



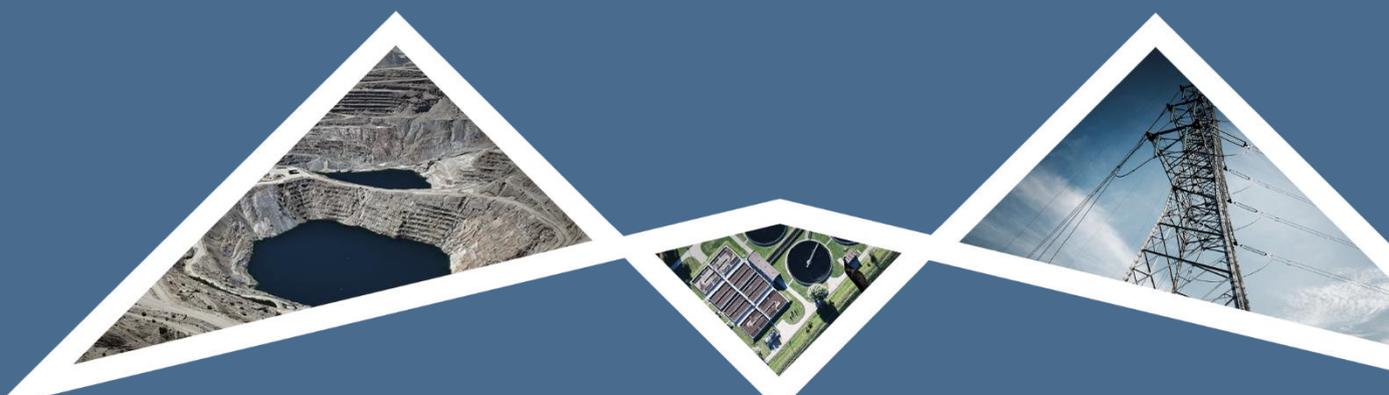
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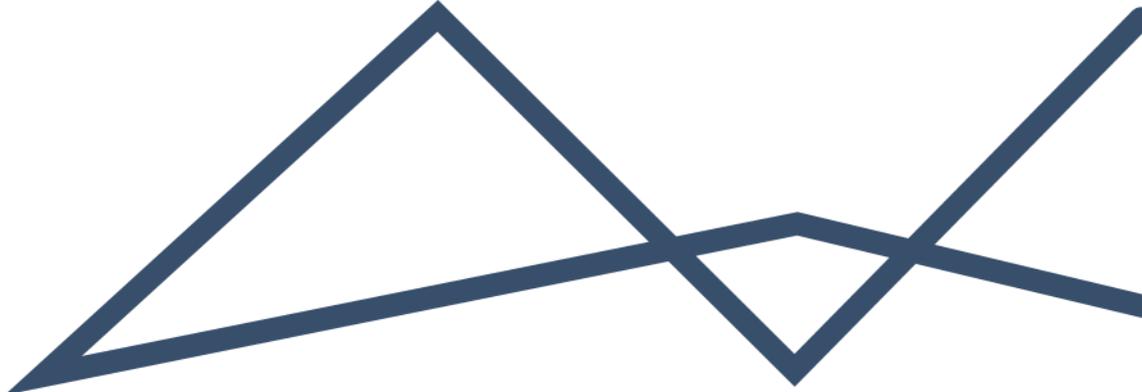
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BASIC ASSESSMENT REPORT

PROPOSED EXPANSION OF THE PLATINUM GROUP METALS (PGM)
REFINING LINE, FOR KUSASA REFINING.

GAUT REF#: 002/25-26/E0277





EIMS REFERENCE: 1739
DOCUMENT TITLE: BASIC ASSESSMENT

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REVISION AND AMENDMENTS

REVISION DATE:	REV #	DESCRIPTION
2026/03/18	ORIGINAL DOCUMENT	Basic Assessment Report for Public Review

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SECTION A: ACTIVITY INFORMATION

1. PROPOSAL OR DEVELOPMENT DESCRIPTION

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

Proposed Expansion of the Platinum Group Metals (PGM) Refining Line, for Kusasa Refining.

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?

<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
---	-----------------------------

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

The activity falls under NEM:AQA Listed Activity Category 4, Subcategory 4.17: Precious and base metal production and refining through chemical treatment. An amendment to the existing AEL is required and is currently being undertaken.

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

<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO

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

BACKGROUND TO THE EXISTING AND PROPOSED ACTIVITY

Plant & Process Context:

The existing operation at Kusasa is used for the refining of metallic precious metal bars, principally containing Silver (Au) and Gold (Ag). To date Precious Group Metals (PGMs) were agglomerated only and resold as encountered, but economic opportunity exists for the additional refining of these PGMs, thus the motive to install the PGM processing line of equipment. Kusasa is in possession of a Waste management Licence (WML-12/9/11/L200210120254/3/V) and an Air Emissions Licence (AEL- 14/1/1/7/8/188/Kusasa/ Wadeville/ ALB).

Infrastructure-wise the current facility can comfortably and securely house both the existing process equipment and the proposed ancillary PGM equipment. It should be noted that both the current and additional equipment lines use the same process, i.e. aqua regia refining and subsequent selective precipitation of the desired metals. The equipment installations are not exclusive to only Au/Ag or PGMs but serves to provide the technical flexibility needed via multiple mixer tank units as well as operational continuity through the provisioning of the titanium aqua regia reactor. The PGMs also melt at higher temperatures than the typical Au-Ag-Cu bars historically processed, so an induction melter that can accommodate this higher temperature is becoming part of the proposed equipment suite.

The refining process includes both a thermal component as well as a chemical component. Both of these generate air emissions. The facility has existing abatement systems which function to clean the air prior to release to the atmosphere. The abatement systems (baghouse, 2x interior pre-scrubbers, and main wet scrubber) can be used as is, even though the PGM line boasts its own additional pre-scrubber as well to ensure proper emission treatment.

The refining process generates a liquid chemical waste stream. In order to condition and treat these liquid wastes so they can be safely stored and removed by licensed waste contractors the facility has an existing effluent treatment plant. The existing effluent plant is buffered with an additional filter press and neutralization tank for operational efficiency to get the correct-pH effluents to the storage tanks for removal by waste contractors. The existing effluent treatment plant does not require further expansion or upgrading to be able to accommodate the proposed new PGM line.

The established waste management practices, hazardous chemicals handling methods, and sensor systems will remain enforced to ensure that the PGM line enjoys the same levels of care, safety and compliance as has been characteristic of the older processing line since commencement.



Please note that the existing stacks will be raised nominally. This will further improve the air dispersion potential.

Process Description

The process for refining precious metals (PMs) focuses on gold, silver, and the following proposed PGMs refining: platinum, palladium, rhodium, iridium, and ruthenium. The process-intent is to, in an economically efficient and environmentally conscious manner, separate these elements into saleable products into both the local and international markets. Depending on the element the saleable product might be a refined bullion bar, pure powder, metal-salt powder or sludge(s).

The process commences with the raw material obtained in the form of a crude impure bar containing the PMs and other dilutants from suppliers' processes like copper, zinc, iron and others. It is noted that the facility is also licenced to accept other raw material inputs. The bars are accepted with full documentation, weighted, classified and sampled. The samples are processed, typically in-house, with the standard fire assay and ICP processes that's already in use to obtain accurate indicators of the bars' precious metal contents. The sampled bars are grouped and aggregated until a production-ready batch is formed.

For PGM-containing batches, the production size will be such that the volume is compatible with all unit process as well as regulatory limits imposed by the existing AEL. The production batch is first granulated in a high-temperature induction melter. The granulated metal grain/flake is fed into an existing acid tank that aims to dissolve the contained silver, palladium and base metals, leaving the gold and other PGMs as undissolved solids. The resultant solution is mixed with another acid to precipitate silver-cement as a product to be filtered out. The silver sediment proceeds to an existing silver processing circuit where it is processed to nearly pure metallic silver powder. This powder is melted into silver bars and introduced to the electrowinning cell(s) for further refining to 99.99% pure silver crystals for melting, sampling and sale.

The acid solution that previously would've only been neutralized, filtered for copper sludge, and stored for collection by waste contractor, is now further treated with organic complexing agent in a mixing tank to create a yellow palladium precipitation salt to be recovered via filtering. The filtered salt is heated in the existing roasting/calcing muffle furnace. The roast drives off the organics, moisture and chlorides to leave a crude palladium sponge that is melted in the current induction melter and cast into a pure bullion bar for sampling and sale.

The undissolved solids from parting step is fed into an aqua regia reactor for dissolution. After 6 hours the tank is emptied onto a filter. Iridium and ruthenium remains undissolved whereas the gold, platinum and rhodium will be dissolved. The iridium and ruthenium are oxidized in the roasting muffle furnace to produce compounds that can be subsequently dissolved in aqua regia. The aqua regia solution from the reactor proceeds to mixer tank for conditioning before gold precipitation. The conditioned solution is mixed with a reductant, facilitating the precipitation of suspended metallic gold particles. The gold powder is filtered out, washed, dried and melted into pure bullion bars for sampling and sale.

The filtered solution proceeds to a subsequent mixer tank for pH conditioning and concentration prior to platinum precipitation. The resultant platinum salt solid is filtered out, washed, and heated in the roasting muffle furnace. A platinum sponge is obtained that is melted in a high-temperature induction furnace to yield a bullion bar for sampling and sale.

At this stage rhodium, iridium and ruthenium are still in solution for recovery. A mixer tank is used to contact the solution with a strong alkaline base causing rhodium-hydroxide to precipitate out as a solid. The sediment is filtered, washed, and heated in the muffle furnace to yield a rhodium-rich sponge for melting, sampling and sale.

