Orange Data List area for plant habitat, Red Data List area for mammal habitat and primary vegetation at a desktop level however. ▪ The Klip River (of which the wetland forms of component) therefore functions as an ecological corridor where these features have been identified adjacent, up- and downstream 	<p>requirements.</p> <ul style="list-style-type: none"> ▪ The following mitigation measures have been provided by the specialist: <p>Impacts associated with the Construction Lay-down Area:</p> <ul style="list-style-type: none"> ○ Avoiding direct impacts to surface water resources by not placing the lay-down area in any of the identified surface water resources as well as the established buffer zones; ○ Preventing indirect erosion, sedimentation and run-off impacts by putting adequate structures to deal with increased/accelerated run-off and sediment volumes in place; and ○ Preventing indirect impacts from hazardous substances and liquids by storing all fuel, oil, hazardous substances/liquids, building materials, designated storage areas, vehicles and machinery as far away from the identified watercourses as possible. <p>Loss of wetland and riparian habitat</p> <ul style="list-style-type: none"> ○ Avoiding direct impacts to surface water resources by avoiding the wetland area as far as practically possible during

Environmental Parameter	Summary of Major Findings	Recommendations
	<p>of the proposed expansion study site.</p> <ul style="list-style-type: none"> ▪ Whilst no particular species were observed at the time of the site visit, sensitive vegetation and faunal species may be present at other times of the year, potentially on a seasonal basis. ▪ Overall, the EISC for the wetland was assessed to be a category C – Moderate ecological importance and sensitivity. ▪ In terms of NEMA (1998) and the EIA Regulations (2014), Activities 19 and 49 of Government Notice 983 and Activity 23 of Government Notice 985 have been identified as being applicable as a result of buildings and infrastructure being both directly within a watercourse as well as within 32m of the edge of the watercourse. ▪ With respect to the NWA (1998), water uses (c) and (i) will also be applicable where the proposed expansion activities will be within the wetland and tributary of the Klip River. ▪ These activities and water uses should however be confirmed with the relevant government departments. ▪ The following potential impacts on the delineated wetlands were identified and assessed in terms of the proposed development: <ul style="list-style-type: none"> ○ <u>Pre-construction Phase Potential Impacts</u> <ol style="list-style-type: none"> 1) Impacts associated with the Construction Lay-down Area. ○ <u>Construction Phase Potential Impacts</u> <ol style="list-style-type: none"> 1) Loss of Wetland and Riparian Habitat; 2) Improvement of Wetland and Riparian Habitat; 	<p>construction.</p> <p>Improvement of wetland and riparian habitat</p> <ul style="list-style-type: none"> ○ Identification, removal and replacement of alien tree species from surface water resources. <p>Increased run-off, erosion and sedimentation</p> <ul style="list-style-type: none"> ○ Mitigate increased run-off and sedimentation by implementing soft engineering structures, allowing run-off to exit the site in a controlled and diffuse manner, undertaking construction activities in the low flow season (winter months May/June/July) as far as practically possible, keeping the time that surface are exposed a minimum, implementing re-vegetation where applicable as soon as possible, not allowing exotic flora to establish and by rehabilitating the impacted areas following construction. <p>Water quality impacts</p> <ul style="list-style-type: none"> ○ Preventing pollution of aquatic resources by containing all construction materials and stockpiles in banded areas and by

Environmental Parameter	Summary of Major Findings	Recommendations
	<p>3) Increased run-off, erosion and sedimentation; and 4) Water Quality Impacts.</p> <ul style="list-style-type: none"> ○ <u>Operation Phase Potential Impacts</u> <ol style="list-style-type: none"> 1) Storm Water Management Impacts. ○ <u>Decommissioning Phase Potential Impacts</u> <p>For Option 1, decommissioning will be required for the Reel Storage Warehouse adjacent to Pm3 building (eastern side) to make way for the new Industrial Building should this option proceed to construction. For Option 2, the Weighbridge and Offices will be decommissioned to make room for the new Industrial Building. In both scenarios, the main potential impacts are related to water quality as well as increased run-off, erosion and sedimentation. The same impact significance and proposed mitigation measures therefore apply in order to minimise potential impacts.</p> <ul style="list-style-type: none"> ▪ It was concluded that a Water Use License Application (WULA) will need to be applied for considering activities that will take place in or in close proximity to the channelled valley bottom wetland as well as the tributary of the Klip River. This must be done in consultation with the Department of Water and Sanitation prior to undertaking any construction activities related to the proposed expansion. Additional potential applicable water uses should be confirmed when consultation is undertaken. 	<p>storing all equipment, vehicles, stockpiles, hazardous liquids or substances and materials as far away from the identified watercourses as possible;</p> <ul style="list-style-type: none"> ○ Preventing pollution of aquatic resources by regularly maintaining all vehicles and equipment to avoid any oil, fuel or hazardous leaks or spills and by clearing all leaks and spillages as soon as practically possible; and ○ Preventing pollution of aquatic resources by removing all solid waste on a regular basis as soon as practically possible. <p>Storm water management impacts</p> <ul style="list-style-type: none"> ○ Establishment of Efficient Operational Storm Water Management Systems.
<p>Heritage</p>	<ul style="list-style-type: none"> ▪ The cultural landscape in the study area is mostly industrial, agricultural and associated mining activities. ▪ The entire study area is underlain by rocks of the Malmani Subgroup of the Transvaal 	<ul style="list-style-type: none"> ▪ A buffer zone of 1km should be implemented around significant heritage sites in order to minimise the visual impact.

Environmental Parameter	Summary of Major Findings	Recommendations
	<p>Supergroup, which are Precambrian in age. In the traverse area this Subgroup comprises mainly chert and quartzite.</p> <ul style="list-style-type: none"> ▪ The proposed development will not be intruding on bedrock and therefore it is not anticipated that any paleontological deposits will be affected. ▪ No sites associated with the post-contact era will be affected by the proposed development. ▪ No substantial number of Stone Age sites from any period of the Stone Age is known to exist in this area. This is primarily as a result of a lack of research and general ignorance amongst the layman in recognising stone tools that often may occur. ▪ Although some of the buildings on the property date from the early 1900's, these will not be affected directly or indirectly or visually by the proposed development as none of these are in danger of being altered. ▪ The one building that is to be altered dates from 1997. ▪ Although the proposed area for development has been highly altered through industrial and agricultural activities, the structures associated with these should still be investigated for heritage significance. ▪ Although there are historic buildings on the property, the proposed development would have no adverse effect on these. ▪ The structures that are to be altered date from the early 1990's and therefore hold no historical value. ▪ No sites of heritage potential could therefore be identified on the site. ▪ The assessment revealed that size of the proposed development triggers section 38 of the National Heritage Resources Act (NHRA), 	<p>Paleontological Sites Mitigation Measures:</p> <ul style="list-style-type: none"> ▪ No mitigation measures were provided as impacts on paleontological sites is not anticipated. <p>Built Environment Mitigation Measures:</p> <ul style="list-style-type: none"> ▪ No mitigation measures were provided as none of the structures will be affected by the pipeline construction activities. <p>Cultural Landscape Mitigation Measures:</p> <ul style="list-style-type: none"> ▪ It is recommended that the development designs take into account the positive and negative characteristics of the existing cultural landscape type and that they endeavor to promote the positive aspects while at the same time mitigating the negative aspects. <p>Resource Management Recommendations:</p> <ul style="list-style-type: none"> ▪ The following recommendations are given should any sub-surface remains of heritage sites be identified: <ul style="list-style-type: none"> ○ All operators of excavation equipment should be made aware of the possibility of the occurrence of sub-surface heritage features and the following procedures should they be

Environmental Parameter	Summary of Major Findings	Recommendations
	<p>which requires that a Heritage Impact Assessment (HIA) be undertaken.</p> <ul style="list-style-type: none"> ▪ The specialist however indicated that his assessment has been undertaken in reaction to section 38 of the NHRA being triggered. ▪ In addition, it was advised by the specialist that an EIA level Heritage Assessment would subsequently not be required as the HIA that he has undertaken is considered to be sufficient. ▪ Due to the fact that the project will mainly involve sub--surface infrastructure it is not anticipated that any visual impacts will be encountered. ▪ The site exists in a highly modified state and the development area is an asphalt covered surface making it impossible to determine whether there would be sub-surface sites here. ▪ Although unlikely, sub-surface remains of heritage sites could still be encountered during the construction activities associated with the project. ▪ Such sites would offer no surface indication of their presence due to the high state of alterations in some areas as well as heavy plant cover in other areas. ▪ The following indicators of unmarked sub-surface sites could therefore be encountered: <ul style="list-style-type: none"> ○ Ash deposits (unnaturally grey appearance of soil compared to the surrounding substrate); ○ Bone concentrations, either animal or human; ○ Ceramic fragments such as pottery shards either historic or pre-contact; and ○ Stone concentrations of any formal nature. 	<p>encountered;</p> <ul style="list-style-type: none"> ○ All construction in the immediate vicinity (50m radius of the site) should cease; ○ The heritage practitioner should be informed as soon as possible; ○ In the event of obvious human remains, the South African Police Services (SAPS) should be notified. ○ Mitigation measures (such as refilling etc.) should not be attempted; ○ The area in a 50m radius of the find should be cordoned off with hazard tape; ○ Public access should be limited; ○ The area should be placed under guard; and ○ No media statements should be released until such time as the heritage practitioner has had sufficient time to analyze the finds.

Environmental Parameter	Summary of Major Findings	Recommendations
	<ul style="list-style-type: none"> ▪ Neither of the proposed options would have any detrimental effect on the heritage value of the study area and therefore it is insignificant from a heritage point of view which of these are chosen. ▪ No fatal flaws were identified. 	
Air-Quality	<ul style="list-style-type: none"> ▪ The immediate land-use surrounding the project site consists of predominantly open natural land, agricultural land and industrial and residential areas. ▪ There is a country club (Kliprivier Country Club) and a few residential houses located on the southern boundary of the site. ▪ Two (2) Nature Reserves (Klipriviersberg Municipal Nature Reserve and Suikerbosrand Provincial Nature Reserve) are located approximately 15 km north-west and 18 km south-west of the project area respectively. ▪ The Twinsaver Kliprivier site falls within the Vaal Triangle Air-Shed Priority Area, which was declared a priority area by the Minister of Environmental Affairs and Tourism on the 21st of April 2006 under the National Environmental Management Air Quality Act (Act No. 39 of 2004). ▪ Sensitive receptors surrounding the project site (<15km outside boundary) that were identified include the following: <ul style="list-style-type: none"> ○ A small residential area on the southern border approximately 330m away; ○ An Industrial area located 2.5km to the SSE; ○ Garthdale AH residential area located 4km to the SE; ○ Thokoza residential area located 8km to the NE; ○ Katlehong residential area located 9km to the ENE; 	<ul style="list-style-type: none"> ▪ Fugitive dust emissions associated with construction activities can be minimised with wet suppression, wind speed reduction methods or chemical suppression. ▪ Dust generated from material handling operations (e.g. off-loading & loading of coal) can be significantly reduced by wet suppression with the use of water sprays. However, the combined use of water sprays with chemical surfactants provide more extensive wetting making it a more effective technique than water suppression alone. ▪ The loading, transfer and discharge of materials should take place with a minimum height of fall and be shielded against the wind. ▪ It is recommended that the new boiler is fitted with modern high efficiency multi-cyclones. ▪ Emissions monitoring should be conducted regularly (annual basis) on the units to check the efficiency of the boiler operation and the control device. ▪ Frequent maintenance checks are also advised.

Environmental Parameter	Summary of Major Findings	Recommendations
	<ul style="list-style-type: none"> ○ Vosloorus residential area located 14km to the NE; and ○ Klipriviersberg Municipal Nature Reserve located 15km to the NW. ▪ Existing key sources of air pollution surrounding the project site have been identified to be: <ul style="list-style-type: none"> ○ Industrial Activity; ○ Vehicle dust entrainment on unpaved roads; ○ Wind erosion from exposed areas (e.g. cultivated land etc.); ○ Potential domestic fuel burning; and ○ Agricultural activity and biomass burning. ▪ Based on the prevailing wind fields for the period January 2011 to December 2013, emissions from the proposed extension to the existing Kliprivier Tissue Mill will likely be transported towards the south, south-south-west and south-westerly sectors. ▪ Moderate to fast wind speeds observed may result in effective dispersion and dilution of emissions from the proposed activities. However, moderate to fast wind speeds may also facilitate emissions from proposed activities. ▪ Removal of pollutants via wet depositional processes would be evident during the spring and summer seasons thus lower ambient concentrations of pollutants such as particulates could be expected during these seasons. ▪ Elevated levels of pollutants such particulates would be expected during the autumn and winters seasons due to lower rainfall and the presence of stronger inversion layers. ▪ The baseline air quality situation for the 	<ul style="list-style-type: none"> ▪ The type of fuel that is used in the boiler can also significantly reduce emissions. ▪ Potential mitigation measures and their associated control efficiencies that could be considered in light of the findings therefore include the following: <ul style="list-style-type: none"> ○ Water sprays / misting at loading and offloading points (50% - 70%); ○ Wind breaks at active stockpiles/storage areas (up to 30%); and ○ Water spray with chemical binding agents (up to 90%); ▪ Should it be discovered in the future that any of the activities at the Kliprivier site trigger any of the listed activities in the Air Quality Act, an Atmospheric Emission License would need to be applied for prior to the commencement of the activity. ▪ The Air Quality Act (AQA) requires that an operator of a small boiler (=10MW but less than 50MW net heat input per unit, based on the lower calorific value used) must submit at least one (1) emission report per annum to the relevant licensing authority within 12 months from the date on which the notice took effect, which was 1 November 2013. ▪ The dust management plan

Environmental Parameter	Summary of Major Findings	Recommendations
	<p>area can be summarised as follows:</p> <ul style="list-style-type: none"> ○ Daily average PM10 concentrations at the Kliprivier station for the period January 2011 – May 2016 frequently exceed the 24-hour average PM10 standard of 75µg/m³, particularly over the autumn and winter seasons. Very high daily concentrations exceeding 200µg/m³ have been recorded over the period. ○ Ambient PM2.5 concentrations in the area are relatively high in relation to the current 24-hour average PM2.5 standard of 40µg/m³ (65µg/m³ before Jan 2016) with several exceedances observed over the period January 2012 to May 2016. Higher concentrations are observed over the autumn and winter seasons, particularly over June and July. ○ Ambient hourly average sulphur dioxide concentrations at the Kliprivier station for the period January 2011 to May 2016 are within the acceptable hourly limit of 134 ppb for most of the time; with no exceedances of the daily limit of 48 ppb observed. ○ Ambient hourly average nitrogen dioxide concentrations at the Kliprivier station for the period January 2011 to January 2014 fall below the acceptable standard of 106 ppb for most of the period with a few exceedances of the standard 106 ppb observed. A maximum hourly concentration of approximately 300 ppb was recorded during the autumn season in April 2012. ○ Hourly average carbon monoxide concentrations for the period January 2011 to May 2016 fall below the 	<p>must be implemented within a month of the date of approval.</p> <ul style="list-style-type: none"> ▪ An implementation progress report must be submitted to the air quality officer at agreed time intervals.

Environmental Parameter	Summary of Major Findings	Recommendations
	<p>acceptable standard of 26 000 ppb (26 ppm). Higher concentrations are observed over the winter season. Limited data were available on the SAAQIS for 8-houly average carbon monoxide concentrations.</p> <ul style="list-style-type: none"> ○ Dust Fallout monitoring results for the project site were not available therefore the baseline dust fallout rates for the study site could not be determined. <p>▪ The main conclusions of the Impact Assessment can be summarised as follows:</p> <ul style="list-style-type: none"> ○ Dust and gaseous emissions are identified for proposed activities associated with the proposed extension to the Kliprivier Tissue Mill and will be emitted from the following key sources: <ul style="list-style-type: none"> ▪ <u>Dust and Particulate Emissions:</u> <ul style="list-style-type: none"> - Construction activities; - Coal fired boiler; - Coal handling (off-loading from trucks). ▪ <u>Gaseous Emissions:</u> <ul style="list-style-type: none"> - Coal fired boiler stack emissions. <p>▪ The following main conclusions are made based on the dispersion modelling plots for construction activities associated with Option 1:</p> <ul style="list-style-type: none"> ○ Predicted incremental dust fallout rates do not exceed the allowable dust fallout limit of 1200 mg/m²/day for non-residential areas and 600 mg/m²/day for residential areas beyond the site boundary. Exceedances of the standards are observed within the boundary and in close proximity to the 	

Environmental Parameter	Summary of Major Findings	Recommendations
	<p>area of activity.</p> <ul style="list-style-type: none"> ○ Predicted incremental PM10 concentrations comply with the daily average standard of 75 µg/m³ and the annual average standard of 40 µg/m³ outside the site boundary. Higher daily average PM10 concentrations are observed south-west of the site, with some slight exceedance observed along the south-western boundary of the site. ○ Predicted incremental PM2.5 concentrations comply with the daily average standard of 40 µg/m³ and the annual average standard of 20 µg/m³, with no exceedances observed. <p>▪ The following main conclusions are made based on the dispersion modelling plots for construction activities associated with Option 2:</p> <ul style="list-style-type: none"> ○ Predicted incremental dust fallout rates do not exceed the allowable dust fallout limit of 1200 mg/m²/day for non-residential areas outside the site boundary. The predicted incremental dust fallout rates exceed the residential limit of 600 mg/m²/day along the western boundary of the site. ○ Predicted incremental PM10 concentrations exceed the daily average standard of 75 µg/m³ outside and towards the west of the site but within close proximity to the boundary. Exceedances of the annual average standard of 40 µg/m³ are observed towards the western end of the site but mostly within and along the western boundary. ○ Predicted incremental PM2.5 	

Environmental Parameter	Summary of Major Findings	Recommendations
	<p>concentrations comply with the daily average standard of 40 µg/m³ and the annual average standard of 20 µg/m³ outside the site boundary. Exceedances of the daily limit are observed within the site towards the western boundary.</p> <ul style="list-style-type: none"> ▪ The following main conclusions are made based on the dispersion modelling plots for the operation of the coal fired boilers and the handling of coal: <ul style="list-style-type: none"> ○ Predicted incremental dust fallout rates do not exceed the allowable dust fallout limit of 1200 mg/m²/day for non-residential areas and 600 mg/m²/day for residential areas beyond the site boundary. Exceedances of the standards are observed within the boundary and in close proximity to the area of activity. ○ Predicted incremental PM10 concentrations exceed the daily average standard of 75 µg/m³ beyond the western boundary and along the western portion of the southern boundary of the site. Predicted daily average concentrations are within the threshold beyond all the remaining boundaries and at the nearest residential receptor Kliprivier. Predicted incremental annual average PM10 concentrations comply with the annual standard of 40 µg/m³ outside the site boundary, with exceedances observed near to the source. ○ Predicted incremental PM2.5 concentrations comply with the daily average standard of 40 µg/m³ outside the site boundary and over most portions 	

Environmental Parameter	Summary of Major Findings	Recommendations
	<p>of the site, with a maximum predicted concentration of 40 µg/m³ observed at the source. Predicted incremental PM2.5 concentrations do not exceed the annual average standard of 20 µg/m³.</p> <ul style="list-style-type: none"> ○ Predicted incremental NO₂ concentrations are well within the hourly average standard of 200 µg/m³ and the annual average standard of 40 µg/m³. Predicted incremental NO₂ concentrations are predicted to be very low to negligible both within and outside the site boundary. ○ Predicted incremental SO₂ concentrations are well within the allowable hourly, daily and annual standards of 350 µg/m³, 125 µg/m³ and 50 µg/m³. Predicted incremental SO₂ concentrations are predicted to be very low to negligible both within and outside the site boundary. <p><u>Aspects to note from the findings:</u></p> <ul style="list-style-type: none"> ▪ Predicted incremental dust fallout rates and PM10 and PM2.5 concentrations due to construction activities associated with Option 2 are predicted to be higher beyond the site boundary and at the nearest residential receptor Kliprivier compared to Option 1. ▪ Option 1 is therefore preferred in terms of ambient air quality impacts, however, both options are associated with a low negative impact. Furthermore, the impact is short term and limited to the period of construction. ▪ Predicted incremental concentrations due to proposed activities associated with the extension are shown to be relatively low in relation to the standards outside the site boundary and at the nearest residential area 	

Environmental Parameter	Summary of Major Findings	Recommendations
	<p>Kliprivier.</p> <ul style="list-style-type: none"> ▪ However, exceedances of the National ambient air quality standards for background PM10, PM2.5, SO2 & NO2 concentrations are frequently observed at the Kliprivier air quality monitoring station, particularly during the autumn and winter seasons. ▪ Even though relatively low concentrations are observed outside the site boundary for the non-cumulative scenario, the implementation of mitigation measures should be conducted where possible to reduce additional levels in background concentrations both within and outside the site boundary. ▪ Based on the information provided, it does not appear as if the proposed extension will trigger any of the listed activities in the Air Quality Act. An Atmospheric Emission License is therefore not required for the proposed expansion at the Kliprivier site. 	

An impact assessment was conducted in order to ascertain the level of each identified impact, rate the significance of these impacts and to determine mitigation measures which may be required. The potential positive and negative impacts associated within these studies have been evaluated and rated accordingly. The results of the Heritage and Air Quality Assessments have indicated that no fatal flaws exist as a result of the proposed development and all identified impacts were rated to have a low negative significance. The impact assessment for the Surface Water specialist study revealed that the identified impacts were rated as having medium negative significance prior to the implementation of mitigation measures. It is important to note that the greatest anticipated impact from a surface water perspective would be the storm water management impacts, as this was found to have a high negative significance rating prior to the implementation of mitigation measures. All of the identified impacts are however expected to have low negative significance rating after the implementation of mitigation measures.

The Air Quality Impact Assessment revealed that the proposed expansion at the Kliprivier site is not expected to trigger any of the listed activities in the Air Quality Act and therefore an Atmospheric Emission License would not be required. It was however recommended that regular monitoring be undertaken in order to ensure that the activities taking place at the Kliprivier site remain under the thresholds in the listed activities. Thus, should the monitoring results reveal that any of the future activities on site exceed the thresholds in the listed activities, an Atmospheric Emission License would need to be applied for prior to the commencement of the activity. The Heritage Impact Assessment (HIA) revealed that the size of the proposed development triggers section 38 of the

National Heritage Resources Act (NHRA). Despite this, the heritage specialist indicated that his heritage assessment has been undertaken in reaction to section 38 of the NHRA being triggered and that this assessment can be considered to be sufficient for the proposed development. An EIA level Heritage Assessment is therefore not required for the proposed development. Since no fatal flaws have been identified and no heritage sensitive areas were found on site or within the direct development zone, no significant legislative implications are anticipated from a heritage perspective. The proposed development will however be registered with the South African Heritage Resources Agency (SAHRA) and the HIA Report will be submitted to the South African Heritage Resources Information System (SAHRIS) website. This will allow SAHRA to provide comments and recommendations with regards to possible heritage implications. It must be noted that the Surface Water Assessment has determined that a water use license application (WULA) will need to be applied for. This is due to the fact that certain activities associated with the proposed development will take place in or in close proximity to the channelled valley bottom wetland as well as the tributary of the Kliprivier River (i.e. the Kok's River). This water use license application must be done in consultation with the Department of Water and Sanitation (DWS) prior to undertaking any construction activities related to the proposed expansion. Additional potential applicable water uses should also be confirmed when consultation is undertaken.

The two (2) possible locations for the new Tissue Machine Building which Twinsaver have assessed (i.e. Option 1 and Option 2) were comparatively assessed in order to determine the preferred alternatives from a heritage, air quality and surface water perspective. With regards to the comparative assessment of alternatives from a heritage perspective, it was found that neither of the proposed options would have any detrimental effect on the heritage value of the study area. It is therefore unimportant from a heritage point of view which of the options are chosen. With regards to air quality, Option 1 (the alternative) is preferred in terms of ambient air quality impacts. However, both options are associated with a low negative impact. Furthermore, the impact is short term and limited to the period of construction. From a surface water perspective it was deemed that Option 2 would be the preferred option. This is due to the fact that the placement of the LPG storage facility in Option 1 is required within the wetland which will result in a higher and long term direct impact. On the other hand, the placement of the LPG storage facility in Option 2 is sufficiently distanced from both the wetland and the tributary of the Kliprivier River. Additionally, much of the proposed expansion area is on already transformed areas which are located away from the identified wetland. Despite the fact that Option 1 (Alternative 1) is considered to be the preferred option from an air quality perspective, the anticipated impacts associated with Option 2 are considered to be insignificant and therefore Option 2 can still be regarded as the preferred option / proposal. It is also important to note that GDARD have provided comments on the DBAR which was submitted and have indicated that should development take place within 32m of the Kliprivier River, Fauna and Avifauna assessments / studies would need to be undertaken. Due to the fact that Option 1 will result in development taking place within 32m of the Kliprivier River, Twinsaver have subsequently decided not to consider Option 1 as a preferred location for the new Tissue Machine Building and will only be considering this option as a layout alternative (i.e. Alternative 1). The Fauna and Avifauna assessments / studies will thus no longer be required. Option 2 is therefore being considered / proposed as the only preferred location for the new Tissue Machine Building (i.e. the proposal) at this stage and Option 1 will be avoided. Option 1 has however not been excluded as a possible location for the new Tissue Machine Building as Twinsaver want to show that all possible alternatives have been assessed accordingly. As such, Option 2 will be regarded as the preferred alternative / proposal for the proposed development.

A thorough public participation process (PPP) was undertaken in June and July 2016 as part of the BA process. During this process on-going consultation took place with various key stakeholders and organs of state, which include provincial, district and local authorities, relevant government departments, parastatals, affected landowners, surrounding businesses and NGO's. It is however important to note that despite the fact that the review period for the DBAR has ended, the PPP has not yet been completed. After reviewing the DBAR which was submitted, GDARD provided some minor comments and recommendations which have been addressed in this report. In addition, Telkom SA SOC stated that they have no objections or issues with the proposed development while the Department of Agriculture, Forestry and Fisheries (DAFF) acknowledged receipt of the DBAR and provided a reference number for any queries and/or enquiries.

Through the findings of the BA process, it is the opinion of the Environmental Assessment Practitioner (EAP) that the proposed development should be allowed to proceed provided that the recommended mitigation measures are implemented, and provided the following conditions are adhered to:

- All mitigation measures recommended by the various specialists should be strictly implemented.
- Final EMPr should be approved by GDARD prior to construction.

It is SiVEST's opinion that the impacts associated with the proposed development are not significant enough to prevent the project from proceeding and that an Environmental Authorisation (EA) should be granted. In addition, the respective impact assessments revealed that the anticipated impacts of the proposed development are rated as being negative and low. SiVEST is therefore of the opinion that the impacts associated with the construction and operation phases can be mitigated to acceptable levels provided the recommended mitigation measures are implemented.

TWINSAYER GROUP (PTY) LTD

**BASIC ASSESSMENT (BA) FOR THE PROPOSED EXPANSION OF THE
TISSUE MANUFACTURING CAPACITY AT THE KLIPRIVIER OPERATIONS
BASE, GAUTENG PROVINCE**

DRAFT BASIC ASSESSMENT REPORT

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List of Abbreviations

BA	Basic Assessment
BAR	Basic Assessment Report
C&RR	Comments and Response Report
DBAR	Draft Basic Assessment Report
DEA	Department of Environmental Affairs
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EMM	Ekurhuleni Metropolitan Municipality
EMPr	Environmental Management Programme
FBAR	Final Basic Assessment Report
GDARD	Gauteng Department of Agriculture and Rural Development
GJ	Gigajoule
GIS	Geographic Information System
GN	Government Notice
HIA	Heritage Impact Assessment
I&AP	Interested and Affected Party
kWhr	Kilowatt Hour
PM	Particulate Matter
NEMA	National Environmental Management Act, 1998 (Act No.107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PPP	Public Participation Process
RSDF	Regional Spatial Development Framework
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SANRAL	South African National Roads Agency SOC Limited
SG	Surveyor General
SOC	State Owned Company
SWMP	Storm Water Management Plan
TPA	Tons Per Annum

TWINSAVER GROUP (PTY) LTD

BASIC ASSESSMENT (BA) FOR THE PROPOSED EXPANSION OF THE TISSUE MANUFACTURING CAPACITY AT THE KLIPRIVIER OPERATIONS BASE, GAUTENG PROVINCE

FINAL BASIC ASSESSMENT REPORT

1. INTRODUCTION

The Twinsaver Group (Pty) Ltd (hereafter referred to as “Twinsaver”) operates a Tissue Manufacturing facility located on Portions 8, 20 and 23 of the Farm Zwartkopjies no. 143 in Kliprivier, Gauteng Province. The current operation, known as the Kliprivier Tissue Mill, produces approximately 23 000 tons per annum (tpa) of tissue paper which is converted to various consumer products at the conversion facility located in Pretoria West. However, Twinsaver is now planning to increase its existing Tissue Manufacturing capacity at the Kliprivier Operations Base in Gauteng by installing additional tissue making capacity with a capacity of up to approximately 25 000 tpa. Two (2) possible locations for the Tissue Machine Building have been assessed, namely Option 1 and Option 2. In addition, this new building will be constructed in two (2) phases, with approximately 70% of this building being constructed now and the remaining 30% of it being constructed in the future.

SiVEST SA (Pty) Ltd (hereafter referred to as SiVEST) has subsequently been appointed as independent Environmental Assessment Practitioner (EAP) by Twinsaver to undertake a Basic Assessment (BA) with regards to the proposed expansion of the Tissue Manufacturing capacity at the Kliprivier Operations Base, Gauteng Province (hereafter referred to as the “proposed development”). The proposed development requires Environmental Authorisation (EA) from the Gauteng Department of Agriculture and Rural Development (GDARD) and will be carried out under the 2014 Environmental Impact Assessment Regulations which were promulgated in December 2014 (Government Gazette No. 38282 of the 4th of December 2014) embodied by the National Environmental Management Act (NEMA) (Act 107 of 1998) as amended. However, the national department will also be afforded an opportunity to review and comment on the project. In this instance, the national department that will be commenting on the project is the National Department of Environmental Affairs (DEA). In terms of these regulations, a Basic Assessment (BA) is required for the proposed development. All relevant legislation and guidelines will be consulted during the BA process and will be complied with at all times.

As previously mentioned, the proposed development entails the expansion of the tissue manufacturing capacity at Twinsaver’s existing Kliprivier Operations Base within the Gauteng province. The proposed development will be located on Portions 8, 20 and 23 of the Farm Zwartkopjies no. 143. Access roads to the proposed study area will not be required as the site is located in a fully developed area.

1.1 Project Background

It is understood that the Kliprivier Paper mill was established in 1896 and can be found on Portions 8, 20 and 23 the Farm Zwartkopjes No. 143 IR. The property is zoned as industrial and has been significantly transformed over the years. The majority of the existing plant is currently located within the 1:50 year flood line. This is mainly due to the age of the plant. The plant was initially constructed adjacent to the Kliprivier River due to the water requirements of tissue making. However, water is no longer extracted from the Kliprivier River for the tissue making process. Nonetheless, it must be noted that a pump station can be found within close proximity to this river but will only be used to draw water from the river in case of fire outbreaks (**Figure 2**). Additionally, a tributary of the Kliprivier River known as Kok's River also cuts across the property (**Figure 1**). According to the Surface Water Assessment, the Kok's River was deemed to be an artificially created channel. This artificial watercourse seems to have been a modification of a natural watercourse which once flowed through the proposed expansion study site to the Kliprivier River as a tributary.



Figure 1: A Tributary known as Kok's River which cuts across the property



Figure 2: Pump Station found within close proximity to the Kliprivier. Used to draw water from the river in case of fire outbreaks only.

The Kliprivier tissue making machine was installed in 1991 with a rated capacity of 24 000 MT (metric ton) per year production. Tissue making operations at the Kliprivier Mill currently produces approximately 23 000 tpa of Tissue Paper. The operation stores and processes Virgin Pulp and Recycled Fibre in the production of Tissue Paper (10 000 tpa of Virgin Pulp and 21 000 tpa of Recycled Fiber). Papermaking sludge (approximately 7500 air dry tpa) is produced as a waste stream and is sent to a brick manufacturer, namely Ocon, where sludge mixed together with clay is fired in the brick kilns.

Drying and heating energy is provided by Process Steam and Natural Gas. Approximately 52 000 tpa of Process Steam, which is produced by firing coal in a 10 t/hr (ton per hour) John Thompson 20 bar Boiler (**Figure 3**), and 59 500 GJ heat energy (derived from combusting natural gas) is consumed annually. In addition, electrical energy is used to derive machinery and annual consumption equates to approximately 33 650 000 kWhr (kilowatt hour). Natural gas, which is provided by Sasol, is also used to heat up air which in turn is used in the drying process. It must be noted that Yellow Tree were appointed by Twinsaver in order to undertake Emissions Compliance Testing for the existing Boiler at the Kliprivier Mill. The tests were conducted on the 22nd and 25th of May 2015, as well as the 11th and 17th of June 2015. Ultimately it was found that Particulate matter (PM) emissions from the Boiler at the Kliprivier Mill were within the guideline of 250 mg/Nm³. The Sulphur dioxide (SO₂) and Oxides of nitrogen (NO_x) emissions were also found to be below the guidelines of 2 800 mg/Nm³ and 1 100mg/Nm³ respectively. It was however recommended that Twinsaver conduct testing at the Kliprivier mill on an annual basis. A copy of the Boiler Emissions Report is provided in **Appendix I1**.



Figure 3: Existing John Thompson 20 bar Boiler at the Kliprivier Mill

Water is used as the main transport and cleaning medium in the Tissue Making process. The operation consumes approximately 107 000 m³ per annum of potable/drinkable water supplied by the Rand Water Board as well as 266 000 m³ per annum from various boreholes on the property. Approximately 80% of the water consumed by the operation is returned to the municipal system after being cleaned to municipal standards at the onsite Effluent Treatment Facility (**Figure 4**). The remaining 20% of the water is re-used by Twinsaver in the Tissue making process. A holding dam is used to store the treated effluent on site before it is discharged into the municipal system (**Figure 5**). Twinsaver have subsequently obtained an Industrial Effluent Discharge Permit in order to discharge industrial effluent into the Council's Sewer. A copy of the Industrial Effluent Discharge Permit has been provided in **Appendix I2**.



Figure 4: Onsite Effluent Treatment Facility at the Kliprivier Mill



Figure 5: Holding dam used to store the treated effluent on site before it is discharged into the municipal system

Storm water drainage systems have been installed around various buildings/structures at the Kliprivier Mill (**Figure 6**). These drainage systems have been designed to collect storm water around the buildings and discharge it into the Kok's River via several storm water outlets (**Figure 7**). All storm water and run-off from the

site therefore drains into the tributary known as Kok's River. None of this storm water run-off is cleaned and/or treated before being discharged into the tributary. As a partial fulfilment of the Storm water Discharge Authorisation, Twinsaver were required to develop a Storm water Management Plan (SWMP). This was done in order to obtain authorisation to discharge storm water run-off on the site into the nearby Kok's River. SiVEST were informed that an application for authorisation to discharge storm water run-off into the Kok's River was submitted to the Department of Water and Sanitation (DWS). Twinsaver are however still waiting for this response.

A copy of the Storm Water Management Plan has been provided in **Appendix I3**.



Figure 6: Storm water drainage systems found around various buildings/structures at the Kliprivier Mill



Figure 7: Storm water outlets directing storm water run-off into the Kok's River

In addition to the above-mentioned Industrial Effluent Discharge Permit and Storm Water Management Plan (SWMP), it is understood that Twinsaver have obtained the following, authorisations, license or permits for the operation of the Kliprivier Mill:

- i. Boiler Stack Air Emission Approval for existing John Thompson Boiler (attached as **Appendix I4**); and
- ii. New Flammable Liquid License (attached as **Appendix I5**).

As previously mentioned, Twinsaver is proposing to expand its Tissue manufacturing capacity at its existing Kliprivier Operations Base in Gauteng. Ultimately, Twinsaver intends to improve its Tissue making capacity by approximately 20 000 tpa (100 tons per day) by installing a new Tissue Making Machine at the Kliprivier site. It should be noted that two (2) possible locations for a new Tissue Machine Building have been assessed by Twinsaver, namely Option 1 and Option 2. In addition, the new Tissue Machine Building will be constructed in two (2) phases, with approximately 70% of this building being constructed now and the remaining 30% of it being constructed in the future. The proposed development will therefore consist of the following main activities:

Option 1 - New Tissue Machine Building constructed on the Eastern side of the existing Pm3 Building

Phase 1:

- The Reel Storage Warehouse adjacent to the Pm3 building (eastern side) will be demolished to make way for the new Industrial Building. The Reel Storage Warehouse has a footprint of approximately 1680 m².

- Construct a new Industrial Building with a footprint of approximately 3522 m² to house an additional Tissue Machine / Toilet Rewinding Machine.
- Construct a Liquefied Petroleum Gas (LPG) Bulk Storage Facility. This facility will have a capacity of approximately 45 m³ and will cover an extent of 200 m².
- Extend the existing Boiler House by approximately 178 m² in order to accommodate the installation of an additional 10t/hr 20 bar Boiler.
- Upgrade the effluent treatment facility on the site. This will include the construction of an effluent treatment clarifier to treat effluent to municipal specifications. The effluent treatment clarifier will be included in the new Industrial Building and will have a capacity of 16 – 20 m³ / hr. The treated effluent will be sent to the municipal water works via existing infrastructure.
- Site Service like internal roads and storm water systems will be upgraded accordingly. This is expected to cover an extent of approximately 4178 m².

Phase 2:

- Construct the remaining 30% of the new Industrial Building which is to house the Toilet Rewinding Machine. The new Industrial Building will have a footprint of approximately 3522 m² when completed.
- The upgrade of the site service such as internal roads and storm water systems will be completed accordingly. This is expected to cover an extent of approximately 4178 m² when completed.

Option 2 – New Tissue Machine Building constructed on the Western side of the existing Pm3 Building

Phase 1:

- The Weighbridge and Offices, which have a footprint of approximately 169 m², will be demolished in order to make room for the new Industrial Building.
- Construct a new Industrial Building with a footprint of approximately 3522 m² in order to house an additional Tissue Machine / Toilet Rewinding Machine.
- Construct a Liquefied Petroleum Gas (LPG) Bulk Storage Facility. This facility will have a capacity of approximately 45 m³ and will cover an extent of 200 m².
- Extend the existing Boiler House by approximately 178 m² in order to accommodate the installation of an additional 10t/hr 20 bar Boiler.
- Upgrade the effluent treatment facility on the site. This will include the construction of an effluent treatment clarifier to treat effluent to municipal specifications. The effluent treatment clarifier will be included in the new Industrial Building and will have a capacity of 16 – 20 m³ / hr. The treated effluent will be sent to the municipal water works via existing infrastructure.
- Relocate the Weighbridge and build a new Office. This is expected to cover an area of approximately 202 m².
- Site Service like internal roads and storm water systems will be upgraded accordingly. This is expected to cover an extent of approximately 12 305 m².

Phase 2:

- Construct the remaining 30% of the new Industrial Building which is to house the Toilet Rewinding Machine. The new Industrial Building will have a footprint of approximately 3522 m² when completed.

- The upgrade of the site service such as internal roads and storm water systems will be completed accordingly. This is expected to cover an extent of approximately 12 305 m² when completed.

It is expected that the consumption of utilities will increase as follows:

- LPG consumption will increase by approximately 85 000 GJ per annum. This will be supplied via a LPG facility (installed and operated by the selected Gas Supplier) located on site.
- Steam consumption will increase by approximately 40 000 tpa.
- Potable consumption water by 135 000 m³ per annum.
- Effluent Discharge by 108 000 m³ per annum
- Sludge discharge will increase by approximately 550 air dry tpa.
- Electrical consumption by approximately 30 000 000 kWhr per annum.

Conceptual illustrations for Option 1 (Alternative 1) and Option 2 (Proposal / Preferred Alternative) of the proposed expansion of the tissue manufacturing capacity at the Kliprivier Operations Base is displayed in **Figure 8** and **Figure 9** below.