Iridium is dropped from solution to produce an iridium precipitate. This salt is filtered out, washed, and heated in the muffle furnace to yield a crude iridium sponge. The powder product is sampled and stored as-is for sale.

The solution is then mixed and conditioned to favour the formation of ruthenium-hydroxide precipitate. This brown-black salt is filtered, washed and heated in the roasting muffle furnace to yield a crude ruthenium-oxide sponge for sampling and sale.

The now-barren solution is lastly mixed with zinc powder to ensure all remaining trace precious metals are cemented out of solution prior to the liquid proceeding to the effluent treatment circuit. The solution is neutralised resulting in copper (and other base metals if present) precipitating out as hydroxides in sludge form. This sludge is separated from the effluent with a filter press, recovered and stored for offtake into the market. The effluent is stored in tanks for removal by accredited and registered waste contractors for responsible treatment and disposal.

Equipment Specifications

The existing gold and silver process line already includes equipment identical or at least similar in function to those required for the PGM line. Equipment pieces listed below in Table 1.



Table 1: Existing process equipment.

Equipment Name	Qty	Supplier	Description of Relevance to Process	Specification
Induction melters	3	MUR / Italimpianti	Required to melt the charge material. Then to be either cast into granulation unit for granulation or into moulds for bars. **Existing melters do not reach desired PGM melting temperature.	Input Max. power: 60 kW, 3 phase 380V Melting Capacity: 20-40kg
Granulation unit	1	Italimpianti	Jet-spray unit to break molten stream of metal into fine gran/flake – increasing surface area for better acid dissolution.	0.75 kW
Muffle furnace	2	Talfurnco	Slow batch melts and oxidation reactions for roasting.	3 kW
Cooling Towers	2	MUR	Feeds continuous cold water to induction melter coils.	0.55 kW
Chiller	1	Thermochill	Feeds continuous cold water to induction melter coils.	6.5 kW
Filter units	4	Italimpianti	Separates liquids from solids are the various mixer tanks and reactors.	Compressed air pressure 4 to 8 bar, consumption 150 to 420l/min
Resin effluent unit	1	Italimpianti	Last effluent precious metal trace recovery after zinc cementation prior to neutralisation.	1 kW
Neutralization tank	1	Italimpianti	Facilitates effluent pH adjustment and copper sludge precipitation.	1.44 kW
Filter press	1	Italimpianti	Separates neutralisation sludges from effluent stream prior to storage and disposal.	0.2 kW
Main wet scrubber	1	SG Plastics	Treats all chemical fumes from process to clean the air. Connected to all pre-scrubbers as additional air cleaning.	23 kW
Baghouse	1	CFW	All hot processes' air and emissions proceed to the baghouse filter unit to remove from air stream before release to ambient environment.	15 kW; 8 bags; 900 mm diameter fan
Compressor	1	CompAir	Provides compressed air for all diaphragm pumps in the plant (used to transfer liquids between tanks).	15 kW
Polypropylene aqua regia reactor tanks (BR800)	1	Italimpianti	Serves as aqua regia reactor. Primary acid dissolutions step to get the metals into solution and facilitate separation.	1 kW; 500 litres



Equipment Name	Qty	Supplier	Description of Relevance to Process	Specification
Polypropylene aqua regia reactor tanks (BR100)	1	Italimpianti	Serves as aqua regia reactor. Primary acid dissolutions step to get the metals into solution and facilitate separation.	1 kW; 100 litres
Caustic prescrubber	2	Italimpianti	First wet scrubbing process to treat process emissions from PGM line. Merges into primary scrubbing for additional emission treatment.	3 kW
Electrowinning cells	1	SG Plastic	Electrochemical purification unit for crude silver into pure silver crystals.	0-12 V, 500-amp rectifier, Cell capacity 450 l. Additional cells 1 kW, single phase 220 V
Mixer tanks	3	Italimpianti	Used for the various precipitation steps of the process to drop desired metals from solution as solids/salts/powders.	1.5 kW

New equipment related to the PGM process line introduction at Kusasa Refining's Wadeville premises are presented in Table 2.

Table 2: Proposed new PGM line equipment specifications.

Equipment Name	Qty	Supplier	Description of Relevance to Process	Specification
Induction melter	1	Superbmelt	Required to melt the PGM containing charge material. Then to be either cast into granulation unit for granulation or into moulds for bars. **Existing melter does not reach desired PGM melting temperature.	Input Max. power: 45 kW, 3 phase 380 V Oscillation frequency: 1K~20Khz Melting Capacity: 20 kg
Granulation unit	1	Process Makina	Jet-spray unit to break molten stream of metal into fine gran/flake – increasing surface area for better acid dissolution.	Stainless steel containers with fixtures for gas flames and graphite crucibles.
Titanium reactor tank	1	Process Makina	Serves as both the nitric acid parting reactor and additional aqua regia reactor. Primary acid dissolutions steps to get the metals into solution and facilitate separation.	50 kg max gross weight per production batch
PGM unit prescrubber unit	1	Process Makina	First wet scrubbing process to treat process emissions from PGM line. Merges into primary scrubbing for additional emission treatment.	2 kW
Mixer tanks	6	Process Makina	Used for the various precipitation steps of the process to drop desired metals from solution as solids/salts/powders.	500 litres capacity; 600x600 mm floor area each 5 kW



Equipment Name	Qty	Supplier	Description of Relevance to Process	Specification
Chiller	1	Superbmelt	Cooling water unit to assist temperature management and regulation at the induction melter and the titanium reactor.	Compressor power: 7.5 kW Cooling capacity: 28.1 kW 24089 Kcal/h Water tank Capacity: 180 litre Power: 3 phase 380 V
Neutralisation tank	1	Process Makina	Used as additional effluent treatment unit where ammonium-hydroxide additions are done.	10 kW; 3-phase
Filter units	6	Process Makina	Used at each of the mixer tanks and reactors to filter the solids out from the liquids.	Mobile roller filter units
Vacuum pump	1	Process Makina	Linked to reactors and filter units to facilitate liquid flow via pressure differential.	Compressed air pressure 4 to 8 bar, consumption 150 to 420 l/min
Decanter centrifuge	1	Process Makina	Used to dry sponges and powders from the precipitation processes prior to thermal decomposition, storage or melting.	7.5 kW; 3-phase

Monthly Chemical Volume Changes

Table 3 lists the chemical stock and expected volume changes. These additional quantities are theoretical **estimates** based on initial chemical mass balances done in the absence of practical test work.

Table 3: Predicted chemical volume changes.

Chemical Name	New or Existing	Molecular Formula	Wastes / Emissions	Process Significance	Current Volumes per Month	Additional Volumes per Month
Hydrochloric Acid	Existing	HCl	HCl fumes Chlorine gas (Cl _{2(g)})	Part of aqua regia, primary ligand for PM complexing	1100 litres	2160 litres
Nitric Acid	Existing	HNO ₃	NO _x fumes	Part of aqua regia, primary oxidizer to get metals into solution	670 litres	3110 litres
Sodium Hydroxide (flakes)	Existing	NaOH	Hydroxide solids	Strong pH adjuster and precipitation capabilities for base metals	590 kg	70 kg



Chemical Name	New or Existing	Molecular Formula	Wastes / Emissions	Process Significance	Current Volumes per Month	Additional Volumes per Month
				and certain PMs		
Sodium Hydroxide (lye solution)	Existing	NaOH	Hydroxide solids	Strong pH adjuster and precipitation capabilities for base metals and certain PMs	670 litres	200 litres
Sodium Metabisulfite	Existing	Na ₂ S ₂ O ₅	Sulphur dioxide (SO _{2(g)})	Reducing agent for Au precipitation	370 kg	250 kg
Dimethylglyoxime	New	C ₄ H ₈ N ₂ O ₂	Ammonia (NH _{3(g)})	Complexing agent for Pd reduction and precipitation	n/a	230 kg
Ammonium Chloride	New	NH ₄ Cl	Ammonia (NH _{3(g)})	Primary reducing agent for Pt and Ir salt precipitation	n/a	50 kg
Sodium Peroxide	New	Na ₂ O ₂	n/a	Oxidiser and fusion agent for Ir and Ru solids under roasting conditions	n/a	70 kg
Hydrogen Peroxide	New	H ₂ O ₂	n/a	Oxidative additive to aqua regia reactions	n/a	150 litres
Urea	Existing	CH ₄ N ₂ O	n/a	Binds free nitric acid prior to Au precipitation	150 kg	50 kg
Dextrose	Existing		n/a	Part of the silver-chloride reduction process	35 kg	10 kg
Borax	Existing		Slags	Melt addition for slag formation and oxide capture	60 kg	25 kg
Soda Ash	Existing		Slags	Reductive addition to melts, specifically Ag and to increase slag properties	25 kg	10 kg
Sodium Hydrosulphide	Existing		n/a	Addition to primary scrubber to effectively capture NO _x fumes in the air stream into solution	110 kg	50 kg



Chemical Name	New or Existing	Molecular Formula	Wastes / Emissions	Process Significance	Current Volumes per Month	Additional Volumes per Month
Zinc Powder	Existing	Zn	n/a	Less noble PM cementing agent to recover traces from solution before effluent treatment	50 kg	20 kg
Ethanol	New	C ₂ H ₅ OH	Ethanol vapour	Solvent addition to allow Ru precipitation via NaOH	n/a	100 litres

The mass balances evaluated for the initial chemical consumption estimations are based on the following assumptions:

- 40 kg gross weight per production batch pre-parting (seeing as this weight is the max granulation weight typically added for effective processing) – this equates to about 300 litres of diluted nitric acid in the parting tank which has a 150-litre capacity, meaning half a production parting every day.
- A PGM production will happen every 2nd day initiating approximately 10 PGM production runs per month (based on estimated metal sourcing patterns from suppliers)
- Inquartation parameters are aimed to reach a cumulative silver, palladium and copper content of 70 % and getting gold content below 25 % (by weight)
- Average purchased acid concentrations for hydrochloric- and nitric acid are 33 % and 65 %, respectively
- An average assumed production batch may have a chemical metal composition similar to the that presented in Table 4:

Table 4: Assumed production batch chemical composition.

Elements	Assay	Grams	Kilograms
Au	30.0%	12000	12.0
Ag	12.0%	4800	4.8
Pt	12.0%	4800	4.8
Pd	12.0%	4800	4.8
Rh	5.0%	2000	2.0
Ru	9.0%	3600	3.6
Ir	3.0%	1200	1.2
Cu	13.0%	5200	5.2
Zn	4.0%	1600	1.6
Total:	100.0%	40000	40.0



PGM Process Flow Diagram

Figure 1 presents the integrated process flow for the facility. This clearly defines the existing processes as well as the proposed new PGM line processes, which are the subject of this application.



1 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
GN R983 (Listing Notice 1): Activity 34: The expansion of existing facilities where such expansion results in the need for an amended permit or licence governing emissions.	Provincial: Gauteng Department of Environment	Published under Government Notice R983 in Government Gazette 38282 of 4 December 2014 and amended by: <ul style="list-style-type: none"> - GN 327 GG 40772 20170407 w.e.f. 7 April 2017 - GN 706 GG 41766 20180713 w.e.f. 13 July 2018 - GN 517 GG 44701 20210611 w.e.f. 11 June 2021, unless otherwise indicated
Listed activities and associated minimum emission standards identified in terms of section 21 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) - GN 893/2013: Activity 4.17: Precious and base metal production and refining. The production or processing of precious and associated base metals through chemical treatment	Local: City Of Ekurhuleni Department of Health and Social Development Environmental Health Division	Published under Government Notice 893 in Government Gazette 37054 of 22 November 2013 and amended by: <ul style="list-style-type: none"> - Gen N 551 GG 38863 2015/06/12 - GN 1207 GG 42013 2018/10/31 - GN 687 GG 42472 2019/05/22 - GN 421 GG 43174 2020/03/27

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

Legislation, policy of guideline	Description of compliance
NEMAQA: Requirement for amendment to AEL	An application for amendment to the facility's existing AEL (Ref: 14/1/1/7/8/188/Kusasa/Wadville/ALB) has been submitted to the competent authority. The adjudication and further processing of such is contingent on the issuance of the EA to which this application relates.

2 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

The identification of alternatives is a key aspect of the success of the impact assessment process. All reasonable and feasible alternatives must be identified and screened to determine the most suitable alternatives to consider and assess. There are, however, some significant constraints that have to be taken into account when identifying alternatives for a project of this scope. Such constraints include social, financial and environmental issues, which will be discussed as part of the evaluation of the alternatives for this project. Alternatives can typically be identified according to:

- Location alternatives (including design and layout);
- Scheduling alternatives;
- Process alternatives;
- Technology alternatives; and
- Activity alternatives (including the No-Go option).

For any alternative to be considered feasible, such an alternative must meet the need and purpose of the development proposal without presenting significantly high associated impacts.

Alternatives can further be distinguished into discrete or incremental alternatives. Discrete alternatives are overall development options, which are typically identified during the pre-feasibility, feasibility and or scoping phases of the EIA process. Incremental alternatives typically arise during the EIA, or in this case the Basic Assessment, process and are usually suggested as a means of addressing identified impacts. These alternatives are closely linked to the identification of mitigation and management measures and are not specifically identified as distinct alternatives. The table below provides information on the Project's location, process, technology and activity alternatives considered and assessed.

The "No Go" or "No Action" alternative refers to the alternative of not embarking on the proposed project at all. It assumes that the activity does not go ahead, implying a continuation of the current situation or the status quo. It is important to note that the No Go alternative is the baseline against which all other alternatives and the development proposal are assessed. When considering the No Go alternative, the impacts (both positive and negative) associated with any other specific alternative, or the current project proposal would not occur and in effect the impacts of the No Go alternative are therefore inadvertently assessed by assessing the other alternatives. In addition to the direct implications of retaining the status quo, there are certain other indirect impacts, which may occur should the No Go alternative be followed. The 'no-go' alternative provides the means to compare the impacts of project alternatives with the scenario of a project not going ahead. In evaluating the 'no-go' alternative it is important to take into account the implications of foregoing the benefits of the proposed project.

The No-Go alternative, thus assumes, not proceeding with the proposed expansion. Under this scenario, the site would remain under its current operational status, with no expansion or diversification of processing capacity. The implications of the No-Go alternative include, the loss of an opportunity to diversify the product portfolio, and the inability to access higher-value domestic and export markets. While the No-Go alternative would avoid additional project-related environmental impacts, it would also forego associated socio-economic benefits, including job creation, improved economic resilience, and downstream industrial development. From a strategic, economic, and developmental perspective, the No-Go alternative is therefore considered undesirable.

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	See project description provided in subsequent sections of this BAR. Please note that this application relates to an expansion to an existing authorised and operational process and therefore viable, feasible, and reasonable alternatives are limited.
2	Alternative 1- Location alternative	<p>Location alternatives are typically a key consideration when proposing a new industrial development in order to assess the benefits and potential environmental impacts associated with different sites. However, in this instance, the proposed activity is an expansion of an existing facility and will be developed within an existing industrial property already designated and suitable for metallurgical and related industrial activities. The applicant is the owner of the property, where the proposed development will be accommodated within existing buildings and available space. The site benefits from established industrial land use rights and existing infrastructure, thereby avoiding environmental disturbance and additional regulatory processes typically associated with greenfield developments.</p> <p>The use of an already serviced and operational industrial site allows the proposed development to leverage existing approved infrastructure and systems, thereby reducing potential environmental impacts. <u>Based on these considerations, no reasonable or feasible alternative locations were identified, considered, or assessed.</u></p>
3	Alternative 2- Process alternatives	<p>Process alternatives imply the investigation of alternative processes or methods to achieve the same goal for the proposed Project. This includes using environmentally friendly designs or materials and re-using scarce resources like water and non-renewable energy sources. Process alternatives will be defined and implemented as incremental alternatives during the assessment and incorporated into the EMPr.</p> <p>The proposed process is technically proven, scalable, and suitable for industrial application. The proposed process also integrates seamlessly with the existing facility operations, and infrastructure.</p> <p>Based on these considerations, the proposed expansions of the existing processes to provide for the activity are regarded as the preferred option. <u>No further discrete process alternatives were identified.</u></p>
4	Alternative 3- Technology alternatives	Alternative technologies are available to capture and treat both gas and particle emissions produced during equipment operation. Efforts have been made to vertically integrate unit processes wherever practical so that similar activities—across gold, PGM, and silver lines—are carried out using the same equipment, efficiently reducing the overall footprint. Induction melting machines offer direct operation with minimal residual heat loss compared to other melting methods, and machinery is kept off when not needed to save energy.



		<p>The facility has a long history of running these related processes and relies on established abatement technologies and infrastructure. Emissions reports confirm that outputs remain within regulatory limits, demonstrating that current abatement options work well. According to the attached Specialist Air Quality Impact Assessment Report (see Appendix G), emissions from expansion activities should mirror current levels, with identical control technology applied. Ground-level concentrations due to the project—assuming maximum permitted emissions per MES—remain comfortably within NAAQS and health screening thresholds at nearby sensitive locations for all measurement periods, except for simulated annual chlorine (Cl₂) concentrations. Actual stack measurements are far below MES limits, so real impacts are likely less than modelled results.</p> <p><u>Given these findings, no additional emissions abatement technologies were recommended for the planned expansion.</u></p>
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In the event that no alternative(s) has/have been provided, a motivation must be included in the table below.

Considering that the proposed activity is an expansion to an existing, established and operational process with associated infrastructure, no feasible alternatives were identified or assessed.

3 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:

Size of the activity:

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

~8m x 5m = 40m²
(~0.004ha)

The proposed new equipment will be installed within the existing building and integrated into the existing processes. No new development footprint is proposed.

Alternatives:

Alternative 1 (if any)

N/A

Alternative 2 (if any)

N/A

Ha/ m²

or, for linear activities:

Length of the activity:

Proposed activity

N/A

Alternatives:

Alternative 1 (if any)

N/A



Alternative 2 (if any)

N/A
m/km

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

Size of the site/servitude:

Proposed activity

<p>The facility is located on erf 535 Murray Road, which is 3266m² in extent. The building within which the processes currently occur and within which the proposed activity will occur covers an area of ~1740 m²</p>
--

Alternatives:

Alternative 1 (if any)

N/A

Alternative 2 (if any)

N/A
Ha/m ²

4 SITE ACCESS

Proposal

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

YES	NO
m	

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 new access is required.

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

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

YES	NO
m	

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).

Alternative 2

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

YES	NO
m	

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- No feasible or reasonable alternative identified.
--

 Number of times
(only complete when applicable)

5 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 (±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.

6 SITE PHOTOGRAPHS

Colour photographs from the centre 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.

Please refer to Appendix B for the photographs of the site. Please note that the proposed activity will take place entirely within the existing building structure. Photographs of the existing building are provided together with a photograph of the location of the new infrastructure.

7 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.

Please refer to Appendix C for the facility illustrations. Please note that the proposed activity will take place entirely within the existing building structure.