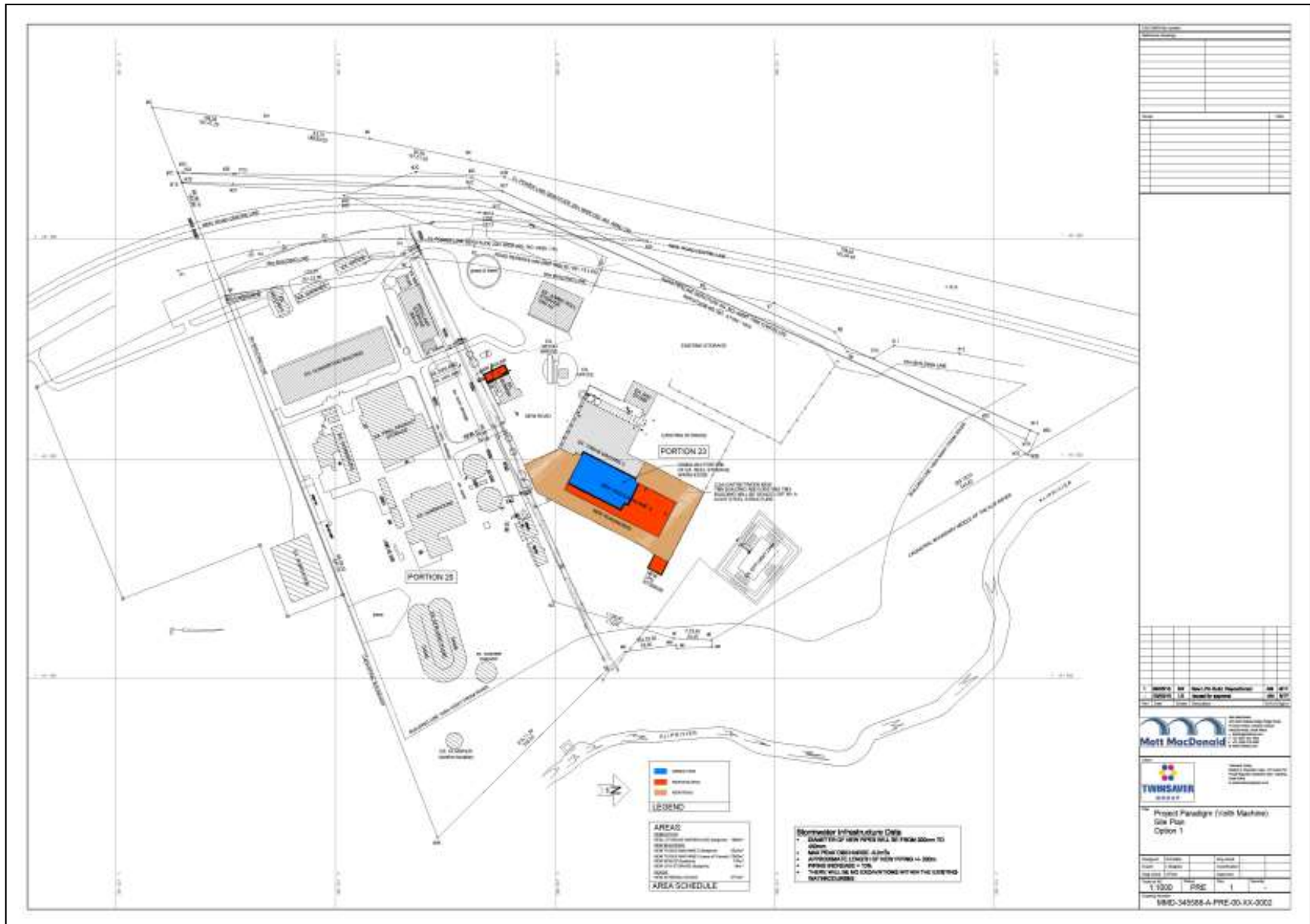


Figure 8: Conceptual illustration for Option 1 of the proposed expansion of the tissue manufacturing capacity at the Kliprivier Operations Base

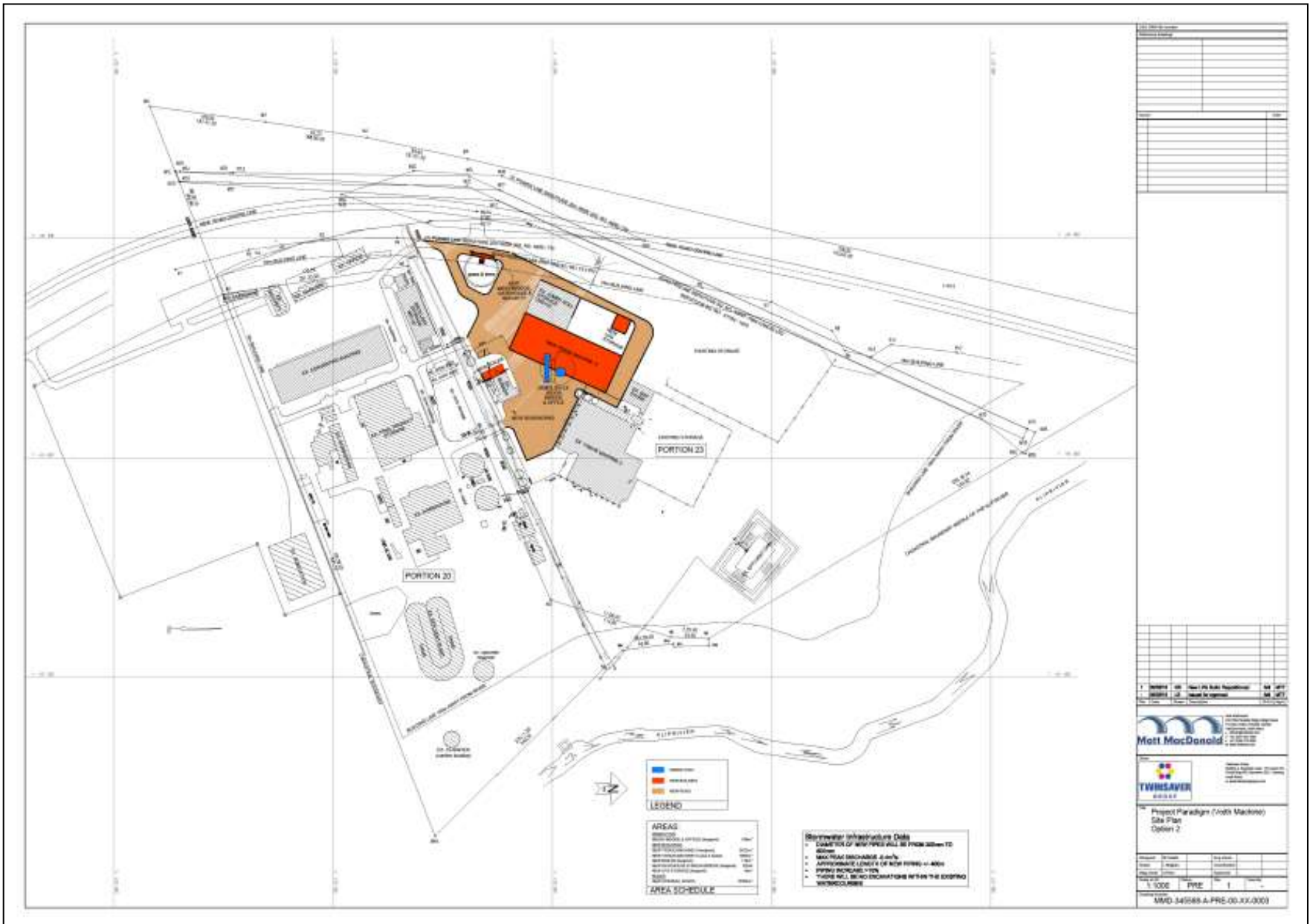


Figure 9: Conceptual illustration for Option 2 of the proposed expansion of the tissue manufacturing capacity at the Kliprivier Operations Base

It is however important to note that GDARD have provided comments on the Draft Basic Assessment Report (DBAR) which was submitted and have indicated that should development take place within 32m of the Kliprivier River, Fauna and Avifauna assessments / studies would need to be undertaken. However, should the applicant intend not to undertake these assessments / studies, the layout plans must be amended. Since Option 1 would result in development taking place within 32m of the Kliprivier River, the above-mentioned assessments / studies will need to be undertaken should this option be considered / proposed as the preferred location for the new Tissue Machine Operation. Therefore, Twinsaver will not be considering Option 1 as a preferred location for the new Tissue Machine Building and will only be considering this option as a layout alternative (i.e. Alternative 1). As a result, the Fauna and Avifauna assessments / studies will no longer be required. Option 2 is therefore being considered / proposed as the only preferred location for the new Tissue Machine Building (i.e. the proposal) at this stage. It must be noted that Option 1 has not been excluded as a possible location for the new Tissue Machine Building as Twinsaver want to show that all possible alternatives have been assessed accordingly. Despite that fact that two (2) possible locations / alternatives for the new Tissue Machine Building have been assessed, only Option 2 is being considered / proposed as a possible location for the new Tissue Machine Building and Option 1 will be avoided.

It should also be noted that Option 2 was chosen as the preferred location for the new Tissue Machine Building by Twinsaver as it will be located closer to the point of supply for the main raw material (i.e. the pulp stock) used in the operations at the Kliprivier site and will ensure that this building will be located further from the Kliprivier River, the Kliprivier River 100 year flood line and the watercourse that runs through the mill site (i.e. the Kok's River). The construction activities associated with Option 2 are also expected to be less disruptive to the existing operations and it will be possible to add another tissue machine alongside in the future if Twinsaver wish to do so.

2. BRIEF DESCRIPTION OF THE RECEIVING ENVIRONMENT

The study site is located on Portions 8, 20 and 23 of the Farm Zwartkopjies no. 142, at Kliprivier in the south of Johannesburg, Gauteng Province (GPS Co-ordinates: 26° 24,587' S; 28° 04,818' E). In addition, the proposed development can be found within the Ekurhuleni Metropolitan Municipality. The study site is accessible via the Old Kliprivier Road which is adjacent to the R550. It must also be noted that the study site is located adjacent to the Kliprivier Country Club (Golf Course).

As previously mentioned, the existing Kliprivier Paper Mill was established in 1896. The above-mentioned property is zoned as industrial and has been significantly transformed over the years. In addition, a river known as the Kliprivier River can be found adjacent to the property in question. A tributary of the Kliprivier River known as Kok's River also cuts across the property. According to the Surface Water Assessment, the Kok's River was deemed to be an artificially created channel. In addition, this artificial watercourse seems to have been a modification of a natural watercourse which once flowed through the proposed expansion study site to the Kliprivier River as a tributary. A 27m buffer was subsequently applied to this tributary. The majority of the existing plant is currently located within the 1:50 year floodline. This is chiefly due to the age of the plant. The plant was

initially constructed adjacent to the Kliprivier River due to the water requirements of paper making. Water is however no longer extracted from the river for the process.

A Site Locality Map for the proposed expansion of the tissue manufacturing capacity at the Kliprivier Operations Base is provided in **Figure 10** below.

The Surface Water Assessment also revealed that one (1) channelled valley bottom wetland can be found within the Kliprivier study site. A buffer zone of 15m was subsequently applied to the identified wetland. The wetland is classified as an Orange Data List area for plant habitat, Red Data List area for mammal habitat and primary vegetation at a desktop level however. The Kliprivier River (of which the wetland forms of component) therefore functions as an ecological corridor where these features have been identified adjacent, up- and downstream of the proposed expansion study site. In addition, this wetland was assessed to be categorised with an overall present ecological status (PES) of C – Moderately modified. Overall, the ecological importance and sensitivity class (EISC) for the wetland was assessed to be a category C – Moderate ecological importance and sensitivity. In terms of biodiversity sensitivities, Critical Biodiversity Areas (CBAs) were identified to the east of the Kliprivier study site. This CBA is sensitive in terms of Orange List plant habitat, Red Data List mammal habitat and primary vegetation. Lastly, the river buffer associated with the tributary of the Kliprivier River was deemed to be an Ecological Support Area (ESA).

Site Layout Maps for Option1 and Option 2 indicating the sensitive areas identified within the existing Twinsaver Kliprivier Paper Mill site have been provided in Figure 11 and Figure 12 below.

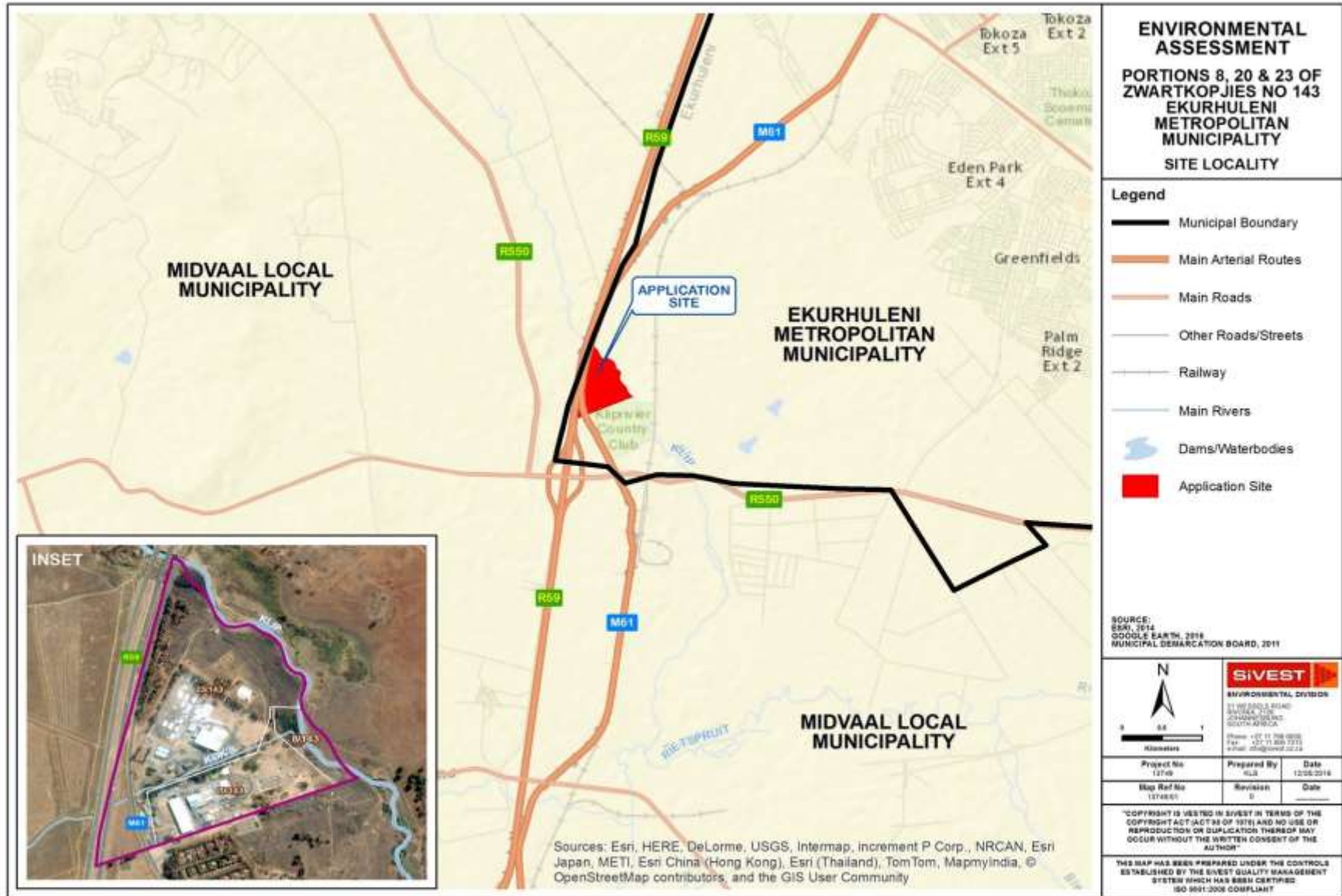


Figure 10: Site Locality Map



Figure 11: Site Layout Map for Option 1 indicating the sensitive areas identified within the existing Twinsaver Kliprivier Paper Mill site



Figure 12: Site Layout Map for Option 2 indicating the sensitive areas identified within the existing Twinsaver Kliprivier Paper Mill site

3. EXPERTISE OF ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Table 1: Environmental Consultants

Name and Organisation	Role
Kelly Tucker– SiVEST	Project Manager
Stephan Jacobs–SiVEST	Project Leader / Environmental Consultant
Kerry Schwartz –SiVEST	GIS Specialist
Hlengiwe Ntuli– SiVEST	Public Participation
Sophia Valsamakis – Rayten Engineering Solutions	Air Quality
Shaun Taylor – SiVEST	Surface Water and Wetlands
Stephan Gaigher – G&A Heritage Consultants	Heritage

4. AUTHORITY CONSULTATION

The Gauteng Department of Agriculture and Rural Development (GDARD) is the competent authority for this BA application. The following consultation has subsequently taken place with GDARD:

- A BA application was submitted to GDARD on the 24th of May 2016. A response was subsequently received from GDRAD on the 31st of May 2016, where it was stated that the listed activities had to be amended and the application re-submitted. A copy of the original application and the response from GDARD is included in **Appendix I6**.
- The amended BA application was submitted to GDARD on the 31st of May 2016. The amended BA application was subsequently also acknowledged on the 31st of May 2016 and the following reference number was allocated for the project: **Gaut: 002/16-17/E0047**. A copy of the amended BA application and acknowledgement thereof is included in **Appendix I7**.
- A shapefile of the application site was sent to GDARD’s biodiversity information service (GDACE) on the 1st of June 2016 in order for GDARD to determine whether a biodiversity assessment is required and, if so, which additional specialist studies are required.
- A Draft Basic Assessment Report (DBAR) was submitted to GDARD on the 17th of June 2016 and acknowledgment of this report was subsequently received on the 22nd of June 2016. Comments on the DBAR were received from GDARD on the 14th of July 2016. A copy of the acknowledgement letter received from GDARD is included in **Appendix I10**
- An amended application form was submitted to GDARD again on the 10th of August 2016 with the submission of the FBAR. It must be noted that this was the second amended application form which was submitted as part of the Basic Assessment (BA) process for the proposed development. The amended application form was submitted in order to include activities relating to sensitive areas (Critical Biodiversity Areas, Ecologic Support Areas etc.). A copy of the amended application form is included in **Appendix I11**.

The following list summarises other authorities informed as part of the BA Process:

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National / Provincial Authorities

- National Department of Water & Sanitation (DWS)
- National Department of Agriculture, Forestry & Fisheries (DAFF)
- National Department of Mineral Resources (DMR)

Local Authorities

- Ekurhuleni Metropolitan Municipality (EMM).

Parastatals / Organs of State

- South African National Roads Agency Limited (SANRAL)
- Telkom SA (Ltd)
- Eskom
- South African Heritage Resource Agency (SAHRA)
- Provincial Heritage Resource Authority – Gauteng (PHRA–G)
- SA Civil Aviation Authority (SA CAA)
- Agri SA
- Air Traffic Navigation Service (ATNS)
- South African Police Service (SAPS)

NGO's / Other Entities

- Birdlife South Africa
- Earthlife Africa Johannesburg
- Endangered Wildlife Trust (EWT)
- SENTECH
- Kliprivier Country Club
- Heineken
- Wildlife and Environment Society of South Africa (WESSA)

5. BASIC ASSESSMENT REPORT STRUCTURE

- **Section A** describes the activity and technical project components, including the proposed alternatives, location and physical size of the activity. This section also provides an activity motivation by describing the need and desirability for the proposed project. Section A expands on the legal ramifications applicable to the project and describes relevant development strategies and guidelines. Finally the section explains the infrastructural requirements of the proposed project such as waste, effluent, emission water use and energy efficiency.
- **Section B** provides a description of the site and region in which the proposed development is intended to be located. Although the chapter provides a broad overview of the region, it is also specific to the application.

- **Section C** describes the Public Participation Process (PPP) undertaken during the Basic Assessment (BA) and tables issues and concerns raised by Interested and Affected Parties (I&APs).
- **Section D** identifies the resource use and process details associated with the proposed development. These include details pertaining to Waste, Effluent and Emission Management, Water Use, Power Supply and Energy Efficiency.
- **Section E** identifies potential issues associated with the proposed project by outlining the impacts that may result from the planning, design, construction, operational, decommissioning and closure phases. Section D also provides a description of the mitigation and management measures for each potential impact and outlines the recommendations of the Environmental Assessment Practitioner (EAP). The section concludes with an Environmental Impact Statement which summarises the impacts that the proposed development may have on the environment.
- **Section F** outlines the relevant appendices which must be attached as part of the Draft Basic Assessment Report (DBAR).