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.

Section B has been duplicated for sections of the route

0- No feasible or reasonable alternative identified.
--

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

0- No feasible or reasonable alternative identified.
--

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.)

The plant is physically located at the erf 535 Murray Road, corner of Murray and Wadeville Road, in Wadeville, Germiston, Gauteng Province.

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.

Proposed Site

Latitude (S):

Longitude (E):

-26.259689°	28.180819°
-------------	------------

In the case of linear activities:

Alternative:

Latitude (S):

Longitude (E):

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

°	°
°	°
°	°

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

N/A

The 21 digit Surveyor General code of each cadastral land parcel

PROPOSAL	T0IR07090000053500000
ALT. 1	N/A
ALT. 2	
etc.	

3 GRADIENT OF THE SITE

Indicate the general gradient of the site.

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	------------------------	-------------	-------------	--------------	-------------	---------------------

4 LOCATION IN LANDSCAPE

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



Ridgeline	Plateau	Side slope of hill/ridge	Valley	Plain	Undulating plain/low hills	River front
-----------	---------	--------------------------	--------	-------	---------------------------------------	-------------

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)

YES	NO
-----	---------------

Dolomite, sinkhole or doline areas

YES	NO
-----	---------------

Seasonally wet soils (often close to water bodies)

YES	NO
-----	---------------

Unstable rocky slopes or steep slopes with loose soil

YES	NO
-----	---------------

Dispersive soils (soils that dissolve in water)

YES	NO
-----	----

Unknown-not applicable

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

YES	NO
-----	----

Unknown-not applicable

Any other unstable soil or geological feature

YES	NO
-----	---------------

An area sensitive to erosion

YES	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)

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):

°	°
---	---

d) are any sinkholes located within a 300m radius of 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):

°	°
---	---

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

5 AGRICULTURE

Does the site have high potential agriculture as contemplated in the Gauteng Agricultural Potential Atlas (GAPA 4)?

YES	NO
-----	----

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

6 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

Natural veld - good condition % =	Natural veld with scattered aliens % =	Natural veld with heavy alien infestation % =	Veld dominated by alien species % =	Landscaped (vegetation) % =
Sport field % =	Cultivated land % =	Paved surface (hard landscaping) % =	Building or other structure % = 100%	Bare soil % =

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

YES	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.

YES	NO
-----	---------------

If YES, specify and explain:



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

YES	NO
-----	----

If YES, specify and explain:

Was a specialist consulted to assist with completing this section

YES	NO
-----	----

If yes complete specialist details

Name of the specialist:	N/A		
Qualification(s) of the specialist:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Are any further specialist studies recommended by the specialist?	YES	NO
---	-----	----

If YES, specify:

If YES, is such a report(s) attached?	YES	NO
---------------------------------------	-----	----

If YES list the specialist reports attached below

Signature of specialist: _____ Date:

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

7 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	3. Nature conservation area	4. Public open space	5. Koppie or ridge
6. Dam or reservoir	7. Agriculture	8. Low density residential	9. Medium to high density residential	10. Informal residential
11. Old age home	12. Retail	13. Offices	14. Commercial & warehousing	15. Light industrial



16. Heavy industrial ^{AN}	17. Hospitality facility	18. Church	19. Education facilities	20. Sport facilities
21. Golf course/polo fields	22. Airport ^N	23. Train station or shunting yard ^N	24. Railway line ^N	25. Major road (4 lanes or more) ^N
26. Sewage treatment plant ^A	27. Landfill or waste treatment site ^A	28. Historical building	29. Graveyard	30. Archeological site
31. Open cast mine	32. Underground mine	33. Spoil heap or slimes dam ^A	34. Small Holdings	
Other land uses (describe):				

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



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

YES	NO
----------------	----

If yes indicate the type of reports below

A specialist Air Quality Impact Assessment has bene undertaken. Please refer to Appendix G.

The closest residential areas to the facility are Mimosa Park, about 300 m north north-west; and Lambton Gardens, about 400 m north north-east of the site. Other nearby residential area include Estera, Castlevie, Dinwiddie, Elsburg, Lambton, Albemarle, Verwoerdpark, Delville, Tedstone Ville and Reiger Park.



8 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.

The site and surrounding area is comprised of light and heavy industrial, mixed commercial uses and some interspersed residential areas, as well as roads, highways and railways. The site is located in Ward 39 of the City of Ekurhulein Metropolitan Municipality.

9 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?

YES	NO
-----	----

If YES, explain:

--



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:

Will any building or structure older than 60 years be affected in any way?

YES	NO
YES	NO

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



SECTION C: PUBLIC PARTICIPATION (SECTION 41)

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

1 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?

<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
---	-----------------------------

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

<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
------------------------------	--

Please note that the local municipality environmental section was notified of the application during the call to register process conducted in February 2026 and will be provided with a copy of the BAR at the same time that the report is made available for public review.

Please also note that the City of Ekurhuleni Department of Health and Social Development Environmental Health Division, has been contacted regarding the AEL Application. A pre-application meeting with this department was also held to discuss the project.

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

Please refer to Appendix E for a copy of the minutes of the meeting with the City of Ekurhuleni Department of Health and Social Development Environmental Health Division. No comments were raised by the City during this engagement.

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

Any comments received from the City of Ekurhuleni will be captured and included in the final BAR to be submitted to the Gauteng Department of Environment.

2 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?

<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
---	-----------------------------

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

Comment has been received from the South Africa National Roads Agency (SANRAL), stating that they have no objections to the project. Transnet has requested further details on the project to determine whether they are affected. Please refer to Appendix E for copies of all correspondence received and associated responses.



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

3 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.

4 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

0- No feasible or reasonable alternative identified.
--

 times
(complete only when appropriate)

Section D Alternative No.

Alternative 1: Development proposal.

 (complete only when appropriate for above)

5 WASTE, EFFLUENT, AND EMISSION MANAGEMENT

Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES	NO
~2m ³	

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

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

The only construction waste will be related to general construction wastes including packaging waste, installation wastage (e.g. piping offcuts), small quantities of builder's rubble etc, general domestic waste, and maintenance-related waste during commissioning. The installation does not involve any typical construction activities but the infrastructure is rather installed within the existing facility.

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

Any wastes generated will be handled and stored in accordance with the facility's EMP and will be disposed of through the local municipal waste collection and disposal services.

Will the activity produce solid waste during its operational phase?

YES	NO
m ³	

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

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



Limited solid wastes will be generated and will be limited to construction as described above. The proposed new equipment for the new PGM line deployment will happen fully in the confines of the existing plant, structure and operation. No new types of waste, emissions or effluents are being introduced, simply an additional amount of the same.

Solid wastes to be generated during operations may include:

- Collected bag-house dust.
- Spent filters.
- Slags.
- General office wastes.
- Hazardous maintenance wastes (oily rags, paints, etc).
- Laboratory wastes.

The Kusasa refining operation produces solid waste residues such as filter-press cake (mainly copper and base-metal hydroxide sludges recovered for offtake), baghouse dust from particulate control, and slag resulting from melting and flux use. The planned PGM production line will employ the same basic refining methods—using aqua regia and selective precipitation—and will not create new types of waste; however, increased volumes of existing wastes are anticipated due to added steps like precipitation, filtration, roasting, and effluent treatment. All hazardous waste generated at the site—such as slags, crucibles, refractories, and effluents—is immediately separated at the point of generation, treated on-site for metal recovery as far as practicable, and then segregated for dedicated sale or disposal within the local market. Additionally, an effluent processing plant neutralizes wastewater prior to disposal, in accordance with our Waste Management Licence. No waste will be dumped or sent to unlicensed facilities. All waste is collected by licensed waste management service providers and processed or disposed of at approved facilities.

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?

YES	NO
	X

Local service provider confirmation is not expected to be necessary as the expected changes to the existing operational volumes are insignificant.

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

N/A- All waste is collected by licensed waste management service providers and processed or disposed of at approved facilities.

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?

X	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
	X

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 facility's existing EMPr requires the application of the waste management hierarchy and as such any wastes which can be effectively recycled will be.

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?

m ³	
----------------	--

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?

30m ³	
------------------	--

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

The facility is currently operating a liquid effluent treatment facility which aims to neutralise the process effluent. The neutralised effluent is then stored in bunded tanks (20m³) for removal by accredited and registered waste contractors for responsible treatment and disposal.

The effluent is collect on a regular basis by a waste collection and treatment company (either Tiger Chemicals or Rapid Spill) and transported to an licenced efflkuent treatment facility. The treatment facilities used include Tiger Chemical Treatment and Rechem Industries (WML 12/9/11/L191016095640/3/R) and Vlakfontein Waste Management Facility (WML 12/9/11/L/180302301206032/3/R).

The proposed new equipment for the new PGM line deployment will happen fully in the confines of the existing plant, structure and operation. No new types of waste, emissions or effluents are being introduced, simply an additional amount of the same.

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:

Vlakfontein Waste Management Facility:

Facility name:	Vlakfontein Waste Management Facility (WML 12/9/11/L/180302301206032/3/R).
Contact person:	Mr Reginald Gerber
Postal address:	



Postal code:			
Telephone:	0627830791	Cell:	0824624475
E-mail:	Reg.gerber@averda.com	Fax:	

Tiger Chem Waste Management Facility:

Facility name:	Tiger Chemical Treatment and Rechem Industries (WML 12/9/11/L191016095640/3/R)		
Contact person:	Joe Gruber		
Postal address:			
Postal code:			
Telephone:	011 828 5652	Cell:	
E-mail:		Fax:	0866720420

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

The facility doesn't generate significant waste water. The chemical effluent that is generated is collected for recycling/ treatment as described above.

Liquid effluent (domestic sewage)

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

<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
---	-----------------------------

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

Unknown- the domestic sewage to be generated will be from the limited number of on-site staff. The proposed expansion will not significantly alter the existing staff complement.

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

<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
------------------------------	--

Local service provider confirmation is not expected to be necessary as the expected increase in volumes are insignificant.

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

<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
------------------------------	--



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

Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	NO
YES	NO

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

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 proposed expansion (addition of the PGM line) to the existing facility will trigger the need for an amended Atmospheric Emissions License. The relevant authority has been engaged, and the application has been submitted. On the basis that the proposed activity will only trigger amendment to the AEL and NOT a new AEL, there is no requirement to change the application to a Scoping and EIA.

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

N/A- there will be emissions and these are assessed in the attached specialist Air Quality Impact Assessment (Appendix G).

6 WATER USE

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

municipal	Directly from water board	groundwater	river, stream, dam or lake	other	the activity will not use water
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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:

liters

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	NO
-----	---------------

If yes, list the permits required

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

YES	NO
-----	----

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

YES	NO
-----	----



7 POWER SUPPLY

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

Power is supplied to the site via the Local Municipality- City of Ekurhuleni Metropolitan Municipality.

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

The facility has an existing backup generator that is used when local utility power is unavailable.

8 ENERGY EFFICIENCY

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

Vertical integration of unit processes as far as reasonable to ensure similar operations (between gold, PGM and silver lines) are done in the same manner by similar equipment to reduce overall equipment footprint.

Induction melting equipment are very direct and specific with comparatively low residual heat and wasted energy application compared to other types of melting. Operational machinery are kept off to conserve energy when there's no feed.

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

The nature of the current activity is such that direct electrical supply is required. No further alternative or renewable energy sources have been considered.



SECTION E: IMPACT ASSESSMENT

NOTE: The proposed new PGM line represents an expansion of the existing precious metals refining facility to enable the separate recovery and sale of platinum, palladium, rhodium, iridium and ruthenium, using the same overarching aqua regia dissolution and selective precipitation approach, but with additional dedicated equipment and processing steps tailored to PGM separation and higher melting requirements.

Key changes include:

- the installation of a higher-temperature induction melter (to accommodate PGM melting points),
- additional reactor and mixer tank capacity (including a titanium reactor for nitric parting/aqua regia duties),
- increased solid-liquid separation and product drying capacity (mobile filter units and a decanter centrifuge), and
- enhanced pre-abatement and scrubbing (additional PGM pre-scrubber integrated with existing baghouse and wet scrubber systems).

The principal impact drivers associated with these changes are the increased consumption and handling of process chemicals, notably higher volumes of hydrochloric and nitric acid, and the introduction of new reagents (e.g., dimethylglyoxime, ammonium chloride, sodium peroxide, hydrogen peroxide and ethanol), together with increased filtration/precipitation steps and higher-temperature thermal processing.

The environmental components most directly affected by these drivers are air quality (potential increases in acid mists and process fumes requiring effective abatement), water quality and effluent management (greater effluent volumes/strength and scrubber liquor management requiring neutralisation, filtration and licensed disposal), waste management (increased quantities and varieties of process residues, filter cakes and metal-bearing sludges requiring compliant storage and off-site handling), and land/soil and groundwater (elevated spill/leak risk due to higher chemical inventories and transfer operations), with secondary effects on energy demand and associated indirect emissions from the additional electrical equipment.

The impact assessment for this EA application has been structured to clearly distinguish between the existing, lawfully established refining operations at the facility and the incremental changes introduced by the proposed PGM processing line. Impacts associated solely with the current refining process (and related infrastructure) are excluded from this assessment, unless the introduction of the PGM line changes the nature, scale, frequency, or emission/waste profile of those existing activities. In practical terms, the assessment therefore focuses on the additional or altered impact pathways attributable to the PGM line—such as increased reagent and acid consumption, new precipitation steps and associated wastes, higher-temperature melting requirements, and any resulting changes to abatement and effluent management systems—rather than re-assessing baseline impacts that would occur under the existing authorised operation in the absence of the PGM line.

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.

No impacts or risks identified by the I&APs thus far in the process.

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):

N/A

2 IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION AND OPERATIONAL PHASE

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



The broad approach to the significance rating methodology is to determine the significance (S) of an environmental risk or impact by considering the consequence (C) of each impact (comprising Nature, Extent, Duration, Magnitude, and Reversibility) and relating this to the probability/ likelihood (P) of the impact occurring. The S is determined for the pre- and post-mitigation scenario. In addition, other factors, including cumulative impacts and potential for irreplaceable loss of resources, are used to determine a prioritisation factor (PF) which is applied to the S to determine the overall final significance rating (FS).

Determination of Significance

The final significance (FS) of an impact or risk is determined by applying a prioritisation factor (PF) to the post-mitigation environmental significance. The significance is dependent on the consequence (C) of the particular impact and the probability (P) of the impact occurring. Consequence is determined through the consideration of the Nature (N), Extent (E), Duration (D), Magnitude (M), and Reversibility (R) applicable to the specific impact.

For the purpose of this methodology the consequence of the impact is represented by:

$$C = \frac{(E + D + M + R) * N}{4}$$

Each individual aspect in the determination of the consequence is represented by a rating scale as defined in Table 5 below.

Table 5: Criteria for Determining Impact Consequence

Aspect	Score	Definition
Nature	- 1	Likely to result in a negative/ detrimental impact
	+1	Likely to result in a positive/ beneficial impact
Extent	1	Activity (i.e. Highly localised, limited to the area applicable to the specific activity)
	2	Site (i.e. within the development property or site boundary, or the area within a few hundred meters of the site)
	3	Local (i.e. beyond the site boundary within the Local administrative boundary (e.g. Local Municipality) or within consistent local geographical features, or the area within 5 km of the site)
	4	Regional (i.e. Far beyond the site boundary, beyond the Local administrative boundaries within the Regional administrative boundaries (e.g. District Municipality), or extends into different distinct geographical features, or extends between 5 and 50 km from the site).
	5	Provincial / National / International (i.e. extends into numerous distinct geographical features, or extends beyond 50 km from the site).
Duration	1	Immediate (<1 year, quickly reversible)
	2	Short term (1-5 years, less than project lifespan)
	3	Medium term (6-15 years)
	4	Long term (15-65 years, the impact will cease after the operational life span of the project)
	5	Permanent (>65 years, no mitigation measure of natural process will reduce the impact after construction/ operation/ decommissioning).
Magnitude/	1	Minor (where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected)



Intensity	2	Low (where the impact affects the environment in such a way that natural, cultural and social functions and processes are slightly affected, or affected environmental components are already degraded)
	3	Moderate (where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way; moderate improvement for +ve impacts; or where change affects area of potential conservation or other value, or use of resources).
	4	High (where natural, cultural or social functions or processes are altered to the extent that it will temporarily cease; high improvement for +ve impacts; or where change affects high conservation value areas or species of conservation concern)
	5	Very high / don't know (where natural, cultural or social functions or processes are altered to the extent that it will permanently cease, substantial improvement for +ve impacts; or disturbance to pristine areas of critical conservation value or critically endangered species)
Reversibility	1	Impact is reversible without any time and cost.
	2	Impact is reversible without incurring significant time and cost.
	3	Impact is reversible only by incurring significant time and cost.
	4	Impact is reversible only by incurring very high time and cost.
	5	Irreversible Impact.

Once the C has been determined, the significance is determined in accordance with the standard risk assessment relationship by multiplying the C and the P. Probability is rated/ scored as per Table 6.

It is noted that both environmental risks as well as environmental impacts should be identified and assessed. Environmental Risk can be regarded as the potential for something harmful to happen to the environment, and in many instances is not regarded as something that is expected to occur during normal operations or events (e.g. unplanned fuel or oil spills at a construction site). Probability and likelihood are key determinants or variables of environmental risk. Environmental Impact can be regarded as the actual effect or change that happens to the environment because of an activity and is typically an effect that is expected from normal operations or events (e.g. vegetation clearance from site development results in loss of species of concern). Typically, the probability of an unmitigated environmental impact is regarded as highly likely or certain (management and mitigation measures would ideally aim to reduce this likelihood where possible). In summary, environmental risk is about what could happen, while environmental impact is about what does happen.

Table 6: Probability/ Likelihood Scoring

Probability		
	2	Low probability (Unlikely, impact could occur but not realistically expected; >5% and <20% chance).
	3	Medium probability (Possible, the impact may occur; >20% and <50% chance).
	4	High probability (Likely, it is most probable that the impact will occur- > 50 and <90% chance).
	5	Definite (Almost certain, the impact is expected to, or will, occur, >90% chance).

The result is a qualitative representation of relative significance associated with the impact. Significance is therefore calculated as follows:



$$S = C \times P$$

Table 7: Determination of Significance

Consequence	5- Very High ¹	5	10	15	20	25
	4- High	4	8	12	16	20
	3- Medium	3	6	9	12	15
	2- Low	2	4	6	8	10
	1- Very low	1	2	3	4	5
		1- Improbable	2- Low	3- Medium/ Possible	4- High/ Probable	5- Highly likely/ Definite
Probability						

The outcome of the significance assessment will result in a range of scores, ranging from 1 through to 25. These significance scores are then grouped into respective classes as described in Table 8.

Table 8: Significance Scores

S Score	Description
≤4.25	Low (i.e. where this impact is unlikely to be a significant environmental risk/ reward).
>4.25, ≤8.5	Low-Medium (i.e. where the impact could have a significant environmental risk/ reward).
>8.5, ≤13.75	High-Medium (i.e. where the impact could have a significant environmental risk/ reward).
>13.75	High (i.e. where the impact will have a significant environmental risk/ reward).