6. ASSUMPTIONS AND LIMITATIONS

The following assumptions and limitations have been taken into account when compiling this DBAR:

- It is assumed that all technical information provided by Twinsaver is technically acceptable and accurate;
- The proposed development is still in the planning stages and therefore some of the project specific technical details are not available;
- It was assumed that the addition/construction of the new Effluent Treatment Clarifier would not be considered to be a new development but would rather form part of the upgrade / expansion of the existing effluent treatment facilities on site;
- The following assumptions, uncertainties and gaps in knowledge were encountered by various specialist:
 - **Heritage**
 - Field investigations were performed on foot and by vehicle where access was readily available.
 - Sites were evaluated by means of a description of the cultural landscape, direct observations and analysis of written sources and available databases.
 - It was assumed that the site layout provided was accurate.
 - It was assumed that the Public Participation Process (PPP) performed as part of the Basic Assessment (BA) process was sufficiently encompassing not to be repeated in the Heritage Assessment Phase.
 - It is assumed that the South African Heritage Resources Information System (SAHRIS) database locations are correct.
 - It is assumed that the paleontological information collected for the project is comprehensive.
 - It is assumed that the social impact assessment and public participation process of the Basic Assessment will result in the identification of any intangible sites of heritage potential.

- The site exists in a highly modified state and the asphalt covered surface of the development area makes it impossible to determine whether there would be sub--surface sites present here.
- **Surface Water**
 - The Surface Water Assessment has focused on the identification, delineation and functional assessment of wetlands that are found within the proposed development site. A full delineation and mapping of all wetlands habitats in the wider area has therefore not been undertaken.
 - Additionally, groundwater, hydrology, aquatic studies of fish, invertebrates, amphibians etc. have also not been included in this study.
 - Much of the study area is already transformed for the existing paper mill. As a result, soils have been disturbed in most areas making it difficult for assessment the soil wetness and soil form indicators. Where these indicators were absent, professional judgement was used to inform the outer boundary of the wetland.
- **Air Quality**
 - Limited data were available on the SAAQIS for 8-houly average carbon monoxide concentrations.
 - Dust Fallout monitoring results for the project site were not available, therefore the baseline dust fallout rates for the study site could not be determined.
 - Mitigation measures were not modelled in the Air Quality study.
 - The recommendations provided are only briefly outlined within a general context and are not compulsory.

(For official use only)

NEAS Reference Number:						
File Reference Number:						
Application Number:						
Date Received:						

If this BAR has not been submitted within 90 days of receipt of the application by the competent authority and permission was not requested to submit within 140 days, please indicate the reasons for not submitting within time frame.



Is a closure plan applicable for this application and has it been included in this report?

YES/

if not, state reasons for not including the closure plan.

A closure Plan for the decommissioning / demolishing of the existing Weighbridge and Office has been included in **Appendix I12**.

Has a draft report for this application been submitted to a competent authority and all State Departments administering a law relating to a matter likely to be affected as a result of this activity?

YES/

There is only one (1) State / Government Department which must be directly involved in the proposed development, namely the Gauteng Department of Agriculture and Rural Development (GDARD). A Draft Basic Assessment Report (DBAR) was submitted to the Gauteng Department of Agriculture and Rural Development (GDARD) on the 17th of June 2016. In addition, a copy of the DBAR was also sent to the local authority, namely the Ekurhuleni Metropolitan Municipality.

Is a list of the State Departments referred to above attached to this report including their full contact details and contact person?

NO/

If no, state reasons for not attaching the list.

As mentioned above, there is only one (1) State / Government Department which must be directly involved in the proposed development, namely GDARD. A list of all the State Departments (including contact person and full contact details) which received a copy of the DBAR has however been included in **Appendix E9**. It should also be noted that copies of the Final Basic Assessment Report (FBAR) will also be submitted to the affected local authority, namely the Ekurhuleni Metropolitan Municipality.

Have State Departments including the competent authority commented?

YES/

At this stage, only GDARD (i.e. the Competent Authority), Telkom SA and the Air Traffic Navigation Services (ATNS) have provided comments with regards to the Draft Basic Assessment Report (DBAR) which was submitted. In addition, The Department of Agriculture, Forestry & Fisheries (DAFF) acknowledged the receipt of the DBAR and provided a reference number for any queries and/or enquiries.

All comments received from State Departments, as well as the Competent Authority (i.e. GDARD) have been included in **Appendix E7**.

If no, why?



SECTION A: ACTIVITY INFORMATION

1. PROPOSAL OR DEVELOPMENT DESCRIPTION

Project title (must be the same name as per application form):

Basic Assessment (BA) for the Proposed Expansion of the existing Tissue Manufacturing Capacity at the Kliprivier Operations Base, Gauteng Province.

Select the appropriate box

The application is for an upgrade of an existing development

The application is for a new development

Other, specify

Does the activity also require any authorisation other than NEMA EIA authorisation?

YES/

If yes, describe the legislation and the Competent Authority administering such legislation

According to the Surface Water Assessment, a Water Use License Application (WULA) will need to be applied for considering activities that will take place in or in close proximity to the channelled valley bottom wetland as well as the tributary of the Kliprivier River (i.e. the Kok's River). It is however important to note that a WULA can only be undertaken once Environmental Authorisation (EA) has been granted. The Competent Authority who is responsible for administering the Water Use Licence (WUL) is the Department of Water and Sanitation (DWS). The WULA will be done in consultation with the DWS prior to undertaking any construction activities related to the proposed expansion. Additional potential applicable water uses will also be confirmed when consultation is undertaken.

If yes, have you applied for the authorisation(s)?

If yes, have you received approval(s)? (attach in appropriate appendix)

NO/

2. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations:

Title of legislation, policy or guideline:	Administering authority:	Promulgation Date:
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	National & Provincial	27 November 1998
National Environmental Management Act No. 107 of 1998 as amended.	Provincial	27 November 1998
National Environmental Management Act No. 107 of 1998 as amended.	Provincial	4 December 2014
National Environmental Management: Air Quality Act No. 39 of 2004	Provincial	11 September 2005
National Environmental Management: Air Quality Amendment Act No. 20 of 2014	Provincial	19 May 2014
National Water Act No. 36 of 1998	Provincial	26 August 1998
National Water Amendment Act No. 27 of 2014	Provincial	2 June 2014
National Heritage Resources Act No. 25 of 1999	Provincial	28 April 1999
National Heritage Council Act No. 11 of 1999	Provincial	23 April 1999

Description of compliance with the relevant legislation, policy or guideline:

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Legislation, policy or guideline	Description of compliance
National Environmental Management Act No. 107 of 1998 as amended.	The activities associated with the proposed development have been investigated in order to determine whether they will trigger any of the Listing Notices in the 2014 Environmental Impact Assessment (EIA) Regulations and therefore trigger the need for an Environmental Authorisation (EA). In addition, the investigation is undertaken in order to determine whether the proposed development will exceed certain thresholds and thus trigger certain activities which may result in the need for a Basic Assessment (BA) process or EIA to be undertaken. After investigating the activities associated with the proposed development, it was deemed that a BA process is required.
National Environmental Management: Air Quality Amendment Act No. 20 of 2014	The proposed development includes activities which will result in the release of emissions into the atmosphere. The release of emissions into the atmosphere is controlled by the Air Quality Act. An Air Quality Assessment was conducted in order to determine whether the proposed development will trigger any air quality related activities which may require authorisation or licenses, permits etc. from an air quality perspective. It was however deemed that the emissions associated with the proposed development will remain under the thresholds in the listed activities of the Air Quality Act and therefore no Atmospheric Emission License is required.
National Water Amendment Act No. 27 of 2014	According to the Surface Water Assessment, one (1) channelled valley bottom wetland and a tributary of the Kliprivier River (i.e. the Kok's River) can be found within the study site. In addition, the Kliprivier River can also be found adjacent to the existing Kliprivier site (approx. 15m to the east of the property boundary). Development is expected to take place in or in close proximity to the channelled valley bottom wetland as well as the tributary of the Kliprivier River and therefore a Water Use License Application (WULA) will need to be applied. It should however be noted that the tributary of the Kliprivier River was found to be an artificially created channel. This artificial watercourse seems to have been a modification of a natural watercourse which once flowed through the proposed expansion study site to the Kliprivier River as a tributary.
National Heritage Resources Act No. 25 of 1999	The study site for the proposed development has been investigated from a Heritage point of view in order to determine whether any sites of heritage significance / importance can be found on site and whether the proposed development will have any impact on the identified heritage sites. This

	<p>investigation was also undertaken in order to determine whether the proposed development will trigger any heritage related legislation and whether this will result in the need for any permits, licenses etc. or the need for an EIA level study to be undertaken. In addition, the Heritage Assessment Report was registered with the South African Heritage Resources Agency (SAHRA) in order for them to provide comments and recommendations with regards to the proposed development and the impacts on heritage sites. The Heritage Assessment has however subsequently revealed that the proposed development will not impact on any sites of heritage significance and therefore an EIA level assessment / study is not required.</p>
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3. ALTERNATIVES

Describe the proposal and alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished. The determination of whether the site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment.

The no-go option must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. **Do not include the no go option into the alternative table below.**

Note: After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Please describe the process followed to reach (decide on) the list of alternatives below

Two (2) possible locations for the new proposed Tissue Machine Building were originally being considered / proposed by Twinsaver, namely Option 1 and Option 2. These locations / alternatives were chosen based on the following factors:

- Distance from the point of supply of the main raw material;
- Distance from the watercourses;
- Distance from the 100 year flood line;
- Whether the construction activities at these locations will disrupt existing operations; and
- Whether it will be possible to add another tissue machine alongside these locations in the future.

It should however be noted that based on the comments provided by GDARD on the DBAR which was submitted, Twinsaver are now only considering Option 2 as the preferred location for the new Tissue Machine Building. This is due to the fact that Option 1 will result in development / construction taking place within 32m of the Kliprivier River. According to the comments provided by GDARD, should development take place within 32m of the Kliprivier River, Fauna and Avifauna assessments / studies will need to be undertaken. However, should the applicant intend not to undertake these assessments / studies, the layout plans must be amended. Therefore, in order to avoid impacting on the Kliprivier River, Twinsaver will not be considering Option 1 as a preferred location for the new Tissue Machine Building and will only be considering this option as a layout alternative (i.e. Alternative 1). As a result, the Fauna and Avifauna assessments / studies will no longer be required. Option 2 is therefore being considered / proposed as the only preferred location for the new Tissue Machine Building (i.e. the proposal) at this stage. It must be noted that Option 1 has not been excluded as a possible location for the new Tissue Machine Building as Twinsaver want to show that all possible alternatives have been assessed accordingly. Despite that fact that

two (2) possible locations / alternatives for the new Tissue Machine Building have been assessed, only Option 2 is being considered / proposed as a possible location for the new Tissue Machine Building and Option 1 will be avoided.

In addition, Option 2 was chosen by Twinsaver as the preferred location for the new proposed Tissue Machine Building due to the fact that this option is situated closer to the point of supply of main raw material, is further from the Kliprivier River 100 year flood line, is further from the watercourse that traverses the mill site (i.e. the Kok's River), is further from the Kliprivier River which is situated adjacent to the site, is situated further from the unchannelled valley bottom wetland located within the site, construction activities at this location will be less disruptive to existing operations and it will be possible to add another tissue machine alongside in the future.

Provide a description of the alternatives considered

No.	Alternative type, either alternative: site on property, properties, activity, design, technology, energy, operational or other (provide details of "other")	Description
1	Proposal: Option 2	Option 2 of the proposed development is being considered /proposed as the proposal / preferred alternative. Option 2 will include the construction of a new Industrial Building to house an additional Tissue Making Machine, the construction of a Liquefied Gas Petroleum (LPG) Bulk Storage Facility and the extension of the existing Boiler House in order to include an additional boiler. In addition, the existing Weighbridge and Office will also be decommissioned / demolished in order to construct a new Weighbridge and Office in a different location.
2	Alternative 1 – Location Alternative: Option 1	<p>Since Option 1 would result in development taking place within 32m of the Kliprivier River, GDARD have stated that Fauna and Avifauna assessments / studies will need to be undertaken should this option be considered / proposed as the preferred location for the new Tissue Machine Building. Therefore, in order to avoid impacting on the Kliprivier River, Twinsaver will not be considering Option 1 as a preferred location for the new Tissue Machine Building and will only be considering this option as a layout alternative (i.e. Alternative 1). As a result, the Fauna and Avifauna assessments / studies will no longer be required. Option 1 of the proposed development is thus only being considered as an alternative location for the new Tissue Machine Building in order to show that all possible alternatives have been assessed accordingly and will be avoided.</p> <p>Similarly to the proposal / preferred alternative, Option 1 will also include the construction of a new Industrial Building to house an additional Tissue Making Machine, the construction of a Liquefied Gas Petroleum (LPG) Bulk Storage Facility and the extension of the existing Boiler House in order to include an additional boiler. However, a different</p>

		location for the new Industrial Building is being proposed for this option (Alternative 1). In addition, the existing Weighbridge and Office will not be decommissioned / demolished as part of this option and no new Weighbridge and Office will be constructed.
--	--	--

In the event that no alternative(s) has/have been provided, a motivation must be included in the table below.

Two (2) possible locations for the new Tissue Machine Building were assessed by Twinsaver, namely Option 1 and Option 2. However, as a result of comments provided by GDARD on the DBAR which was submitted, Twinsaver are only considering Option 2 as the preferred location for the new Tissue Machine Building. This is due to the fact that Option 1 will result in development / construction taking place within 32m of the Kliprivier River. According to the comments provided by GDARD, should development take place within 32m of the Kliprivier River, Fauna and Avifauna assessments / studies will need to be undertaken. However, should the applicant intend not to undertake these assessments / studies, the layout plan must be amended. Therefore, in order to avoid impacting on the Kliprivier River, Twinsaver will not be considering Option 1 as a preferred location for the new Tissue Machine Building and will only be considering this option as a layout alternative (i.e. Alternative 1). As a result, the Fauna and Avifauna assessments / studies will no longer be required. Option 2 is therefore being considered / proposed as the preferred location for the new Tissue Machine Building (i.e. the proposal) and only this option is being considered by Twinsaver at this stage. It must be noted that Option 1 has not been excluded as a possible location for the new Tissue Machine Building as Twinsaver want to show that all possible alternatives have been assessed accordingly. Despite that fact that two (2) possible locations / alternatives for the new Tissue Machine Building have been assessed, only Option 2 is being considered / proposed as a possible location for the new Tissue Machine Building and Option 1 will be avoided.

In addition, Option 2 has been selected as the preferred location for the new Tissue Machine Building as this option is situated closer to the point of supply of main raw material, is further from the Kliprivier River 100 year flood line, is further from the watercourse that traverses the mill site (i.e. the Kok's River), is further from the Kliprivier River which is situated adjacent to the mill site, is situated further from the unchannelled valley bottom wetland located within the site, construction activities at this location will be less disruptive to existing operations and it will be possible to add another tissue machine alongside in the future.

4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the total physical size (footprint) of the proposal as well as alternatives. Footprints are to include all new infrastructure (roads, services etc), impermeable surfaces and landscaped areas:

Proposed activity (**Total environmental (landscaping, parking, etc.) and the building footprint**): **Option 2**

Alternatives:

Alternative 1 (if any): **Option 1**

Alternative 2 (if any)

Size of the activity:

23 285 m²

17 232 m²

Ha/ m²

or, for linear activities:

Proposed activity

Alternatives:

Alternative 1 (if any)

Alternative 2 (if any)

Length of the activity:

m/km

Indicate the size of the site(s) or servitudes (within which the above footprints will occur):

Proposed activity: **Option 2**

Size of the site/servitude:

339 408 m²

Alternatives:

Alternative 1 (if any): **Option 1**

339 408 m²

Alternative 2 (if any)

Ha/m²

5. SITE ACCESS

Proposal: **Option 2**

Does ready access to the site exist, or is access directly from an existing road?

YES/

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

N/A - No access roads are being proposed / planned as the site is located in a fully developed area

Include the position of the access road on the site plan (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

Alternative 1: **Option 1**

Does ready access to the site exist, or is access directly from an existing road?

YES/

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

N/A - No access roads are being proposed / planned as the site is located in a fully developed area

Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

Alternative 2

Does ready access to the site exist, or is access directly from an existing road?

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

PLEASE NOTE: Points 6 to 8 of Section A must be duplicated where relevant for alternatives

Section A 6-8 has been duplicated

0

Number of times

(only complete when applicable)

6. LAYOUT OR ROUTE PLAN

A detailed site or route (for linear activities) plan(s) must be prepared for each alternative site or alternative activity. It must be attached to this document. The site or route plans must indicate the following:

- the layout plan is printed in colour and is overlaid with a sensitivity map (if applicable);
- layout plan is of acceptable paper size and scale, e.g.
 - A4 size for activities with development footprint of 10sqm to 5 hectares;
 - A3 size for activities with development footprint of > 5 hectares to 20 hectares;
 - A2 size for activities with development footprint of >20 hectares to 50 hectares);
 - A1 size for activities with development footprint of >50 hectares);
- The following should serve as a guide for scale issues on the layout plan:
 - A0 = 1: 500
 - A1 = 1: 1000
 - A2 = 1: 2000
 - A3 = 1: 4000

- A4 = 1: 8000 ($\pm 10\ 000$)
- shapefiles of the activity must be included in the electronic submission on the CD's;
- the property boundaries and Surveyor General numbers of all the properties within 50m of the site;
- the exact position of each element of the activity as well as any other structures on the site;
- the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, sewage pipelines, septic tanks, storm water infrastructure;
- servitudes indicating the purpose of the servitude;
- sensitive environmental elements on and within 100m of the site or sites (including the relevant buffers as prescribed by the competent authority) including (but not limited thereto):
 - Rivers and wetlands;
 - the 1:100 and 1:50 year flood line;
 - ridges;
 - cultural and historical features;
 - areas with indigenous vegetation (even if it is degraded or infested with alien species);
- Where a watercourse is located on the site at least one cross section of the water course must be included (to allow the position of the relevant buffer from the bank to be clearly indicated)

FOR LOCALITY MAP (NOTE THIS IS ALSO INCLUDED IN THE APPLICATION FORM REQUIREMENTS)

- the scale of locality map must be at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map;
- the locality map and all other maps must be in colour;
- locality map must show property boundaries and numbers within 100m of the site, and for poultry and/or piggery, locality map must show properties within 500m and prevailing or predominant wind direction;
- for gentle slopes the 1m contour intervals must be indicated on the map and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the map;
- areas with indigenous vegetation (even if it is degraded or infested with alien species);
- locality map must show exact position of development site or sites;
- locality map showing and identifying (if possible) public and access roads; and
- the current land use as well as the land use zoning of each of the properties adjoining the site or sites.

The following maps have been provided as Appendix A:

- Site Plans for Option 1 (Alternative 1) and Option 2 (Proposal / Preferred Location);
- Site Layout Maps for Option 1 (alternative 1) and Option 2 (Proposal / Preferred Location) indicating the environmentally sensitive areas identified on site as well as their associated buffers;
- A Site Locality Map; and
- A Regional Context Map.

7. SITE PHOTOGRAPHS

Colour photographs from the center of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under the appropriate Appendix. It should be supplemented with additional photographs of relevant features on the site, where applicable.

The following Site Photographs have been provided as Appendix B:

- Site Photographs from the centre of the new Tissue Machine Building development area for Option 1 (Alternative 1) and Option 2 (Proposal / Preferred Location); and
- Site photographs from the centre of the existing Twinsaver Kliprivier site.

8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity to be attached in the appropriate Appendix.

Facility Illustrations for Option 1 (Alternative 1) and Option 2 (Proposal / Preferred Location) of the proposed development has been provided as **Appendix C.**

SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

Note: Complete Section B for the proposal and alternative(s) (if necessary)

Instructions for completion of Section B for linear activities

- 1) For linear activities (pipelines etc) it may be necessary to complete Section B for each section of the site that has a significantly different environment.
- 2) Indicate on a plan(s) the different environments identified
- 3) Complete Section B for each of the above areas identified
- 4) Attach to this form in a chronological order
- 5) Each copy of Section B must clearly indicate the corresponding sections of the route at the top of the next page.