The impact significance will be determined for each impact without relevant management and mitigation measures (pre-mitigation significance), as well as post implementation of relevant management and mitigation measures (post-mitigation significance). This allows for a prediction in the degree to which the impact can be managed/mitigated.

Impact Prioritization

Further to the assessment criteria presented in the section above, it is necessary to consider each potentially significant impact in terms of:

1. Cumulative impacts; and
2. The degree to which the impact may cause irreplaceable loss of resources.

To ensure that these factors are considered, an impact prioritisation factor (PF) will be applied to each impacts' post-mitigation significance (post-mitigation). This prioritisation factor does not aim to detract from the significance ratings but rather to focus the attention of the decision-making authority on the higher priority/significance issues and impacts. The PF will be applied to the post-mitigation significance based on the assumption that relevant suggested management/mitigation impacts are implemented.

Table 9: Criteria for Determining Prioritisation

¹ In the event that an impact or risk has very high or catastrophic consequences, but the likelihood/ probability is low, then the resultant significance would be Low-medium. This does in certain instances detract from the relative important of this impact or risk and must consequently be flagged for further specific consideration, management, mitigation, or contingency planning.



Cumulative Impact (CI)	Medium (2)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.
	High (3)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/ definite that the impact will result in spatial and temporal cumulative change.
	Low (1)	Where the impact is unlikely to result in irreplaceable loss of resources.
Irreplaceable Loss of Resources (LR)	Medium (2)	Where the impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.
	High (3)	Where the impact may result in the irreplaceable loss of resources of high value (services and/or functions).
	Low (1)	Where the impact is unlikely to result in irreplaceable loss of resources.

The value for the final impact priority is represented as a single consolidated priority, determined as the sum of each individual criteria represented in Table 9. The impact priority is therefore determined as follows:

$$\text{Priority} = \text{CI} + \text{LR}$$

The result is a priority score which ranges from 2 to 6 and a consequent PF ranging from 1 to 1.5 (Refer to Table 10).

Table 10: Determination of Prioritisation Factor

Priority	Prioritisation Factor
2	1
3	1.125
4	1.25
5	1.375
6	1.5

In order to determine the final impact significance (FS), the PF is multiplied by the post-mitigation significance scoring. The ultimate aim of the PF is an attempt to increase the post mitigation environmental risk rating by a factor of 0.5, if all the priority attributes are high (i.e. if an impact comes out with a high medium environmental risk after the conventional impact rating, but there is significant cumulative impact potential and significant potential for irreplaceable loss of resources, then the net result would be to upscale the impact to a higher significance).

Table 11: Final Environmental Significance Rating

Significance Rating	Description
<-25	Very High (Impacts in this class are extremely significant and pose a very high environmental risk. In certain instances these may represent a fatal flaw. They are likely to have a major influence on the decision and may be difficult or impossible to mitigate. Offset's may be necessary.



<-13.75 to -25	High negative (These impacts are significant and must be carefully considered in the decision-making process. They have a high environmental risk or impact and require extensive mitigation measures).
-8.5 to -13.75	Medium-High negative (i.e. Impacts in this class are more substantial and could have a significant environmental risk. They may influence the decision to develop in the area and require more robust mitigation measures).
<-4.25 to <-8.5	Medium- Low negative (i.e. These impacts are slightly more significant than low impacts but still do not pose a major environmental risk. They might require some mitigation measures but are generally manageable).
-1 to -4.25	Low negative (i.e. Impacts in this class are minor and unlikely to have a significant environmental risk. They do not influence the decision to develop in the area and are typically easily mitigated).
0	No impact
1 to 4.25	Low positive
>4.25 to <8.5	Medium-Low positive
8.5 to 13.75	Medium-High positive
>13.75	High positive

The significance ratings and additional considerations applied to each impact will be used to provide a quantitative comparative assessment of the alternatives being considered. In addition, professional expertise and opinion of the specialists and the environmental consultants will be applied to provide a qualitative comparison of the alternatives under consideration.

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.

Table 12 provides a list of the identified environmental impacts associated with the proposed new PGM line together with the pre- and post mitigation impact assessment significance (refer to



Appendix I for the complete assessment). The relevant environmental controls listed in the existing EMPr are summarized for each impact, and where necessary additional controls are recommended.



Table 12: Development Proposal Construction and Operational Phase Impacts

Potential impacts:	Relevant project Phase	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
Generation of construction related wastes	Construction	Medium to low -	No additional mitigation- comply with construction phase requirements of the EMPr.	Low -	Low
Temporary noise and disturbance	Construction	Medium to low -	No additional mitigation- comply with construction phase requirements of the EMPr.	Low -	Low
Increase in electricity demand from new PGM equipment increasing indirect GHG emissions.	Operations	Medium to high -	Proposed additional Impact Management Actions: <ul style="list-style-type: none"> - Monitor and report monthly kWh consumption as part of operational environmental reporting. - Set energy intensity KPIs with quarterly review and corrective actions via the non-conformance system. - Develop and implement energy efficiency SOPs: examples include minimise furnace hold time, optimise batch scheduling, maintain chiller setpoints, and avoid overcooling; include preventative maintenance focused on energy performance. - Evaluate feasible low-carbon supply measures (PV/wheeling/renewable procurement) and implement where practicable; record decisions and progress in management review minutes. 	Medium to high -	Low
Increase in hazardous solid wastes (neutralisation sludges, filter cakes/cloths, spent media) requiring compliant storage and	Operations	Medium to high -	Existing EMPr Impact Management Actions:	Medium to low -	Low



Potential impacts:	Relevant project Phase	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
<p><u>off-site disposal/beneficial use</u>. Uncontrolled waste handling, storage and disposal has the potential to directly and indirectly affect various environmental component (including surface water, groundwater, air quality, health risks, etc). By responsibly controlling and isolating the wastes many of these impacts can be avoided. Where disposal cannot be avoided, responsible disposal can minimise the impacts.</p>			<ul style="list-style-type: none"> - Maintain waste management system (waste register, manifests, safe disposal certificates) and comply with cradle-to-grave requirements. - Dispose of hazardous waste only at licensed facilities and retain proof of disposal; conduct periodic audits. - Undertake sampling/classification of hazardous wastes where required and maintain records. <p>Proposed additional Impact Management Actions:</p> <ul style="list-style-type: none"> - Add new waste streams to the waste register (e.g. baghouse dust, PGM precipitate residues, spent filter media/cloths, centrifuge residues, off-spec salts/sponges); define storage and disposal route for each. - Update waste classification programme to include new wastes (in line with the NEMWA requirements) and confirm acceptance criteria with disposal/treatment facilities and contractors. - Provide secure, sealed and labelled storage in bunded/impervious areas; prevent dust liberation and stormwater contact; include compatibility segregation for reactive residues. - Update contractor verification procedure: retain acceptance letters/permits for new waste types and ensure manifests reflect 		



Potential impacts:	Relevant project Phase	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
			correct UN/transport classes where applicable.		
<p><u>Risk of soil/groundwater contamination due to unplanned spills/leaks of increased chemical inventory (acids, oxidisers, ethanol) and transfer operations.</u> Hazardous chemicals (existing inventory as well as proposed additional for the PGM line) have the inherent potential for risk and contamination of surface water, groundwater, and soils if not handled, and stored correctly.</p>	Operations	Medium to high -	<p>Existing EMPr Impact Management Actions:</p> <ul style="list-style-type: none"> - Store hazardous substances in roofed/bunded areas on impermeable substrates; bund capacity $\geq 110\%$ of largest tank; keep tanks segregated as required. - Inspect storage tanks daily; maintain closed systems with overfill prevention devices; maintain coupling integrity and restrict connections to filling/decanting. - Implement spill response: immediate reporting, containment, prevention of spread, proper disposal of contaminated materials, incident recording. - Implement stormwater management to prevent contaminated runoff and ensure clean/dirty water separation. <p>Proposed additional Impact Management Actions:</p> <ul style="list-style-type: none"> - Implement a chemical compatibility/segregation matrix for new reagents (peroxides, ethanol, ammonium salts) and integrate into storage layout, signage and training. - Review bund materials and chemical resistance for new chemicals; include bund-water sampling (where necessary) and controlled dewatering procedure (no 	Medium to low -	Low



Potential impacts:	Relevant project Phase	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
			<p>discharge of contaminated bund water to the environment).</p> <ul style="list-style-type: none"> - Strengthen transfer controls: including supervised transfers, use drip trays, quick-connect couplings (if possible), line integrity checks, isolation valves (if possible); include checks in EO weekly checklists. - Add specific controls for oxidisers (sodium peroxide/hydrogen peroxide): dedicated storage, spill kits suitable for oxidisers, and exclusion of combustible absorbents where inappropriate. 		
<p>Increased hazardous liquid effluent strength/volume and treatment/disposal demand due to higher chemical consumption and additional processing. Uncontrolled liquid effluent handling, storage and disposal has the potential to directly and indirectly affect various environmental component (including surface water, groundwater, health risks, etc). By responsibly controlling and isolating the wastes many of these impacts can be avoided. Where disposal cannot be avoided, responsible disposal can minimise the impacts.</p>	Operations	Medium to high -	<p>Existing EMPr Impact Management Actions:</p> <ul style="list-style-type: none"> - Separate clean and dirty stormwater; prevent polluted stormwater from leaving site; implement stormwater management planning and controls. - Bunded storage of acids/chemicals; no spillage may enter storm drains; bund design capacity requirements and operational controls. - Undertake water quality monitoring (e.g., sampling at bund outlets/discharge points where relevant) and maintain records. - Implement spent acid management: daily inspections, overfill prevention, closed systems, licensed contractor removal and manifesting. 	Medium to low -	Low



Potential impacts:	Relevant project Phase	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
		Medium to high -	Proposed additional Impact Management Actions: <ul style="list-style-type: none"> - Confirm effluent/neutralisation capacity for PGM campaign peaks (neutralisation tank capacity, filter press throughput, storage capacity/freeboard) and document contingency procedures for peak volumes. - Define scrubber liquor management route (storage, sampling, classification, contractor disposal) and integrate into the waste register and monitoring plan. - Add commissioning effluent characterisation programme: pH, conductivity, chloride/nitrate proxies, ammonia (if relevant), and metals suite aligned with new PGM circuit reagents and feedstock; set trigger levels and corrective actions. - Update stormwater plan drawings to include new chemical storage/transfer areas and any new dirty-water capture points; implement bund-water sampling prior to any dewatering. - Waste streams must be classified and assessed in accordance with the requirements of the NEMWA. Disposal to suitable licenced facilities. 	Medium to low -	
Particulate emissions from higher-temperature PGM melting and roasting; handling of baghouse dust. The proposed PGM line may increase the generation of	Operations	Medium to high -	Existing EMPr Impact Management Actions: <ul style="list-style-type: none"> - Control emissions through existing scrubbing/abatement and maintain 	Medium to low -	Low



Potential impacts:	Relevant project Phase	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
<p>metal-bearing fumes/particulates and consequently increase loads on baghouse/scrubbers. This can result in potential for particulate fallout if controls fail or during maintenance/bypass.</p> <p>Please refer to the Specialist Air Quality Impact Assessment Report for further detailed modelling and assessment of this impact (Appendix G).</p>		Medium to high	<p>servicing and monitoring as per EMPr and AEL requirements.</p> <ul style="list-style-type: none"> - Maintain housekeeping controls and auditing systems to prevent fugitive emissions and manage complaints/non-conformances. <p>Proposed additional Impact Management Actions:</p> <ul style="list-style-type: none"> - Add dust capture equipment (and any baghouse interface points) to the EMPr maintenance schedule including inspection frequency, dust removal procedures, integrity checks and record keeping. - Ensure all furnace off-gas and hot-process vents are captured and routed through the abatement systems; avoid temporary venting/bypass. - Develop and implement dust handling SOP: including use of sealed containers, wet methods/HEPA vacuum only, controlled transfer to storage, and classification/manifesting of dust as per waste requirements, application of specified PPE. - Provide task-specific training on fine dust handling and housekeeping frequency. 	Medium to low	
<p>Increase in identified non particulate emissions (acid gases/ NOx / Cl₂/ HCL/ HF/</p>	Operations	Medium to high	<p>Existing EMPr Impact Management Actions:</p> <ul style="list-style-type: none"> - Route chemical process emissions to a scrubber before release to atmosphere, 	Medium to low	Low



Potential impacts:	Relevant project Phase	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
<p>NH3). These will be driven primarily by increased source chemical use.</p> <p>The new PGM line will generate non-particulate acid/reactive fumes mainly during PGM acid parting/aqua regia refining and precipitation, and when PGM salts/sponges are roasted/calced (driving off chlorides/organics).</p> <p>These emissions are extracted to the PGM pre-scrubber and main wet scrubber and released via the scrubber stack (SV001) for atmospheric dispersion. The key receptors are nearby off-site sensitive human receptors (adjacent residential areas and other community receptors), with the AQIA report noting annual Cl₂ as the only potential screening flag under conservative MES-based modelling. Note that measured CL releases at the current facility are well below these MES standards and as such actual emissions are expected to be well below the screening value. Please refer to the Specialist Air Quality Impact Assessment Report for further detailed modelling and assessment of this impact (Appendix G).</p>			<p>with a defined stack height and control system approach.</p> <ul style="list-style-type: none"> - Scrubber liquor dosing and efficiency targets (NaOH/ Na₂S₂O₄ dosing to achieve stated scrubbing efficiency), and scrubber servicing at defined intervals. - Air quality monitoring to be undertaken in accordance with AEL conditions. - Auditing/inspection systems (EO inspections, ECO monthly audits; non-conformance and incident registers) to track compliance and corrective actions. <p>Proposed additional Impact Management Actions:</p> <ul style="list-style-type: none"> - Confirm, and document, abatement capacity for increased acid loadings: verify scrubber design basis (gas flow, acid loading, liquid-to-gas ratio, reagent dosing capacity) against the new monthly acid volumes and PGM operating schedule. - Add a formal scrubber performance verification programme to demonstrate the scrubber remains effective at the increased higher load. - Develop chemical handling Standard Operating Procedures (SOPs) for high-volume HCl/HNO₃. These should include controls such as transfer in banded areas, quick-connect couplings, drip trays, transfer supervision and must be 		



Potential impacts:	Relevant project Phase	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
			<p>linked to the EMPr spill prevention/response system.</p> <ul style="list-style-type: none"> - Obtain AEL amendment to reflect revised process. - Add targeted monitoring for emissions of concern during the initial PGM implementation to verify predictions and confirm compliance with AEL conditions. 		
<p><u>Noise increase from additional mechanical equipment affecting local receptors.</u> The proposed equipment/ process additions to the existing operations may further add to the noise generated from mechanical operations (e.g. pumps, mixers and granulation). These are however installed within the existing facility's existing processes and within the existing building. There are no public noise receptors close to the operations.</p>	Operations	Medium to low -	<p>Existing EMPr Impact Management Actions:</p> <ul style="list-style-type: none"> - Keep plant/equipment in good repair to reduce point-source noise; strive for compliance with applicable standards (e.g., SANS 10103) and allow ECO to instruct monitoring if required. - Manage complaints through consultation/complaints register and implement corrective actions as required. <p>Proposed additional Impact Management Actions:</p> <ul style="list-style-type: none"> - Specify low-noise equipment where feasible; install acoustic enclosures/silencers on dominant sources (e.g., chiller/fans) if boundary noise risk is identified through monitoring. - Restrict particularly noisy maintenance activities to daytime hours where practicable and document deviations. 	Low -	Low
<p><u>VOCs / flammability risk from new chemical use (e.g. ethanol) with potential vapour</u></p>	Operations	Medium to low -	<p>Existing EMPr Impact Management Actions:</p>	Low -	Low



Potential impacts:	Relevant project Phase	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
<p><u>release during handling</u>. The use of additional chemicals with specific handling safety measures have the potential to lead to operational and occupational hazards.</p>		Medium to low -	<ul style="list-style-type: none"> - Maintain and implement Emergency Preparedness and Response Plan (EPRP) covering fire prevention/response and hazardous substances. - Implement spill prevention and spill response procedures; prevent entry of pollutants into storm drains. - Apply hazardous substance management requirements: bunded, impermeable containment; MSDS availability; training. <p>Proposed additional Impact Management Actions:</p> <ul style="list-style-type: none"> - Provide compliant flammable liquid storage for ethanol, with ignition control and separation from oxidisers (e.g., peroxides). - Implement bonding/earthing and safe transfer procedures for ethanol to minimise ignition sources. - Update EPRP to include ethanol-specific scenarios (vapour release, ignition, firewater containment and disposal). - Introduce VOC minimisation SOP: minimise open handling, keep containers closed, use enclosed dosing where feasible, application of required PPE. 	Medium to low -	Low
<p><u>Increased hazardous materials transport (deliveries and waste collections) raising off-site spill/accident risk</u>. The transport of hazardous materials to (chemical inputs) and</p>	Operations	Medium to low -	<p>Existing EMPr Impact Management Actions:</p> <ul style="list-style-type: none"> - Implement traffic management: roadworthy vehicles, speed limit 	Low -	Low



Potential impacts:	Relevant project Phase	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
<p>from (effluents) has the potential to create a risk when transporting off site.</p>			<p>compliance, avoid night travel where practicable, record incidents.</p> <ul style="list-style-type: none"> - Maintain cradle-to-grave documentation for hazardous waste transport (manifests, disposal certificates) and audit contractor compliance. <p>Proposed additional Impact Management Actions:</p> <ul style="list-style-type: none"> - Confirm transporter licensing for hazardous chemicals and wastes; verify permits annually and retain on file; ensure SDS and emergency information accompanies loads. - Schedule deliveries/collections to avoid peak traffic and reduce accident risk; formalise logistics SOP and include response procedures for transporters. - Obtain acceptance confirmation from treatment/disposal facilities for new PGM-related wastes (dusts, residues) prior to shipping; update manifests accordingly. 		
<p><u>Increased fire / emergency risk associated with increased chemical volumes and new chemical profiles.</u> The additional of the PGM line brings with it additional chemical storage volumes as well as different chemicals. These have the potential to create fire and emergency incident risks at the facility. In addition incorrect management of firewater</p>	Operations	<p>Medium to high</p> <p>-</p>	<p>Existing EMPr Impact Management Actions:</p> <ul style="list-style-type: none"> - Maintain EPRP covering fire prevention, fire response, spill prevention/response, contamination of water resources, and authority notification requirements. - Implement fire prevention measures and maintain firefighting equipment and signage as required; record drills/training. 	Low -	Low



Potential impacts:	Relevant project Phase	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
has the potential to contaminate local water and soil resources.			Proposed additional Impact Management Actions: <ul style="list-style-type: none"> - Develop a firewater containment plan (valving/isolation, temporary bunding, sump isolation/collection) to prevent contaminated firefighting water from leaving site. - Update emergency risk assessments, scenarios and drills to account for new chemicals and increased volumes; maintain training records and drill reports. - Update site emergency maps to include new PGM areas, associated chemical stores and shut-off points; ensure compatibility with municipal fire response requirements where applicable. - Notify the relevant emergency services of the amended operations- e.g. local fire department. 		
Alternative 1		<i>(REPEAT THIS TABLE FOR EACH ALTERNATIVE)</i>			
No feasible or reasonable alternative identified.					