Two (2) possible locations for the new proposed Tissue Machine Building have been assessed, namely Option 1 and Option 2. The new Tissue Machine Building in both the proposal (Option 2) and Alternative 1 (Option 1) is to be constructed on Twinsaver's existing Kliprivier Operations Base in Gauteng and therefore the receiving environment is the same for all alternatives / options. This section has thus only been completed once.

Section B has been duplicated for sections of the route times

Instructions for completion of Section B for location/route alternatives

- 1) For each location/route alternative identified the entire Section B needs to be completed
- 2) Each alternative location/route needs to be clearly indicated at the top of the next page
- 3) Attach the above documents in a chronological order

Section B has been duplicated for location/route alternatives times (complete only when appropriate)

Instructions for completion of Section B when both location/route alternatives and linear activities are applicable for the application

Section B is to be completed and attachments order in the following way

- All significantly different environments identified for Alternative 1 is to be completed and attached in a chronological order; then
- All significantly different environments identified for Alternative 2 is to be completed and attached chronological order, etc.

Section B - Section of Route (complete only when appropriate for above)

Section B – Location/route Alternative No. (complete only when appropriate for above)

1. PROPERTY DESCRIPTION

Property description:

(Including Physical Address and Farm name, portion etc.)

Portions 8, 20 and 23 of the Farm Zwartkopjies no. 143

2. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in decimal degrees. The degrees should have at least six decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

Alternative:

Proposal (Option 2) - New Tissue Machine Building on Western side of existing Pm3 Building.

Latitude (S):	Longitude (E):
-26.407247°	28.080714°

Alternative 1 (Option 1) - New Tissue Machine Building on Eastern side of existing Pm3 Building.

-26.406836°	28.082011°
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In the case of linear activities:

Alternative:

- Starting point of the activity
- Middle point of the activity
- End point of the activity

Latitude (S):	Longitude (E):

For route alternatives that are longer than 500m, please provide co-ordinates taken every 250 meters along the route and attached in the appropriate Appendix

Addendum of route alternatives attached [REDACTED]

The 21 digit Surveyor General code of each cadastral land parcel

PROPOSAL (OPTION 2)	T	O	I	R	0	0	0	0	0	0	0	0	1	4	3	0	0	0	0	8
	T	O	I	R	0	0	0	0	0	0	0	0	1	4	3	0	0	0	2	0
	T	O	I	R	0	0	0	0	0	0	0	0	1	4	3	0	0	0	2	3
ALT. 1 (OPTION 1)	T	O	I	R	0	0	0	0	0	0	0	0	1	4	3	0	0	0	0	8
	T	O	I	R	0	0	0	0	0	0	0	0	1	4	3	0	0	0	2	0
	T	O	I	R	0	0	0	0	0	0	0	0	1	4	3	0	0	0	2	3
ALT. 2																				
etc.																				

3. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Flat/	
-------	--

4. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site.

	Valley/	Plain/	
--	---------	--------	--

5. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

a) Is the site located on any of the following?

Shallow water table (less than 1.5m deep)

Dolomite, sinkhole or doline areas

According to the 2015 Regional Spatial Development Framework (RSDF) for Region F of the Ekurhuleni Metropolitan Municipality (EMM), the site is underlain by Dolomite. The information in this RSDF has however not been groundtruthed by the EMM.

Seasonally wet soils (often close to water bodies)

Unstable rocky slopes or steep slopes with loose soil

Dispersive soils (soils that dissolve in water)

Soils with high clay content (clay fraction more than 40%)

Any other unstable soil or geological feature

An area sensitive to erosion

YES/	
YES/	
YES/	
	NO/
	NO/
	NO/
	NO/
	NO/

(Information in respect of the above will often be available at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

b) are any caves located on the site(s) YES/ NO/

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S): _____ Longitude (E): _____

c) are any caves located within a 300m radius of the site(s) NO/

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S): _____ Longitude (E): _____

d) are any sinkholes located within a 300m radius of the site(s) NO/

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S): _____ Longitude (E): _____

If any of the answers to the above are "YES" or "unsure", specialist input may be requested by the Department

6. AGRICULTURE

Does the site have high potential agriculture as contemplated in the Gauteng Agricultural Potential Atlas (GAPA 4)? NO/

Please note: The Department may request specialist input/studies in respect of the above.

Please note that according to the information contained in the 2015 Regional Spatial Development Framework (RSDF) for Region F of the Ekurhuleni Metropolitan Municipality (EMM), the proposed application site is regarded as having high agricultural potential. The information in this RSDF has however not been groundtruthed by the EMM.

7. GROUNDCOVER

To be noted that the location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Indicate the types of groundcover present on the site and include the estimated percentage found on site

			Landscaped (vegetation) % = 20
	Paved surface (hard landscaping) % = 40	Building or other structure % = 30	Bare soil % = 10

Please note: The Department may request specialist input/studies depending on the nature of the groundcover and potential impact(s) of the proposed activity/ies.

Are there any rare or endangered flora or fauna species (including red list species) present on the site NO/

If YES, specify and explain:

Are there any rare or endangered flora or fauna species (including red list species) present within a 200m (if within urban area as defined in the Regulations) or within 600m (if outside the urban area as defined in the Regulations) radius of the site. NO/

If YES, specify and explain:

Are there any special or sensitive habitats or other natural features present on the site?

YES/

If YES, specify and explain:

According to the Surface Water Assessment, one (1) channelled valley bottom wetland can be found within the Kliprivier site. In addition, the Kliprivier River can also be found within close proximity (approx. 15m to the east of the Kliprivier property boundary) to the Kliprivier site. It was also found that an artificially created channel bisects the proposed expansion study site. This artificial watercourse seems to have been a modification of a natural watercourse which once flowed through the proposed expansion study site to the Kliprivier River as a tributary. This tributary is known as the Kok's River. It should be noted that the Kok's River tributary is located within close proximity to the existing boiler building which is going to be expanded as part of the proposed development.

In terms of biodiversity sensitivities, a Critical Biodiversity Area (CBA) area was identified to the east of the study site. In addition, the river buffer associated with the tributary of the Kliprivier River (i.e. the Kok's River) was found to be an Ecological Support Area (ESA).

Was a specialist consulted to assist with completing this section

YES/

If yes complete specialist details

Name of the specialist:

Shaun Taylor

Qualification(s) of the specialist:

BA – Geography and Environmental Science
BSc (Hons) – geography and Environmental Studies
MSc – Aquatic Health

Postal address:

P.O. Box 2921, Rivonia, South Africa

Postal code:

2128

Telephone:

011 798 0691

Cell: 072 779 4899

E-mail:

shaunt@sivest.co.za

Fax: 011 803 7272

Are any further specialist studies recommended by the specialist?

NO

If YES, specify:

If YES, is such a report(s) attached?

NO

If YES list the specialist reports attached below

Signature of specialist:

Date:

05 August 2016

Please note; If more than one specialist was consulted to assist with the filling in of this section then this table must be appropriately duplicated

8. LAND USE CHARACTER OF SURROUNDING AREA

Using the associated number of the relevant current land use or prominent feature from the table below, fill in the position of these land-uses in the vacant blocks below which represent a 500m radius around the site

1. Vacant land ✓	2. River, stream, wetland ✓		
	7. Agriculture ✓	8. Low density residential ✓	
21. Golf course/polo fields ✓		24. Railway line ^N ✓	25. Major road (4 lanes or more) ^N ✓

Other land uses (describe):	N/A

NOTE: Each block represents an area of 250m X 250m, if your proposed development is larger than this please use the appropriate number and orientation of hashed blocks

NORTH					
	7	1 2	1 25	1 25	7
	7	1 2	1 2 25	1	2 7
WEST	7 25	7		1 24	7 24
	7 25	7 25	8 21	21	2 21 24
	7 25	7 25	21	21	1 2 24
SOUTH					
	EAST				

Note: More than one (1) Land-use may be indicated in a block

Please note: The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed activity/ies. Specialist reports that look at health & air quality and noise impacts may be required for any feature above and in particular those features marked with an "A" and with an "N" respectively.

Have specialist reports been attached
If yes indicate the type of reports below

YES/	
------	--

- | |
|---|
| <ul style="list-style-type: none"> • Baseline Air Quality Assessment Report • Air Quality Impact Assessment Report • Heritage Impact Assessment Report • Surface Water Delineation and Impact Assessment Report |
|---|

9. SOCIO-ECONOMIC CONTEXT

Describe the existing social and economic characteristics of the area and the community condition as baseline information to assess the potential social, economic and community impacts.

Please see the table on the next page

The existing Kliprivier Tissue Mill is located within Region F of the Ekurhuleni Metropolitan Municipality (EMM). According to the Regional Spatial Development Framework (RSDF) for Region F of the Ekurhuleni MM, the region has the largest population within the EMM, and has an average annual growth rate of 2.3%. The social facilities in Region F are concentrated in the built-up areas. In 2012, the amount of people living in poverty across Region F, was found to be 3.22% higher than in 2002. The proposed development is therefore expected to create a significant amount of job opportunities for individuals living within the area and also help alleviate poverty within the region. It will therefore have a positive contribution towards the surrounding community.

According to the RSDF, the region contributes 23.07% to the Gross Domestic Profit (GDP) of the EMM. In addition, the manufacturing industry contributes the most towards the economy, with a contribution of 24%. The operations at Twinsaver's Kliprivier site are therefore considered to be an important contributor to the economy of the area. However, the finance sector has the fastest growth rate, followed by the manufacturing sector. The trade sector recorded the largest number of employment in 2012, with a total 21.5% of the total employment. The manufacturing sector was however considered to be the third largest contributor to employment with a contribution of 20%.

There are 14 existing heritage and tourism sites in Region F. The Rondebult Bird Sanctuary and the Ke-Ditselana Cultural Village are two (2) of the most prominent tourism sites in Region F. However, the only tourism sites located within close proximity to the proposed application site are the Klipriviersberg Municipal Nature Reserve and Suikerbosrand Provincial Nature Reserve, which are located approximately 15 km north-west and 18 km south-west of the project area respectively. In addition, There is a country club (Kliprivier Country Club) and a few residential houses located on the southern boundary of the site.

Region F is favourably located in the economic activity and employment area of the Gauteng Province. The region can be described as a compact region with a good balance between its residential population and integrated industrial and commercial capability linked closely to ORTIA and City of Johannesburg MM. The existing residential developments in Region F occur throughout the region with the high-income areas closer to the Alberton CBD to the west of the regions between the R59 and N3, and the more densely developed housing and informal areas located to the east and south of the regions. The area surrounding the proposed application site is therefore not characterised by residential development and informal settlements. It is however important to note that a small residential area and a Golf Course can be found on the southern boundary of the site. According to the RSDF, in terms of the current housing projects within the region, the southern parts of the region close to Palm Ridge are currently favoured. In most instances, the housing initiatives are located on vacant land within or on the outskirts of the existing residential environment. This is concerning as the proposed application site is surrounded by a relatively large amount of vacant land. These housing projects are however not expected to affect the proposed application site as, according to the RSDF, no housing developments are being proposed within close proximity to the application site.

According to the RSDF, the growth of Region F is based primarily on industrial and logistical development. Industrial developments therefore currently form the economic hub of the regions and the focus of the industrial areas remains maintenance and upgrading, with the promotion of development of new industrial areas towards the east of the region and towards the south east. Region F is a substantially developed region already, with little opportunity for extensive development opportunities within the existing urban footprint.

As previously mentioned, the proposed development is expected to create a significant amount of job opportunities for individuals living within the area and also help alleviate poverty within the region. It will therefore have a positive contribution towards the surrounding community.

The 2015 Regional Spatial Development Framework (RSDF) for Region F of the Ekurhuleni Metropolitan Municipality has been provided as Appendix I6.

10. CULTURAL/HISTORICAL FEATURES

Please be advised that if section 38 of the National Heritage Resources Act 25 of 1999 is applicable to your proposal or alternatives, then you are requested to furnish this Department with written comment from the South African Heritage Resource Agency (SAHRA) – Attach comment in appropriate annexure

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-
- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
 - (b) the construction of a bridge or similar structure exceeding 50m in length;
 - (c) any development or other activity which will change the character of a site-
 - (i) exceeding 5 000 m² in extent; or
 - (ii) involving three or more existing erven or subdivisions thereof; or
 - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
 - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
 - (d) the re-zoning of a site exceeding 10 000 m² in extent; or
 - (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

Are there any signs of culturally (aesthetic, social, spiritual, environmental) or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or close (within 20m) to the site?
If YES, explain:

YES/	
------	--

Some of the buildings on the property date from the early 1900's and are considered to be historic buildings. It must be noted that the site exists in a highly modified state and the development area is an asphalt covered surface, making it impossible to determine whether there would be sub-surface sites here. Although unlikely, sub-surface remains of heritage sites could still be encountered during the construction activities associated with the project. Such sites would offer no surface indication of their presence due to the high state of alterations in some areas as well as heavy plant cover in other areas.

If uncertain, the Department may request that specialist input be provided to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist if one was already appointed:

Please see the table below / on next page

No sites of heritage potential could be identified on the site. The site exists in a highly modified state and the development area is an asphalt covered surface, making it impossible to determine whether there would be sub-surface sites here. Although some of the buildings on the property date from the early 1900's and are considered to be historic buildings, the proposed development would have no adverse effect on these as none of these are in danger of being altered. The structures that are to be altered date from the early 1990's and therefore hold no historical value. No fatal flaws were identified.

The proposed development will not be intruding on bedrock and therefore it is not anticipated that any paleontological deposits will be affected. No sites associated with the post-contact era will be affected by the proposed development.

Due to the fact that the project will mainly involve sub-surface infrastructure it is not anticipated that any visual impacts will be encountered. No impact anticipated with regards to paleontological sites.

Although unlikely, sub-surface remains of heritage sites could still be encountered during the construction activities associated with the project. Such sites would offer no surface indication of their presence due to the high state of alterations in some areas as well as heavy plant cover in other areas.

It was found that neither of the proposed options would have any detrimental effect on the heritage value of the study area. It is therefore insignificant from a heritage point of view which of these are chosen.

Will any building or structure older than 60 years be affected in any way?
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?
If yes, please attached the comments from SAHRA in the appropriate Appendix

[REDACTED]	NO/
	NO/

SECTION C: PUBLIC PARTICIPATION (SECTION 41)

A Public Participation Report has been compiled, outlining the detailed public participation process undertaken as part of this basic assessment. The Public Participation Report is included in **Appendix E10**.

1. The Environmental Assessment Practitioner must conduct public participation process in accordance with the requirement of the EIA Regulations, 2014.

2. LOCAL AUTHORITY PARTICIPATION

Local authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least thirty (30) calendar days before the submission of the application to the competent authority.

Was the draft report submitted to the local authority for comment?

YES/

One (1) hard copy and one (1) electronic copy (via CD) of the Draft Basic Assessment Report (DBAR) was submitted to the Ekurhuleni Metropolitan Municipality (i.e. the local authority) for comment on the 30th of June 2016.

If yes, has any comments been received from the local authority?

NO/

If "YES", briefly describe the comment below (also attach any correspondence to and from the local authority to this application):

If "NO" briefly explain why no comments have been received or why the report was not submitted if that is the case.

It is not clear why the Ekurhuleni Metropolitan Municipality (EMM) have not provided any comments on the DBAR at this stage. It must be noted that SiVEST contacted a representative from the EMM (via telephone) in order to remind them that the comment period for the DBAR was ending and to attempt to obtain their comments. The EMM did however not respond to this request and subsequently did not provide SiVEST with any comments. It is therefore assumed that the EMM have no comments with regards to the DBAR which was submitted and thus have no objections regarding the proposed development. In summary, EMM were notified in writing about the proposed development, receive a hard and soft copy of the DBAR, and SiVEST contacted them via telephone to try to get their comments.

3. CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the activity, site or property, such as servitude holders and service providers, should be informed of the application at least **thirty (30) calendar days** before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES/

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

At this stage the only stakeholders which have provided comments with regards to the Draft Basic Assessment Report (DBAR) which was submitted include Telkom SA, The Department of Agriculture, Forestry & Fisheries (DAFF) and the Air Traffic Navigation Services (ATNS).

Telkom SA indicated that they have no objections or issue with the proposed expansion at the existing Twinsaver Kliprivier Operations Base. In addition, ATNS stated that the proposed development falls under the O.R Tambo Upper Control Area Airspace, however it will not affect the safety of flights. ATNS thus has no objection subject to the construction of said obstacle at the co-ordinates provided to a maximum elevation of 1525m AMSL inclusive of all emitting antennae / spires to the top of the structure. The DAFF simply acknowledged the receipt of the DBAR and provided SiVEST with a reference number for any enquiries. No further comments have subsequently been received from the DAFF.

It is not clear why no comments have been received from other stakeholders this stage. It must be noted that SiVEST contacted all stakeholders in order to remind them that the comment period for the DBAR was ending and to attempt to obtain their comments. Since no comments have been received from the remaining stakeholders, it is assumed that none of these stakeholders have any significant comments regarding the DBAR which was submitted and thus have no objections with regards to the proposed development.

All comments received from stakeholders have been included in **Appendix E7**.

If "NO" briefly explain why no comments have been received

4. GENERAL PUBLIC PARTICIPATION REQUIREMENTS

The Environmental Assessment Practitioner must ensure that the public participation process is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees and ratepayers associations. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was flawed.

The EAP must record all comments and respond to each comment of the public / interested and affected party before the application report is submitted. The comments and responses must be captured in a Comments and Responses Report as prescribed in the regulations and be attached to this application.

A Comment and Response Report has been included in **Appendix E6**.

5. APPENDICES FOR PUBLIC PARTICIPATION

All public participation information is to be attached in the appropriate Appendix. The information in this Appendix is to be ordered as detailed below

Appendix 1 – Proof of site notice

Appendix 2 – Written notices issued as required in terms of the regulations

Appendix 3 – Proof of newspaper advertisements

Appendix 4 – Communications to and from interested and affected parties

Appendix 5 – Minutes of any public and/or stakeholder meetings

Appendix 6 - Comments and Responses Report

Appendix 7 –Comments from I&APs on Basic Assessment (BA) Report

Appendix 8 –Comments from I&APs on amendments to the BA Report

Appendix 9 – Copy of the register of I&Aps

SECTION D: RESOURCE USE AND PROCESS DETAILS

Note: Section D is to be completed for the proposal and alternative(s) (if necessary)

Instructions for completion of Section D for alternatives

- 1) For each alternative under investigation, where such alternatives will have different resource and process details (e.g. technology alternative), the entire Section D needs to be completed
- 4) Each alternative needs to be clearly indicated in the box below
- 5) Attach the above documents in a chronological order

Section D has been duplicated for alternatives [REDACTED] times
(complete only when appropriate)

Section D Alternative No. [REDACTED] (complete only when appropriate for above)

1. WASTE, EFFLUENT, AND EMISSION MANAGEMENT

Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?
If yes, what estimated quantity will be produced per month?

YES/	[REDACTED]
N/A	–
Unknown at this stage	

How will the construction solid waste be disposed of (describe)?

The building construction rubble will be used on site as fill where possible. Any building construction rubble which cannot be used on site as fill will be disposed of by the building contractor by making use of trucks which will transport the waste away from site. The building construction rubble will consist mainly of clay bricks, concrete, sand and stone and can be used for backfilling and other construction purposes. Ferrous off cuts and trimmings from the structural erection process will be sold to scrap metal recyclers. In addition, wire from the pulp bales will be coiled and sold as scrap metal to metal recyclers.

Where will the construction solid waste be disposed of (describe)?

Construction solid waste will be disposed of a registered landfill site in the Ekurhuleni Metropolitan Municipality. Ferrous off cuts and trimmings from the structural erection process will be sold to scrap metal recyclers. In addition, wire from the pulp bales will be coiled and sold as scrap metal to metal recyclers.

Will the activity produce solid waste during its operational phase?
If yes, what estimated quantity will be produced per month?

YES/	[REDACTED]
	46 m ³

How will the solid waste be disposed of (describe)?

The sludge from the new process (which is minimal because the process uses virgin kraft pulp) will be recycled and/or used on PM3. Any excess (in the form of paper sludge) will be sent to brick manufacturers (namely OCON) for use in their brick manufacturing process.

Has the municipality or relevant service provider confirmed that sufficient air space exists for treating/disposing of the solid waste to be generated by this activity?

[REDACTED]	NO/
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Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

The solid waste (i.e. the sludge) will either be recycled via the Brick Manufacturing process (Operational Phase only) or used on PM3. In addition, any solid waste which cannot be recycled will be sent to a registered landfill site (either municipal or private) in the case of both Construction and Operational Phases of the activity.

Note: If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation? YES/ NO/
If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility? YES/ NO/
If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Describe the measures, if any, that will be taken to ensure the optimal reuse or recycling of materials:

The building construction rubble will be used on site as fill where possible. This material will consist mainly of clay bricks, concrete, sand and stone and can be used for backfilling and other construction purposes. Ferrous off cuts and trimmings from the structural erection process will be sold to scrap metal recyclers. In addition, wire from the pulp bales will be coiled and sold as scrap metal to metal recyclers. The sludge from the new process (which is minimal because the process uses virgin kraft pulp) will be recycled or used on PM3. Any excess (in the form of paper sludge) will be sent to brick manufacturers for use in their process. There will be a small increase in ash from the coal fired boiler. This ash is used for brick manufacturing and road construction purposes. All oil and lubricants used in the maintenance of machinery is recovered and sold to oil recycling operations.

Liquid effluent (other than domestic sewage)

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

YES/ NO/

If yes, what estimated quantity will be produced per month?

9 000 m³

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the liquid effluent to be generated by this activity(ies)?

YES/ NO/

Will the activity produce any effluent that will be treated and/or disposed of on site?

YES/ NO/

If yes, what estimated quantity will be produced per month?

9000 m³

If yes describe the nature of the effluent and how it will be disposed.

Water is used as the main transport and cleaning medium in the Tissue Making process. The new activity will consume approximately 135 000m³ per annum of potable water supplied by the Rand Water Board. Approximately 80 % of the water consumed is cleaned to municipal standards at an on-site effluent treatment facility and is then returned to the municipal system.

Note that if effluent is to be treated or disposed on site the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA

Will the activity produce effluent that will be treated and/or disposed of at another facility? YES/ NO/

If yes, provide the particulars of the facility:

Facility name:

Contact person:

Postal address:

Postal code:

Telephone:

E-mail:

Cell:

Fax:

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

The new process / activity has an internal water clarification loop that maximizes water re-use. Potable water will only be used in process critical operations. Added to this, clarified effluent from the new activity will be used in the existing tissue making process (PM3) to maximize the utilization of water on the Kliprivier site.

Liquid effluent (domestic sewage)

Will the activity produce domestic effluent that will be disposed of in a municipal sewage system?

YES/ NO/

If yes, what estimated quantity will be produced per month?

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the domestic effluent to be generated by this activity(ies)?



Will the activity produce any effluent that will be treated and/or disposed of on site?

YES/

If yes describe how it will be treated and disposed of.

The effluent from the tissue making process will be channeled to a new effluent sump which will be located within the new building. It will then be pumped to a new Dissolved Air Flotation (DAF) unit. The DAF will be pH controlled using H₂SO₄ and NaOH. A polymer will also be added to assist with flocculation.

The "accepts" / "clear" water from the DAF will be sent to an "accepts" tank and then pumped to the current Recovered Fibre Processing Plant and PM3 Building for use in the tissue making process (i.e. it will be recycled). Any excess water will be sent to the existing storage dam (Tommy's Dam) and then sent to the municipal effluent treatment works. Under normal circumstance (stable operating conditions), approximately 65% of the water from the TM5 Building will be recycled and used to replace fresh water make-up in the PM3 Building.

The sludge from the DAF, together with the sludge from the current process, will be pumped to the sludge tank and then to the existing sludge press. Any excess sludge will be sent to a new sludge press which will be installed in parallel. The filtrate from the sludge presses will be pumped to Tommy's dam and then to the municipal sewer.

The sludge is conveyed to the sludge bins and transported by road to the clay brick manufacturers who use it for binding and strengthening the bricks and to reduce energy consumption. The latter negates the need to send any sludge to landfill.

Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES/

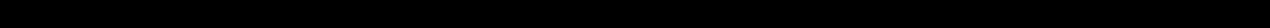
If yes, is it controlled by any legislation of any sphere of government?

YES/

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

The Air Quality Impact Assessment revealed that the proposed expansion at the Kliprivier site is not expected to trigger any of the listed activities in the Air Quality Act and therefore an Atmospheric Emission License would not be required. It was however recommended that regular monitoring be undertaken in order to ensure that the activities taking place at the Kliprivier site remain under the thresholds in the listed activities. Thus, should the monitoring results reveal that any of the future activities on site exceed the thresholds in the listed activities, an Atmospheric Emission License would need to be applied for prior to the commencement of the activity.

If no, describe the emissions in terms of type and concentration:



2. WATER USE

Indicate the source(s) of water that will be used for the activity

Directly from water board/

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

N/A

If Yes, please attach proof of assurance of water supply, e.g. yield of borehole, in the appropriate Appendix

Does the activity require a water use permit from the Department of Water Affairs?

YES/

If yes, list the permits required

According to the Surface Water Assessment, a water use license application (WULA) will need to be applied for considering activities that will take place in or in close proximity to the channelled valley bottom wetland as well as the tributary of the Klipriver River (i.e. The Kok's River). It is however important to note that a WULA can only be undertaken once Environmental Authorisation (EA) has been granted. The WULA will be done in consultation with the DWS prior to undertaking any construction activities related to the proposed expansion. Additional potential applicable water uses will also be confirmed when consultation is undertaken.

If yes, have you applied for the water use permit(s)?

If yes, have you received approval(s)? (attached in appropriate appendix)

NO/

3. POWER SUPPLY

Please indicate the source of power supply eg. Municipality / Eskom / Renewable energy source

Eskom

If power supply is not available, where will power be sourced from?

4. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

In designing the new process, the latest best available techniques (BAT) will be considered to ensure that the process is energy efficient. In addition to this, energy efficient unit operations will be considered (i.e. Energy efficient motors , Variable Speed drives to control flows as opposed to control valves , vacuum turbo blowers as opposed to liquid ring pumps, variable speed compressors etc.). In addition, the new process has been designed to recover as much heat energy as possible. The process design includes 4 heat recovery systems so there will be minimal heat loss from the process.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

No alternative energy sources that could replace electricity, coal, natural gas and/or Liquefied Petroleum Gas (LPG) have been discovered and/or considered. The new process has been designed to recover as much heat energy as possible. The process design includes 4 heat recovery systems so there will be minimal heat loss from the process.

SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts as well as the impacts of not implementing the activity (Section 24(4)(b)(i)).

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summarise the issues raised by interested and affected parties.

The only comments which have been received to date include those from GDARD, Telkom SA and ATNS. No other comments have been received by any Interested and/or Affected Parties (I&APs) at this stage. It is therefore assumed that none of the I&APs have any issues, concerns or objections with regards to the proposed development.

Summary of response from the practitioner to the issues raised by the interested and affected parties (including the manner in which the public comments are incorporated or why they were not included)

(A full response must be provided in the Comments and Response Report that must be attached to this report):

The only comments which have been received to date include those from GDARD, Telkom SA and ATNS. No other comments have been received by any Interested and/or Affected Parties (I&APs) at this stage. It is therefore assumed that none of the I&APs have any issues, concerns or objections with regards to the proposed development.

A Comment and Response Report has been included as **Appendix E6**.

2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION AND OPERATIONAL PHASE

Briefly describe the methodology utilised in the rating of significance of impacts

The determination of the effect of an environmental impact on an environmental parameter is determined through a systematic analysis of the various components of the impact. This is undertaken using information that is available to the environmental practitioner through the process of the environmental impact assessment. Impact assessments must take account of the nature, scale and duration of effects on the environment and whether such effects are positive (beneficial) or negative (detrimental). Each issue / impact is usually assessed according to the planning, construction, operation and decommissioning phases. The impact evaluation of predicted impacts is undertaken through an assessment of the significance of the impacts.

Significance is determined through a synthesis of impact characteristics which include context and intensity of an impact. Context refers to the geographical scale whereas intensity is defined by the severity of the impact. Significance is calculated using a rating system which allocated points for each impact. The rating system is applied to the potential impact on the receiving environment and includes an objective evaluation of the mitigation of the impact. Impacts have been consolidated into one rating. The total number of points scored for each impact indicates the level of significance of the impact. In assessing the significance of each issue, nature, geographic extent, probability, reversibility, irreplaceable loss of resources, duration, cumulative effect and intensity / magnitude criteria (including an allocated point system) are used. The calculation of the significance of an impact uses the following formula:

(Extent + Probability + Reversibility + Irreplaceability + Duration + Cumulative Effect) x Magnitude / intensity.

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the construction phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

Proposal (Option 2 - New Tissue Machine Building constructed on the Western side of the existing Pm3 Building)

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
Impact on Heritage sites of significance during construction and operation	Low negative	<p>Should any graves be identified during the construction or operation phase of the project and need to be removed, the following procedures are required:</p> <ul style="list-style-type: none"> • Notification of the impending removals (using English, Afrikaans and local language media and notices at the grave site); • Consultation with individuals or communities related or known to the deceased; • Satisfactory arrangements for the curation of human remains and / or headstones in a museum, where applicable; • Procurement of a permit from the SAHRA; • Appropriate arrangements for the exhumation (preferably by a suitably trained archaeologist) and re-interment (sometimes by a registered undertaker, in a formally proclaimed cemetery); and • Observation of rituals or ceremonies required by the families. 	Low negative	<p>Impact on Heritage sites of significance during construction and operation:</p> <p>Low negative</p>
Impact on Ambient Qir Quality as a result of Dust Fallout emissions during construction and operation	Low negative	<ul style="list-style-type: none"> • Dust emissions as a result of debris handling can be mitigated by implementing wind speed reduction techniques (windbreaks and source enclosures) and by making use of wet 	Low negative	<p>Impact on Ambient Qir Quality as a result of Dust Fallout emissions during construction and operation:</p>

		<p>suppression.</p> <ul style="list-style-type: none"> • Dust emissions as a result of truck transport can be mitigated by making use of wet suppression, paving and chemical stabilisation. • Dust emissions as a result of Bulldozers and Pan Scrapers can be mitigated by making use of wet suppression. • Dust emissions as a result of cut/fill material handling can be mitigated by implementing wind speed reduction techniques and by making use of wet suppression. • Dust emissions as a result of cut/fill haulage can be mitigated by implementing wind speed reduction techniques, paving by and making use of wet suppression. • Dust emissions as a result of general construction activities can be mitigated by implementing wind speed reduction techniques, by making use of wet suppression and by early paving or permanent roads. • Dust emissions as a result of offloading coal from trucks can be mitigated by making use of water sprays. • Dust emissions as a result of loading stockpiles can be mitigated by making use of a variable height stacker, water prays, telescopic chute with sprays and total enclosure. • Dust emissions as a result of unloading from stockpiles can be 		<p>Low negative</p>
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		<p>mitigated by making use of water sprays and wind breaks.</p> <ul style="list-style-type: none"> Dust emissions from miscellaneous transfer and conveying of materials can be mitigated by making use of water sprays with chemicals, enclosures and fabric filters. 		
Impact on Ambient Air Quality as a result of PM 10, PM 2.5, NO2 and SO2 emissions during construction and operation	Low negative	<ul style="list-style-type: none"> The new boiler should be fitted with modern high efficiency multi-cyclone devices in order to remove Particulate Matter (PM) from gas. Emissions monitoring should be conducted regularly (annual basis) on the units in order to check the efficiency of the boiler operation and the control device. Frequent maintenance checks should be conducted. Higher quality coals should be used for the combustion process as the type of fuel that is used in the boiler can significantly reduce emissions. 	Low negative	Impact on Ambient Air Quality as a result of PM 10, PM 2.5, NO2 and SO2 emissions during construction and operation: Low negative
Surface Water Impacts Associated with the Construction Lay-down Area	Low negative	<ul style="list-style-type: none"> Avoiding Direct Impacts to Surface Water Resources <p>The lay-down area is not to be placed in any of the identified surface water resources as well as the established buffer zones.</p> <ul style="list-style-type: none"> Preventing Indirect Erosion, Sedimentation and Run-off Impacts – <p>In general, adequate structures must be put into place (temporary or permanent where necessary in extreme cases) to deal with increased/accelerated</p>	Low negative	Surface Water Impacts Associated with the Construction Lay-down Area: Low negative

		<p>run-off and sediment volumes. The use of silt fencing and potentially sandbags or hessian “sausage” nets can be used to around the lay-down area to prevent run-off from the cleared proposed construction lay-down area flowing into the surrounding area and possibly, any nearby wetlands. This will additionally assist with preventing consequent erosion and sedimentation in susceptible surrounding areas.</p> <ul style="list-style-type: none"> • Preventing Indirect Impacts from Hazardous Substances and Liquids <p>No hazardous substances/liquids or building materials are to be stored in the identified surface water resources as well as the associated buffer zones. Should a designated storage area be required, the storage area must be placed at the at least 100m away from the identified surface water resources. All vehicles and machinery must be regularly serviced and maintained before being allowed to enter the construction areas. The study site is to contain sufficient spill contingency measures throughout the construction process. These include, but are not limited to, availability of oil spill kits and fire extinguishers. Fuel, oil or hazardous substance storage areas must be banded to 110% capacity to prevent oil or fuel contamination in run-off entering the identified surface water resources.</p>		
Loss of Wetland and		<ul style="list-style-type: none"> • Avoiding Direct 		Loss of Wetland

Riparian Habitat during Construction	Medium negative	<p style="text-align: center;">Impacts to Surface Water Resources</p> <p>The wetland area is to be avoided of all proposed expansion components as far as practically possible.</p> <p>The tributary and wetland area is to be designated as “highly sensitive” areas where access is prohibited during the construction phase. The highly sensitive areas must be clearly demarcated. The buffer zones of the wetland and tributary of the Klip River must be taken into consideration and avoided as far as practically possible as well. Should the relevant water use license be granted for construction to take place in the wetland and tributary of the Klip River, the impacted area must be as minimal as possible. No access into the surrounding sensitive areas beyond the construction zone is allowed. A Right of Way (RoW) is to be established within the construction zone to allow for the access and operation of construction personnel and vehicles. This will be the only area that will be allowed to be accessed during the construction phase by personnel and vehicles. This area is to be limited to the construction footprint and no further. This construction footprint must be clearly demarcated and visible at all times. No unnecessary clearance of wetland habitat is allowed to take place in unauthorized areas. Measure must be put in place to avoid the unauthorized removal of vegetation by contractors (i.e. stringent penalties/fines).</p>	Low negative	and Riparian Habitat during Construction: Medium negative
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		<p>All further mitigation measures as determined in the water use license must be adhered to.</p> <p>No animals or avi-fauna are to be hunted, captured, trapped, removed, harmed, killed or eaten.</p> <p>An appointed Environmental Control Officer (ECO) is to be contracted to monitor the construction phase of the proposed development. The ECO must have experience with monitoring of construction in wetlands and watercourses.</p> <p>The ECO must be contacted should any animals or avi-fauna be hunted, captured, trapped, removed, harmed, killed or eaten during the construction phase. Penalties must be imposed should this take place. Similarly, accidental injury or death of fauna (including small mammals, reptiles, amphibians etc.) and avi-fauna must be reported to the ECO.</p> <p>It is preferable that construction take place in the low flow season (winter months being May/June/July/August) as far as practically possible.</p> <p>The time that surfaces are left exposed must be kept to a minimum and re-vegetation should be implemented where applicable.</p> <p>The establishment of exotic flora must not be allowed and needs to be cleared as soon as practically possible where identified. This will need to be monitored by the ECO.</p>		
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		<p>Rehabilitation to affected areas through/in the wetlands will need to take place in any impacted areas in the wetlands following construction. A wetland rehabilitation plan and monitoring programme must be compiled should construction need to take place in wetlands. This must be done prior to construction once final layouts are available.</p>		
Improvement of Wetland and Riparian Habitat during Construction	Low negative	<ul style="list-style-type: none"> Removal and replacement of Alien Tree Species form Surface Water Resources <p>Identification, marking and removal of alien tree species along the tributary of the Klip River and within the channelled valley bottom wetland on site can be undertaken. Preferably in the dry winter season either, in tandem with construction activities or shortly thereafter. The higher order tree species that should be removed include <i>Eucalyptus</i> sp., <i>Quercus robur</i> and <i>Schinus molle</i>.</p> <p>The species that can be planted to replace alien species in order to create habitat along the tributary of the Klip River includes <i>Combretum erythrophyllum</i>, <i>C. imberbe</i>, <i>Rauvolfia caffra</i>, <i>Olea Africana</i> and any other species associated with watercourses in the local area.</p>	Low negative	Improvement of Wetland and Riparian Habitat during Construction: Low negative
Impacts on Surface Water as a result of Increased run-off, erosion and sedimentation during construction		<ul style="list-style-type: none"> Railway Siding <p>Implementation of soft engineering structures to mitigate increased run-off and sedimentation are</p>		Impacts on Surface Water as a result of Increased run-off, erosion and sedimentation

	Medium negative	<p>recommended. These can include the use of silt netting/traps and hessian sand bags (where applicable). Temporary berms to assist with the deceleration of run-off are also recommended. Importantly, run-off from the site in general must only be allowed to exit the site in a controlled and diffuse manner. Point storm water discharge is highly discouraged unless energy dissipation structures are present to decelerate run-off in downstream areas. All impacted areas must be adequately sloped to prevent onset of erosion.</p> <p>Construction close to and in the wetlands where a water use license and environmental authorisation has been obtained to do so, is to take place in the low flow season (winter months May/June/July) as far as practically possible.</p> <p>The time that surface are exposed must be kept to a minimum and re-vegetation must be implemented where applicable as soon as possible.</p> <p>The establishment of exotic flora must not be allowed and is to be cleared as soon as practically possible during construction.</p> <p>Rehabilitation to affected areas through/in the wetland and tributary of the Klip River will need to take place in any impacted areas following construction. A wetland rehabilitation plan and monitoring programme must be compiled should</p>	Low negative	<p>during construction:</p> <p>Medium negative</p>
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		<p>construction need to take place in the wetland and tributary of the Klip River. This must be done prior to construction once final layouts are available.</p>		
Water Quality Impacts during Construction	Medium negative	<ul style="list-style-type: none"> Preventing Pollution of Aquatic Resources <p>All construction materials and stockpiles must be contained by bunded areas to ensure that materials are not transported to the wetland and tributary of the Klip River located downstream of construction areas. No equipment, vehicles, stockpiles or materials are to be parked or stored within 100m of the wetland and tributary of the Klip River.</p> <p>No hazardous liquids or substances are to be stored directly in or within a distance of 100m from the wetland and tributary of the Klip River.</p> <p>All vehicles and equipment must be regularly maintained to avoid any oil, fuel or hazardous leaks or spills. Spillage clean up kits must be readily available on site should an incident occur. All leaks and spillages must be cleared as soon as practically possible.</p> <p>Solid waste must be removed on a regular basis as soon as practically possible.</p> <p>Chemical toilets must be provided and must be serviced on a regular basis. These are not to be placed within 50m of the wetland and tributary of the Klip River.</p>	Low negative	<p>Water Quality Impacts during Construction:</p> <p>Medium negative</p>

		Any contractor's camps must not be placed within or near the wetland and tributary of the Klip River.		
Storm Water Management Impacts during operation	High negative	<ul style="list-style-type: none"> Establishment of Efficient Operational Storm Water Management Systems <p>All waste water and storm water systems must be separated. All waste water associated with the expansion must be diverted to the effluent treatment clarifier and must be treated to municipal standards before being released into municipal streams.</p> <p>The storm water management plan is to be compiled by a suitably qualified engineer. The storm water management plan must account for the separation of storm water and waste water discharge infrastructure. The storm water management system must be a closed system. The storm water management system must account for the upgrading on infrastructure in order to accommodate the separation of waste water streams from storm water streams. Additional structures, where required, are to be implemented as part of the expansion activities before the proposed expansion becomes operational (for example, attenuation ponds).</p>	Low negative	Storm Water Management Impacts during Operation: High negative

Alternative 1 (Option 1 - New Tissue Machine Building constructed on the Eastern side of the existing Pm3 Building) *(REPEAT THIS TABLE FOR EACH ALTERNATIVE)*

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
Impact on Heritage		Should any graves be	Impact on	

sites of significance during construction and operation	Low negative	<p>identified during the construction or operation phase of the project and need to be removed, the following procedures are required:</p> <ul style="list-style-type: none"> • Notification of the impending removals (using English, Afrikaans and local language media and notices at the grave site); • Consultation with individuals or communities related or known to the deceased; • Satisfactory arrangements for the curation of human remains and / or headstones in a museum, where applicable; • Procurement of a permit from the SAHRA; • Appropriate arrangements for the exhumation (preferably by a suitably trained archaeologist) and re-interment (sometimes by a registered undertaker, in a formally proclaimed cemetery); and • Observation of rituals or ceremonies required by the families. 	Heritage sites of significance during construction and operation	Low negative
Impact on Ambient Air Quality as a result of Dust Fallout emissions during construction and operation	Low negative	<ul style="list-style-type: none"> • Dust emissions as a result of debris handling can be mitigated by implementing wind speed reduction techniques (windbreaks and source enclosures) and by making use of wet suppression. • Dust emissions as a result of truck transport can be mitigated by making use of wet suppression, paving and chemical stabilisation. • Dust emissions as a 	Impact on Ambient Air Quality as a result of Dust Fallout emissions during construction and operation	Low negative

		<p>result of Bulldozers and Pan Scrapers can be mitigated by making use of wet suppression.</p> <ul style="list-style-type: none"> • Dust emissions as a result of cut/fill material handling can be mitigated by implementing wind speed reduction techniques and by making use of wet suppression. • Dust emissions as a result of cut/fill haulage can be mitigated by implementing wind speed reduction techniques, paving by and making use of wet suppression. • Dust emissions as a result of general construction activities can be mitigated by implementing wind speed reduction techniques, by making use of wet suppression and by early paving or permanent roads. • Dust emissions as a result of offloading coal from trucks can be mitigated by making use of water sprays. • Dust emissions as a result of loading stockpiles can be mitigated by making use of a variable height stacker, water sprays, telescopic chute with sprays and total enclosure. • Dust emissions as a result of unloading from stockpiles can be mitigated by making use of water sprays and wind breaks. • Dust emissions from miscellaneous transfer and conveying of materials can be mitigated by making use 		
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		of water sprays with chemicals, enclosures and fabric filters.		
Impact on Ambient Air Quality as a result of PM 10, PM 2.5, No2 and SO2 emissions during construction and operation	Low negative	<ul style="list-style-type: none"> The new boiler should be fitted with modern high efficiency multi-cyclone devices in order to remove Particulate Matter (PM) from gas. Emissions monitoring should be conducted regularly (annual basis) on the units in order to check the efficiency of the boiler operation and the control device. Frequent maintenance checks should be conducted. Higher quality coals should be used for the combustion process as the type of fuel that is used in the boiler can significantly reduce emissions. 	Impact on Ambient Air Quality as a result of PM 10, PM 2.5, No2 and SO2 emissions during construction and operation	Low negative
Surface Water Impacts Associated with the Construction Lay-down Area	Low negative	<ul style="list-style-type: none"> Avoiding Direct Impacts to Surface Water Resources <p>The lay-down area is not to be placed in any of the identified surface water resources as well as the established buffer zones.</p> <ul style="list-style-type: none"> Preventing Indirect Erosion, Sedimentation and Run-off Impacts – <p>In general, adequate structures must be put into place (temporary or permanent where necessary in extreme cases) to deal with increased/accelerated run-off and sediment volumes. The use of silt fencing and potentially sandbags or hessian “sausage” nets can be used to around the lay-down area to prevent run-off from the cleared proposed construction lay-down area</p>	Surface Water Impacts Associated with the Construction Lay-down Area	Low negative

		<p>flowing into the surrounding area and possibly, any nearby wetlands. This will additionally assist with preventing consequent erosion and sedimentation in susceptible surrounding areas.</p> <ul style="list-style-type: none"> • Preventing Indirect Impacts from Hazardous Substances and Liquids <p>No hazardous substances/liquids or building materials are to be stored in the identified surface water resources as well as the associated buffer zones. Should a designated storage area be required, the storage area must be placed at the at least 100m away from the identified surface water resources. All vehicles and machinery must be regularly serviced and maintained before being allowed to enter the construction areas. The study site is to contain sufficient spill contingency measures throughout the construction process. These include, but are not limited to, availability of oil spill kits and fire extinguishers. Fuel, oil or hazardous substance storage areas must be banded to 110% capacity to prevent oil or fuel contamination in run-off entering the identified surface water resources.</p>		
Loss of Wetland and Riparian Habitat during Construction	Medium negative	<ul style="list-style-type: none"> • Avoiding Direct Impacts to Surface Water Resources <p>The wetland area is to be avoided of all proposed expansion components as far as practically possible.</p> <p>The tributary and wetland area is to be designated as</p>	Loss of Wetland and Riparian Habitat during Construction	Medium negative

		<p>“highly sensitive” areas where access is prohibited during the construction phase. The highly sensitive areas must be clearly demarcated. The buffer zones of the wetland and tributary of the Klip River must be taken into consideration and avoided as far as practically possible as well. Should the relevant water use license be granted for construction to take place in the wetland and tributary of the Klip River, the impacted area must be as minimal as possible. No access into the surrounding sensitive areas beyond the construction zone is allowed. A Right of Way (RoW) is to be established within the construction zone to allow for the access and operation of construction personnel and vehicles. This will be the only area that will be allowed to be accessed during the construction phase by personnel and vehicles. This area is to be limited to the construction footprint and no further. This construction footprint must be clearly demarcated and visible at all times. No unnecessary clearance of wetland habitat is allowed to take place in unauthorized areas. Measure must be put in place to avoid the unauthorized removal of vegetation by contractors (i.e. stringent penalties/fines). All further mitigation measures as determined in the water use license must be adhered to.</p> <p>No animals or avi-fauna are to be hunted, captured, trapped, removed, harmed, killed or eaten.</p>		
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		<p>An appointed Environmental Control Officer (ECO) is to be contracted to monitor the construction phase of the proposed development. The ECO must have experience with monitoring of construction in wetlands and watercourses.</p> <p>The ECO must be contacted should any animals or avi-fauna be hunted, captured, trapped, removed, harmed, killed or eaten during the construction phase. Penalties must be imposed should this take place. Similarly, accidental injury or death of fauna (including small mammals, reptiles, amphibians etc.) and avi-fauna must be reported to the ECO.</p> <p>It is preferable that construction take place in the low flow season (winter months being May/June/July/August) as far as practically possible.</p> <p>The time that surfaces are left exposed must be kept to a minimum and re-vegetation should be implemented where applicable.</p> <p>The establishment of exotic flora must not be allowed and needs to be cleared as soon as practically possible where identified. This will need to be monitored by the ECO.</p> <p>Rehabilitation to affected areas through/in the wetlands will need to take place in any impacted areas in the wetlands following construction. A wetland rehabilitation plan and monitoring programme must be compiled should construction need to take</p>		
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		place in wetlands. This must be done prior to construction once final layouts are available.		
Improvement of Wetland and Riparian Habitat during Construction	Low negative	<ul style="list-style-type: none"> Removal and replacement of Alien Tree Species from Surface Water Resources <p>Identification, marking and removal of alien tree species along the tributary of the Klip River and within the channelled valley bottom wetland on site can be undertaken. Preferably in the dry winter season either, in tandem with construction activities or shortly thereafter. The higher order tree species that should be removed include <i>Eucalyptus</i> sp., <i>Quercus robur</i> and <i>Schinus molle</i>.</p> <p>The species that can be planted to replace alien species in order to create habitat along the tributary of the Klip River includes <i>Combretum erythrophyllum</i>, <i>C. imberbe</i>, <i>Rauvolfia caffra</i>, <i>Olea Africana</i> and any other species associated with watercourses in the local area.</p>	Improvement of Wetland and Riparian Habitat during Construction	Low negative
Impacts on Surface Water as a result of Increased run-off, erosion and sedimentation during construction		<ul style="list-style-type: none"> Railway Siding <p>Implementation of soft engineering structures to mitigate increased run-off and sedimentation are recommended. These can include the use of silt netting/traps and hessian sand bags (where applicable). Temporary berms to assist with the deceleration of run-off are also recommended. Importantly, run-off from the site in general must be allowed to exit the site in a controlled and diffuse</p>	Impacts on Surface Water as a result of Increased run-off, erosion and sedimentation during construction	

	Medium negative	<p>manner. Point storm water discharge is highly discouraged unless energy dissipation structures are present to decelerate run-off in downstream areas. All impacted areas must be adequately sloped to prevent onset of erosion.</p> <p>Construction close to and in the wetlands where a water use license and environmental authorisation has been obtained to do so, is to take place in the low flow season (winter months May/June/July) as far as practically possible.</p> <p>The time that surface are exposed must be kept to a minimum and re-vegetation must be implemented where applicable as soon as possible.</p> <p>The establishment of exotic flora must not be allowed and is to be cleared as soon as practically possible during construction.</p> <p>Rehabilitation to affected areas through/in the wetland and tributary of the Klip River will need to take place in any impacted areas following construction. A wetland rehabilitation plan and monitoring programme must be compiled should construction need to take place in the wetland and tributary of the Klip River. This must be done prior to construction once final layouts are available.</p>		Medium negative
Water Quality Impacts during Construction		<ul style="list-style-type: none"> Preventing Pollution of Aquatic Resources <p>All construction materials and stockpiles must be contained by bunded areas to ensure that materials are not</p>	Water Quality Impacts during Construction	

	Medium negative	<p>transported to the wetland and tributary of the Klip River located downstream of construction areas. No equipment, vehicles, stockpiles or materials are to be parked or stored within 100m of the wetland and tributary of the Klip River.</p> <p>No hazardous liquids or substances are to be stored directly in or within a distance of 100m from the wetland and tributary of the Klip River.</p> <p>All vehicles and equipment must be regularly maintained to avoid any oil, fuel or hazardous leaks or spills. Spillage clean up kits must be readily available on site should an incident occur. All leaks and spillages must be cleared as soon as practically possible.</p> <p>Solid waste must be removed on a regular basis as soon as practically possible.</p> <p>Chemical toilets must be provided and must be serviced on a regular basis. These are not to be placed within 50m of the wetland and tributary of the Klip River.</p> <p>Any contractor's camps must not be placed within or near the wetland and tributary of the Klip River.</p>		Medium negative
Storm Water Management Impacts during Operation		<ul style="list-style-type: none"> Establishment of Efficient Operational Storm Water Management Systems <p>All waste water and storm water systems must be separated. All waste water associated with the expansion must be diverted</p>	Storm Water Management Impacts during Operation	

	High negative	to the effluent treatment clarifier and must be treated to municipal standards before being released into municipal streams. The storm water management plan is to be compiled by a suitably qualified engineer. The storm water management plan must account for the separation of storm water and waste water discharge infrastructure. The storm water management system must be a closed system. The storm water management system must account for the upgrading on infrastructure in order to accommodate the separation of waste water streams from storm water streams. Additional structures, where required, are to be implemented as part of the expansion activities before the proposed expansion becomes operational (for example, attenuation ponds).		High negative
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No Go

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
Loss of job opportunities	N/A	N/A	N/A	N/A
Loss of income	N/A	N/A	N/A	N/A

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

- Air Quality Baseline Assessment Report;
- Air Quality Impact Assessment Report;
- Heritage Impact Assessment Report; and
- Surface Water Delineation and Impact Assessment Report.

Describe any gaps in knowledge or assumptions made in the assessment of the environment and the impacts associated with the proposed development.

The following assumptions, uncertainties and gaps in knowledge were encountered by the various specialists who undertook assessment as part of the proposed development:

Heritage

- Field investigations were performed on foot and by vehicle where access was readily available.
- Sites were evaluated by means of a description of the cultural landscape, direct observations and analysis of written sources and available databases.
- It was assumed that the site layout provided was accurate.
- It was assumed that the Public Participation Process (PPP) performed as part of the Basic Assessment (BA) process was sufficiently encompassing not to be repeated in the Heritage Assessment Phase.
- It is assumed that the South African Heritage Resources Information System (SAHRIS) database locations are correct.
- It is assumed that the paleontological information collected for the project is comprehensive.
- It is assumed that the social impact assessment and public participation process of the Basic Assessment will result in the identification of any intangible sites of heritage potential.
- The site exists in a highly modified state and the asphalt covered surface of the development area makes it impossible to determine whether there would be sub--surface sites present here.

Surface Water

- The study has focused on the identification, delineation and functional assessment of wetlands that are found within the proposed development site. A full delineation and mapping of all wetlands habitats in the wider area has therefore not been undertaken.
- Additionally, groundwater, hydrology, aquatic studies of fish, invertebrates, amphibians etc. have also not been included in this study.
- Much of the study area is already transformed for the existing paper mill. As a result, soils have been disturbed in most areas making it difficult for assessment the soil wetness and soil form indicators. Where these indicators were absent, professional judgement was used to inform the outer boundary of the wetland.

Air Quality

- Limited data were available on the SAAQIS for 8-houly average carbon monoxide concentrations.
- Dust Fallout monitoring results for the project site were not available, therefore the baseline dust fallout rates for the study site could not be determined.
- Mitigation measures were not modelled in the Air Quality study.
- The recommendations provided are only briefly outlined within a general context and are not compulsory.

3. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING AND CLOSURE PHASE

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the decommissioning and closure phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

Proposal (Option 2 - New Tissue Machine Building constructed on the Western side of the existing Pm3 Building)

Potential impacts:	Significance rating of impacts(positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
Impact on Heritage sites of significance during decommissioning		Should any graves be identified and need to be removed, the following procedures are required: <ul style="list-style-type: none"> • Notification of the impending removals (using English, Afrikaans and local language) 		Impact on Heritage sites of significance during decommissioning:

	Low negative	<p>media and notices at the grave site);</p> <ul style="list-style-type: none"> • Consultation with individuals or communities related or known to the deceased; • Satisfactory arrangements for the curation of human remains and / or headstones in a museum, where applicable; • Procurement of a permit from the SAHRA; • Appropriate arrangements for the exhumation (preferably by a suitably trained archaeologist) and re--interment (sometimes by a registered undertaker, in a formally proclaimed cemetery); and • Observation of rituals or ceremonies required by the families. 	Low negative	Low negative
Impact on Ambient Qir Quality as a result of Dust Fallout emissions during decommissioning	Low negative	<ul style="list-style-type: none"> • Dust emissions as a result of debris handling can be mitigated by implementing wind speed reduction techniques (windbreaks and source enclosures) and by making use of wet suppression. • Dust emissions as a result of truck transport can be mitigated by making use of wet suppression, paving and chemical stabilisation. • Dust emissions as a result of Bulldozers and Pan Scrapers can be mitigated by making use of wet suppression. • Dust emissions as a result of cut/fill material handling can be mitigated by implementing wind speed reduction techniques and by making use of wet suppression. • Dust emissions as a result of cut/fill haulage can be mitigated by implementing wind speed reduction techniques, paving by and making use of wet suppression. • Dust emissions as a result of general decommissioning activities can be mitigated by implementing wind speed reduction techniques, by 	Low negative	<p>Impact on Ambient Qir Quality as a result of Dust Fallout emissions during decommissioning:</p> <p>Low negative</p>

		<p>making use of wet suppression and by making use of permanent roads.</p> <ul style="list-style-type: none"> Dust emissions as a result of loading stockpiles can be mitigated by making use of a variable height stacker, water prays, telescopic chute with sprays and total enclosure. 		
Water Quality Impacts as a result of decommissioning activities	Medium negative	<ul style="list-style-type: none"> Preventing Pollution of Aquatic Resources <p>All construction materials and stockpiles must be contained by bunded areas to ensure that materials are not transported to the wetland and tributary of the Klip River located downstream of construction areas. No equipment, vehicles, stockpiles or materials are to be parked or stored within 100m of the wetland and tributary of the Klip River.</p> <p>No hazardous liquids or substances are to be stored directly in or within a distance of 100m from the wetland and tributary of the Klip River.</p> <p>All vehicles and equipment must be regularly maintained to avoid any oil, fuel or hazardous leaks or spills. Spillage clean up kits must be readily available on site should an incident occur. All leaks and spillages must be cleared as soon as practically possible.</p> <p>Solid waste must be removed on a regular basis as soon as practically possible.</p> <p>Chemical toilets must be provided and must be serviced on a regular basis. These are not to be placed within 50m of the wetland and tributary of the Klip River.</p>	Low negative	Water Quality Impacts as a result of decommissioning activities: Medium negative
Impacts on Surface Water as a result of Increased run-off, erosion and sedimentation during decommissioning		<ul style="list-style-type: none"> Railway Siding <p>Implementation of soft engineering structures to mitigate increased run-off and sedimentation are recommended. Run-off from the</p>		Impacts on Surface Water as a result of Increased run-off,

	Medium negative	<p>site in general must only be allowed to exit the site in a controlled and diffuse manner. Point storm water discharge is highly discouraged unless energy dissipation structures are present to decelerate run-off in downstream areas. All impacted areas must be adequately sloped to prevent onset of erosion.</p> <p>Decommissioning activities close to and in the wetlands is to take place in the low flow season (winter months May/June/July) as far as practically possible.</p> <p>The time that surface are exposed must be kept to a minimum and re-vegetation must be implemented where applicable as soon as possible.</p> <p>The establishment of exotic flora must not be allowed and is to be cleared as soon as practically possible during construction.</p> <p>Rehabilitation to affected areas through/in the wetland and tributary of the Klip River will need to take place in any impacted areas. A wetland rehabilitation plan and monitoring programme must be compiled should construction need to take place in the wetland and tributary of the Klip River.</p>	Low negative	<p>erosion and sedimentation during decommissioning:</p> <p>Medium negative</p>
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Alternative 1 (Option 1 - New Tissue Machine Building constructed on the Eastern side of the existing Pm3 Building)

Potential impacts:	Significance rating of impacts(positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
Impact on Heritage sites of significance during decommissioning		<p>Should any graves be identified and need to be removed, the following procedures are required:</p> <ul style="list-style-type: none"> Notification of the impending removals (using English, Afrikaans and local language media and notices at the grave site); Consultation with individuals or 		<p>Impact on Heritage sites of significance during decommissioning:</p> <p>Low negative</p>

	Low negative	<p>communities related or known to the deceased;</p> <ul style="list-style-type: none"> • Satisfactory arrangements for the curation of human remains and / or headstones in a museum, where applicable; • Procurement of a permit from the SAHRA; • Appropriate arrangements for the exhumation (preferably by a suitably trained archaeologist) and re--interment (sometimes by a registered undertaker, in a formally proclaimed cemetery); and • Observation of rituals or ceremonies required by the families. 	Low negative	
Impact on Ambient Qir Quality as a result of Dust Fallout emissions during decommissioning	Low negative	<ul style="list-style-type: none"> • Dust emissions as a result of debris handling can be mitigated by implementing wind speed reduction techniques (windbreaks and source enclosures) and by making use of wet suppression. • Dust emissions as a result of truck transport can be mitigated by making use of wet suppression, paving and chemical stabilisation. • Dust emissions as a result of Bulldozers and Pan Scrapers can be mitigated by making use of wet suppression. • Dust emissions as a result of cut/fill material handling can be mitigated by implementing wind speed reduction techniques and by making use of wet suppression. • Dust emissions as a result of cut/fill haulage can be mitigated by implementing wind speed reduction techniques, paving by and making use of wet suppression. • Dust emissions as a result of general decommissioning activities can be mitigated by implementing wind speed reduction techniques, by making use of wet suppression and by making use of permanent roads. 	Low negative	<p>Impact on Ambient Qir Quality as a result of Dust Fallout emissions during decommissioning:</p> <p>Low negative</p>

		<ul style="list-style-type: none"> Dust emissions as a result of loading stockpiles can be mitigated by making use of a variable height stacker, water prays, telescopic chute with sprays and total enclosure. 		
Water Quality Impacts as a result of decommissioning activities	Medium negative	<ul style="list-style-type: none"> Preventing Pollution of Aquatic Resources <p>All construction materials and stockpiles must be contained by bunded areas to ensure that materials are not transported to the wetland and tributary of the Klip River located downstream of construction areas. No equipment, vehicles, stockpiles or materials are to be parked or stored within 100m of the wetland and tributary of the Klip River.</p> <p>No hazardous liquids or substances are to be stored directly in or within a distance of 100m from the wetland and tributary of the Klip River.</p> <p>All vehicles and equipment must be regularly maintained to avoid any oil, fuel or hazardous leaks or spills. Spillage clean up kits must be readily available on site should an incident occur. All leaks and spillages must be cleared as soon as practically possible.</p> <p>Solid waste must be removed on a regular basis as soon as practically possible.</p> <p>Chemical toilets must be provided and must be serviced on a regular basis. These are not to be placed within 50m of the wetland and tributary of the Klip River.</p>	Low negative	Water Quality Impacts as a result of decommissioning activities: Medium negative
Impacts on Surface Water as a result of Increased run-off, erosion and sedimentation during decommissioning	Medium	<ul style="list-style-type: none"> Railway Siding <p>Implementation of soft engineering structures to mitigate increased run-off and sedimentation are recommended. Run-off from the site in general must only be allowed to exit the site in a controlled and diffuse manner. Point storm water</p>	Low	Impacts on Surface Water as a result of Increased run-off, erosion and sedimentation during decommission

	negative	<p>discharge is highly discouraged unless energy dissipation structures are present to decelerate run-off in downstream areas. All impacted areas must be adequately sloped to prevent onset of erosion.</p> <p>Decommissioning activities close to and in the wetlands is to take place in the low flow season (winter months May/June/July) as far as practically possible.</p> <p>The time that surface are exposed must be kept to a minimum and re-vegetation must be implemented where applicable as soon as possible.</p> <p>The establishment of exotic flora must not be allowed and is to be cleared as soon as practically possible during construction.</p> <p>Rehabilitation to affected areas through/in the wetland and tributary of the Klip River will need to take place in any impacted areas. A wetland rehabilitation plan and monitoring programme must be compiled should construction need to take place in the wetland and tributary of the Klip River.</p>	negative	ing: Medium negative
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Alternative 2

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

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| <ul style="list-style-type: none"> • Air Quality Baseline Assessment Report; • Air Quality Impact Assessment Report; • Heritage Impact Assessment Report; and • Surface Water and Wetlands Impact Assessment Report. |
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Where applicable indicate the detailed financial provisions for rehabilitation, closure and ongoing post decommissioning management for the negative environmental impacts.

N/A

4. CUMULATIVE IMPACTS

Describe potential impacts that, on their own may not be significant, but is significant when added to the impact of other activities or existing impacts in the environment. Substantiate response:

As part of the Surface Water, Air Quality and Heritage Assessments, cumulative impacts were assessed. According to the Air Quality Assessment, the construction activities associated with the proposed development would result in insignificant, minor or negligible cumulative impacts. The boiler operations and handling of coal will result in minor and negligible cumulative impacts. According to the Surface Water Assessment, the most significant cumulative impact is associated with the operation impacts related to erosion as a high cumulative impact is expected. It must be noted that the construction phase impacts have been rated as having a medium cumulative impact. In addition, the pre-construction phase impacts will have a low cumulative impact. From a Heritage perspective, the cumulative impact on all heritage significant sites was rated as being low.

The Environmental Assessment Practitioner (EAP) is of the belief that the project will result in positive cumulative impacts on a national, regional and local level as a result of increased economic output in the manufacturing sector as well as temporary and permanent job creation.

5. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that sums up the impact that the proposal and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Proposal (Option 2 - New Tissue Machine Building constructed on the Western side of the existing Pm3 Building)

It is SiVEST's opinion that the impacts associated with the proposed development are not significant enough to prevent the project from proceeding and that an Environmental Authorisation (EA) should be granted. The existing industrial infrastructure present within the study site have transformed / altered the natural character of the surrounding environment to a degree and given it a more industrial character. The proposed development also fits in with the current activities taking place on site. The impacts anticipated as a result of the proposed development are thus likely to be similar to the current impacts taking place on site as a result of the existing operations. The surrounding receptors are therefore not expected to be affected significantly as a result of the proposed development. In addition, the existing industrial infrastructure present within the study site has transformed / altered the character of the surrounding environment, giving it a more industrial character. It is therefore not expected that any natural and/or sensitive areas will be affected as a result of the proposed development. It is also important to note that the Air Quality and Heritage specialist studies have not identified any fatal flaws that could have significant implications on the proposed development and thus the anticipated impacts are considered to be insignificant. In addition, the impact assessments conducted for the Air Quality and Heritage specialist studies revealed that the anticipated impacts of the proposed expansion of Twinsaver's Kliprivier site are rated as being negative and low. However, majority of the surface water impacts associated with the proposed development were rated as having medium negative significance prior to the implementation of mitigation measures. The greatest anticipated impact from a surface water perspective was deemed to be the storm water management impacts, as this was found to have a high negative significance rating prior to the implementation of mitigation measures. All of the identified surface water impacts can however be reduced to a low negative significance rating after the implementation of mitigation measures. SiVEST is therefore of the opinion that the impacts associated with the

construction and operation phases can be mitigated to acceptable levels provided the recommended mitigation measures are implemented.

Alternative 1 (Option 1 - New Tissue Machine Building constructed on the Eastern side of the existing Pm3 Building)

It is SiVEST's opinion that the impacts associated with the proposed development are not significant enough to prevent the project from proceeding and that an Environmental Authorisation (EA) should be granted. The existing industrial infrastructure present within the study site have transformed / altered the natural character of the surrounding environment to a degree and given it a more industrial character. The proposed development also aligns with the current activities taking place on site. The impacts anticipated as a result of the proposed development are thus likely to be similar to the current impacts taking place on site as a result of the existing operations. The surrounding receptors are therefore not expected to be affected significantly as a result of the proposed development. In addition, the existing industrial infrastructure present within the study site has transformed / altered the character of the surrounding environment, giving it a more industrial character. It is also important to note that the Air Quality and Heritage specialist studies have not identified any fatal flaws that could have significant implications on the proposed development and thus the anticipated impacts are considered to be insignificant. In addition, the impact assessments conducted for the Air Quality and Heritage specialist studies revealed that the anticipated impacts of the proposed expansion of Twinsaver's Kliprivier site are rated as being negative and low. However, majority of the surface water impacts associated with the proposed development were rated as having medium negative significance prior to the implementation of mitigation measures. The greatest anticipated impact from a surface water perspective was deemed to be the storm water management impacts, as this was found to have a high negative significance rating prior to the implementation of mitigation measures. All of the identified surface water impacts can however be reduced to a low negative significance rating after the implementation of mitigation measures. SiVEST is therefore of the opinion that the impacts associated with the construction and operation phases can be mitigated to acceptable levels provided the recommended mitigation measures are implemented.

It is however important to note that according to GDARD, Option 1 would negatively affect one (1) natural and/or sensitive area, namely the Kliprivier River (which is situated adjacent to the existing Kliprivier Paper Mill). According to the comments GDARD have provided on the DBAR which was submitted, should development take place within 32m of the Kliprivier River, Fauna and Avifauna assessments / studies would need to be undertaken. Since Option 1 would result in development taking place within 32m of the Kliprivier River, these assessments / studies will need to be undertaken should this option be considered / proposed as the preferred location for the new Tissue Machine Building. Twinsaver will not be considering Option 1 as a preferred location for the new Tissue Machine Building and will only be considering this option as a layout alternative (i.e. Alternative 1). Therefore, it is no longer necessary to undertake Fauna and Avifauna assessments / studies. Option 2 is therefore being considered / proposed as the only preferred location for the new Tissue Machine Building (i.e. the proposal) at this stage and Option 1 will be avoided.

Alternative 2

No-go (compulsory)

The "no-go" option is the option of not undertaking the proposed development. The development is being proposed in order to improve and expand the current tissue manufacturing capacity at Twinsaver's existing Kliprivier site. The proposed development will therefore increase the extent of operations on site, as well as improve the productivity and efficiency of the current operations. The proposed development is therefore considered to be

in the best interest of Twinsaver, possibly decreasing production costs and increasing profits. This will have a positive impact on employees at Twinsaver, the local municipality and EMM. In SiVEST's opinion, the only reason for not proceeding with the proposed development would be as a result of the project not being considered feasible by Twinsaver. In addition, Twinsaver could also decide not to proceed with the proposed development should a different and/or improved process for expanding the tissue manufacturing capacity be favoured.

6. IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE

For proposal (**Option 2 - New Tissue Machine Building constructed on the Western side of the existing Pm3 Building**):

The impact assessment for both the Heritage and Air Quality Assessments revealed that the impacts for the preferred option (i.e. Option 2) are rated as being negative and low. The anticipated impacts are therefore considered to be of low significance and would not have any detrimental effects on the surrounding environment, communities or heritage sites. Furthermore, the impacts on air quality are short term and limited to the period of construction. The surface water impacts associated with the proposed development were rated as having medium negative significance prior to the implementation of mitigation measures. It is important to note that the greatest anticipated impact from a surface water perspective would be the storm water management impacts, as this was found to have a high negative significance rating prior to the implementation of mitigation measures. All of the identified surface water impacts are however expected to have low negative significance rating after the implementation of mitigation measures. From a heritage point of view, It was found that Option 2 would not have any detrimental effect on the heritage value of the study area. With regards to air quality, Option 2 is not preferred in terms of ambient air quality impacts. However, this option is associated with a low negative impact. From a surface water perspective, most existing infrastructure and buildings are positioned outside of the identified wetland. Nonetheless, many of the proposed expansion components will fall either directly within or within 32m proximity of the identified wetland and tributary of the Klip River for both alternative options. It was deemed that Option 2 would be the preferred option (proposal). This is due to the fact that the placement of the LPG storage facility in Option 1 is required within the wetland which will result in a higher and long term direct impact. Alternatively, the placement of the LPG storage facility in Option 2 is sufficiently distanced from both the wetland and the tributary of the Kliprivier River. In addition, much of the proposed expansion area is on already transformed areas which are located away from the identified wetland. It is however important to note that GDARD have recently provided comments on the DBAR which was submitted and have indicated that should development take place within 32m of the Kliprivier River, Fauna and Avifauna assessments / studies would need to be undertaken. As such, Twinsaver have subsequently decided to exclude Option 1 as a layout alternative as this option would result in development taking place within 32m of the Kliprivier River. GDARD would thus require Twinsaver to undertake Fauna and Avifauna assessments / studies should Option 1 still be considered / proposed by Twinsaver. As such, only one (1) possible location for the new Tissue Machine Building is being considered / proposed at this stage (namely Option 2) and no layout alternatives are therefore being considered / proposed as part of the proposed development.

For alternative (**Option 1 - New Tissue Machine Building constructed on the Eastern side of the existing Pm3 Building**):

The Impact Assessment for both the Heritage Impact Assessment and Air Quality Impact Assessment revealed that the impacts for the alternative (i.e. Option 1) are rated as being negative and low. The anticipated impacts are therefore considered to be of low significance and would not have any detrimental effects on the surrounding environment, communities or heritage sites. Furthermore, the impacts on air quality are short term and limited to the period of construction. The surface water impacts associated with the proposed development were

rated as having medium negative significance prior to the implementation of mitigation measures. It is important to note that the greatest anticipated impact from a surface water perspective would be the storm water management impacts, as this was found to have a high negative significance rating prior to the implementation of mitigation measures. All of the identified surface water impacts are however expected to have low negative significance rating after the implementation of mitigation measures. From a heritage point of view, It was found that option 1 would not have any detrimental effect on the heritage value of the study area. With regards to air quality, Option 1 (the alternative) is preferred in terms of ambient air quality impacts. In addition, this option is associated with a low negative impact. From a surface water perspective, most existing infrastructure and buildings are positioned outside of the identified wetland. Nonetheless, many of the proposed expansion components will fall either directly within or within 32m proximity of the identified wetland and tributary of the Kliprivier River for both alternative options. It was deemed that Option 1 would be the not preferred option and is therefore regarded as the alternative. This is due to the fact that the placement of the LPG storage facility in Option 1 is required within the wetland which will result in a higher and long term direct impact. Despite the fact that Option 1 (the alternative) is considered to be the preferred option from an air quality perspective, the anticipated impacts associated with Option 2 are considered to be insignificant and therefore Option 2 can still be regarded as the preferred option / proposal.

It is however important to note that according to GDARD, Option 1 would negatively affect one (1) natural and/or sensitive area, namely the Kliprivier River (which is situated adjacent to the existing Kliprivier Paper Mill). According to the comments GDARD have provided on the DBAR which was submitted, should development take place within 32m of the Kliprivier River, Fauna and Avifauna assessments / studies would need to be undertaken. Since Option 1 would result in development taking place within 32m of the Kliprivier River, these assessments / studies will need to be undertaken should this option be considered / proposed as the preferred location for the new Tissue Machine Building. Twinsaver will not be considering Option 1 as a preferred location for the new Tissue Machine Building and will only be considering this option as a layout alternative (i.e. Alternative 1). Therefore, it is no longer necessary to undertake Fauna and Avifauna assessments / studies. Option 2 is therefore being considered / proposed as the only preferred location for the new Tissue Machine Building (i.e. the proposal) at this stage and Option 1 will be avoided

Having assessed the significance of impacts of the proposal and alternative(s), please provide an overall summary and reasons for selecting the proposal or preferred alternative.

As previously mentioned, two (2) possible locations for the new Tissue Machine Building have been assessed, namely Option 1 and Option 2. It is however important to note that GDARD have provided comments on the DBAR which was submitted and have indicated that should development take place within 32m of the Kliprivier River, Fauna and Avifauna assessments / studies would need to be undertaken. Due to the fact that Option 1 will result in development taking place within 32m of the Kliprivier River, Twinsaver have subsequently decided not to consider Option 1 as a preferred location for the new Tissue Machine Building and will only be considering this option as a layout alternative (i.e. Alternative 1). Option 2 is therefore being considered / proposed as the only preferred location for the new Tissue Machine Building (i.e. the proposal) at this stage. Option 1 has however not been excluded as a possible location for the new Tissue Machine Building as Twinsaver want to show that all possible alternatives have been assessed accordingly. As such, Option 2 will be regarded as the preferred alternative / proposal with regards to the proposed development.

In addition, the proposal / preferred location of the new Tissue Machine Building (i.e. Option 2) was chosen by Twinsaver due to the following reasons:

- It is closer to the point of supply of main raw material, namely the pulp stock;
- It is located further from the Kliprivier River 100 year flood line;

- It is located further from the Kliprivier River which is located adjacent to the Kliprivier Paper Mill;
- It is located further from the watercourse that runs through the Kliprivier site (namely the tributary known as the Kok's River);
- The construction activities associated with the proposed development will be less disruptive to the existing operations currently taking place within the Kliprivier site; and
- It will be possible to add another tissue machine alongside this location in the future, should Twinsaver wish to do so.

7. SPATIAL DEVELOPMENT TOOLS

Indicate the application of any spatial development tool protocols on the proposed development and the outcome thereof.

The latest version (2015) of the Ekurhuleni Metropolitan Municipality's Regional Spatial Development Framework (RSDF) for Region F was used to investigate whether any spatial development tool protocols would be applicable for the proposed development. According to the RSDF for Region F, the City of Johannesburg Metropolitan Municipality (CoJ) forms the western boundary and the Midvaal Local Municipality forms the southern and western boundary of Region F. Development in these neighbouring municipalities is expected to impact on Region F.

The Midvaal Local Municipality forms the southern boundary of Region F and extends to the Vaal Marina on the Vaal Dam to the south. The municipality relies heavily on its industrial developments along the R59 motorway together with the tourism opportunities on the Vaal Dam. The area within the Midvaal Local Municipality which is considered to be the most related to Region F of the Ekurhuleni Metropolitan Municipality is the most northern part of the R59 development corridor which can be found adjacent to the existing Twinsaver Kliprivier site. This area is already extensively developed but still has substantial development opportunity and growth potential. One of the Strategic Development Principles which has been identified in the Midvaal Local Municipality's SPF includes the establishment of a development corridor along the R59 freeway which is expected to have an impact on the proposed study site. The Midvaal Local Municipality are planning on promoting the development of a diverse range of industrial and commercial activities along this R59 development corridor. The proposed development is therefore expected to form part of the R59 development corridor as the activities proposed are align with the objectives of this development corridor.

It should be noted that according to the RSDF for Region F of the Ekurhuleni Metropolitan Municipality, some of the roles of Region F are to retain the existing industrial development as well as to support the promotion of new development areas in suitably located areas close to the main access corridors. Furthermore, some of the functions of Region F are to maximize industrial potential within the existing Wadeville, Alrode and Roodekop facilities, as well as to establish possible extensions to these facilities to enhance future growth. The proposed development is therefore expected to contribute to these above-mentioned roles and functions of Region F and will help achieve the goals / aims / targets set out by the RSDF.

The 2015 Regional Spatial Development Framework (RSDF) for Region F of the Ekurhuleni Metropolitan Municipality has been provided as Appendix I8.

8. RECOMMENDATION OF THE PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the Environmental Assessment Practitioner as bound by professional ethical standards and the code of conduct of EAPASA).

YES/

If "NO", indicate the aspects that require further assessment before a decision can be made (list the aspects that require further assessment):

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

- Emissions monitoring on the units should be conducted regularly (annual basis) in order to check the efficiency of the boiler operation and the control device;
- Frequent maintenance checks should be conducted on all facilities on site;
- All fuel and oil leaks / spillages must be cleaned and disposed of appropriately as soon as practically possible;
- The new boiler should be fitted with modern high efficiency multi-cyclone devices.
- Avoid the identified watercourses (namely the Kliprivier River, Kok's River and the channelled valley bottom wetland) as far as possible;
- The watercourses identified on site should be demarcated and/or cordoned off;
- No excavation activities are to be undertaken within the identified watercourses on site;
- A Storm Water Management Plan (SWMP) must be implemented and regularly monitored to ensure effectiveness; and
- The operation of the facility must comply with the requirements of the Occupational Health and Safety Act (1993) (Act No. 83 of 1993).

9. THE NEEDS AND DESIREBILITY OF THE PROPOSED DEVELOPMENT (as per notice 792 of 2012, or the updated version of this guideline)

The proposed development is regarded as a necessity by Twinsaver (i.e. the client) as it is required in order to improve and expand current manufacturing capacity at one of their existing manufacturing sites. The proposed development is aimed at increasing the extent of operations on site, as well as improving the productivity and efficiency of the current operations. The proposed development is therefore considered to be beneficial for the client as it has the potential to improve production and efficiency, thus possibly decreasing production costs and increasing profits. In addition, the proposed development is expected to contribute positively to the manufacturing / industrial sector of the local municipality and in turn contribute to the economy in the region. The proposed development is also considered to be desirable to the local municipality as the surrounding communities will be able to benefit directly and indirectly from the development as a result of factors such as increased job opportunities. The Midvaal Local Municipality are planning on promoting the development of a diverse range of industrial and commercial activities along the R59 near the Kliprivier site. This is known as the R59 development corridor. The proposed development is therefore desirable as it will form part of the industrial development along the R59 development corridor. Additionally, some of the roles highlighted in the RSDF of Region F are to retain the existing industrial development as well as to support the promotion of new development areas in suitably located areas close to the main access corridors. Furthermore, some of the functions of Region F are to maximize industrial potential within the existing Wadeville, Alrode and Roodekop facilities, as well as to establish possible extensions to these facilities to enhance future growth. The proposed development is therefore expected to contribute to these above-mentioned roles and functions of Region F and will help achieve the goals / aims / targets set out by the RSDF.

10. THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED (CONSIDER WHEN THE ACITIVITY IS EXPECTED TO BE CONCLUDED)

Construction is expected to last approximately 12 months, from the start of construction to the final installation of the machinery. Environmental Authorisation (EA) is therefore required for the period of **October 2016, and extending for a period of three (3) years.**

11. ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) (must include post construction monitoring requirements and when these will be concluded.)

If the EAP answers "Yes" to Point 7 above then an EMP is to be attached to this report as an Appendix

EMPr attached

YES/

A Draft EMPr has been attached as Appendix H.

SECTION F: APPENDIXES

The following appendixes must be attached as appropriate (this list is inclusive, but not exhaustive):

It is required that if more than one item is enclosed that a table of contents is included in the appendix

Appendix A: Site plan(s) – *(must include a scaled layout plan of the proposed activities overlain on the site sensitivities indicating areas to be avoided including buffers)*

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Route position information

Appendix E: Public participation information

Appendix F: Water use license(s) authorisation, SAHRA information, service letters from municipalities, water supply information

Appendix G: Specialist reports

Appendix H: EMPr

Appendix I: Other information

CHECKLIST

To ensure that all information that the Department needs to be able to process this application, please check that:

- Where requested, supporting documentation has been attached;
- All relevant sections of the form have been completed.

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