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

A specialist Air Quality Impact Assessment has been undertaken. Please refer to Appendix G.

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

It is assumed that all information provided by the applicant, the technical team and specialists that informed the EAP and the information in this report is reliable, accurate and up to date.

It is also assumed that the applicant will comply with all legislation pertaining to the activities of this proposed project and that all permits and licenses that may be required will be identified and applied for prior to commencement of construction activities.

The following assumptions and limitations are presented in the Specialist Air Quality Impact Assessment Report:

- Meteorological data: Use was made of data from the closest South African Weather Service (SAWS) Station (OR Tambo International Airport (ORTIA)) for the project area.
- Emissions: The quantification of sources of emission was restricted to the project activities only. Although other background sources were identified, such sources were not quantified.
- Routine emissions from the project were modelled. Atmospheric releases occurring as a result of start-up or accidents were not accounted for.
- Vehicle exhaust emissions were not quantified as the impacts from these sources are localized (on less than 100 m of on-site road length) and will not exceed NAAQS offsite.
- It was assumed that atmospheric emissions from the project will be at or below the MES for subcategory 4.17.
- All pollutants as specified in the MES for subcategory 4.17 were assumed to be emitted from the project.
- Impact assessment: The construction and closure phases were assessed qualitatively (Section 5.1.8) due to the temporary nature of these operations, whilst the operational phase was assessed quantitatively.
- As no on-site ambient baseline measurements were available for the assessment; current impacts were assessed assuming the ambient data measured at the closest ambient monitoring station with data available (Thokoza).
- It was assumed that the project would operate 8760 hours per year. The impacts are therefore conservative, since the project may only be used when sufficient feedstock is available.

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



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
Contaminated waste and equipment decommissioning, removal and disposal	Medium to high -	<ul style="list-style-type: none"> - Undertake a decommissioning assessment and prepare and closure plan. Apply for relevant Environmental Authorisation in advance of decommissioning activities. - Drain, neutralise, flush and verify "clean" status of tanks/pipework before dismantling (reactor, mixer tanks, pre-scrubber, neutralisation tank) - All draining/disconnection to occur on impermeable bunded surfaces; no contact with stormwater inlets. 	Medium to low -	Medium
Temporary dust and noise during demolition and dismantling.	Medium to low -	<ul style="list-style-type: none"> - Keep demolition activities to working hours. - Maintain a complaints register and track response actions. - Use wet methods/HEPA vacuums for dust; sealed containers for baghouse dust; housekeeping schedule. 	Low -	Medium
Residual contamination in the land post demolition	Medium to low -	<ul style="list-style-type: none"> - Commission a specialist Phase 1 Site Assessment (as per ASTM) to determine the need for further contamination assessment or remediation. - Comply with the Contaminated Land provisions of the NEMWA if applicable. 	Medium to low -	Medium



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
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Alternative 1

No feasible or reasonable alternative identified.

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

N/A

Where applicable indicate the detailed financial provisions for rehabilitation, closure and ongoing post decommissioning management for the negative environmental impacts.

N/A- Leading up to decommissioning an application for Environmental Authorisation will need to be undertaken (Listing Notice 1 Activity 31).

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:

The impact assessment methodology uses a prioritisation factor for all impacts that may add to existing ones. For detailed information, see the full Impact Assessment matrix in Appendix I. The assessment highlights several impacts that could have cumulative effects, such as increased climate change impact from additional energy use, more air emissions, and greater volumes of liquid and solid waste entering waste management systems. However, these cumulative contributions are expected to be insignificant because the quantities involved are relatively small.

No other discrete cumulative impacts were specifically identified.

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

The proposed addition of the PGM processing line at the existing Kusasa Wadeville refining facility is anticipated to result in localized and manageable impacts, provided that all prescribed and recommended management and mitigation measures—including existing EMPr controls and PGM-specific addenda—are properly implemented. The primary residual impact categories include air quality (such as acid gases, NOx, chloride-related fumes, and particulate/metal emissions), effluent and waste management (with increases in both the volume and concentration of hazardous liquid wastes and solid residues like filter



cakes and dust), risks associated with spills or incidents involving chemicals, fuels, or solvents, and heightened energy demand with corresponding indirect emissions due to additional electrical equipment.

Operational impacts are generally long-term, persisting throughout the lifespan of the PGM line, whereas impacts related to construction, installation, or occasional upset events are short-term and episodic. With appropriate mitigation, the probability of significant adverse effects on off-site receptors is expected to be low or unlikely for routine air emissions exceedances and pollution incidents, owing to rigorous containment, abatement, monitoring, and incident response protocols. However, increased energy consumption and its associated indirect emissions remain inevitable, as these are primarily influenced by the municipality's future low-carbon energy strategies and are largely beyond the applicant's immediate control.

According to the applied significance assessment methodology, most residual impacts post-mitigation are projected to fall within the Low negative to Medium-Low negative significance range, with no fatal flaws detected—contingent upon the continued implementation and maintenance of abatement systems, proper waste classification and disposal routes, chemical compatibility controls, and comprehensive monitoring and auditing. The principal residual impact requiring continuous management attention is increased energy demand and associated indirect emissions, which remain more considerable due to their persistent and cumulative nature but can be mitigated through energy efficiency initiatives, ongoing monitoring of energy intensity, and adoption of practical low-carbon energy supply options.

Alternative 1

No feasible or reasonable alternative identified.

No-go (compulsory)

The No-Go alternative, assumes that the proposed PGM line is not installed and the site remains operating and refining the current products. While this option would avoid the minimal construction/ installation related and operational impacts, it would also forgo the socio-economic gains associated with the project, including job retention, limited new employment opportunities, and improved utilisation of an already transformed industrial site. In addition, the opportunity to extract further value from the current processing would be lost. Given that the site has no ecological or heritage sensitivities and is located within a designated industrial area, the No-Go alternative does not offer significant environmental benefit and is therefore not preferred.

6 IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE

For proposal:

The proposed addition of the PGM processing line at the existing Kusasa Wadeville refining facility is anticipated to result in localized and manageable impacts, provided that all prescribed and recommended management and mitigation measures—including existing EMPr controls and PGM-specific addenda—are properly implemented. The primary residual impact categories include air quality (such as acid gases, NO_x, chloride-related fumes, and particulate/metal emissions), effluent and waste management (with increases in both the volume and concentration of hazardous liquid wastes and solid residues like filter cakes and dust), risks associated with spills or incidents involving chemicals, fuels, or solvents, and heightened energy demand with corresponding indirect emissions due to additional electrical equipment.

Operational impacts are generally long-term, persisting throughout the lifespan of the PGM line, whereas impacts related to construction, installation, or occasional upset events are short-term and episodic. With appropriate mitigation, the probability of significant adverse effects on off-site receptors is expected to be low or unlikely for routine air emissions exceedances and pollution incidents, owing to rigorous containment, abatement, monitoring, and incident response protocols. However, increased energy consumption and its associated indirect emissions remain inevitable, as these are primarily



influenced by the municipality's future low-carbon energy strategies and are largely beyond the applicant's immediate control.

According to the applied significance assessment methodology, most residual impacts post-mitigation are projected to fall within the Low negative to Medium-Low negative significance range, with no fatal flaws detected—contingent upon the continued implementation and maintenance of abatement systems, proper waste classification and disposal routes, chemical compatibility controls, and comprehensive monitoring and auditing. The principal residual impact requiring continuous management attention is increased energy demand and associated indirect emissions, which remain more considerable due to their persistent and cumulative nature but can be mitigated through energy efficiency initiatives, ongoing monitoring of energy intensity, and adoption of practical low-carbon energy supply options.

For alternative:

No feasible or reasonable alternative identified.

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.

Overall, the proposed PGM line expansion within the existing Kusasa Wadeville facility is assessed as having a medium-low negative significance across the construction, operational and decommissioning phases. Operational impacts have been quantified through dispersion modelling and found to be generally low at the closest sensitive receptors. The modelling also indicates that predicted ground-level concentrations for all identified pollutants (e.g., SO₂, NO₂, HCl, HF, NH₃ and Cl₂) are within applicable NAAQS/health screening levels, except for annual average chlorine (Cl₂) under conservative MES-based assumptions; however, measured stack emissions are well below MES, so actual impacts are expected to be lower than modelled. The project is also described as not introducing substantive new types of emissions/effluents/wastes, but rather increasing quantities of similar streams already managed on site, and it will utilise the existing abatement systems (with the PGM line adding an additional pre-scrubber).

The proposal is preferred because it (i) is contained within an existing, enclosed industrial facility, limiting additional land-take and off-site disturbance; (ii) relies on proven, existing air pollution control systems (wet scrubbing and associated pre-scrubbers) and an established effluent handling arrangement, reducing risk compared to a "new build" alternative; (iii) demonstrates generally low off-site health risk in dispersion modelling; and (iv) can be managed through post-expansion stack testing/verification and ongoing AEL compliance, as explicitly recommended in the AIR. No other reasonable or feasible alternatives were identified.

7 SPATIAL DEVELOPMENT TOOLS

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

Gauteng Environmental Management Framework: According to the map referenced in Appendix A, the existing Kusasa facility is located within Zone 5 of the GEMF. Within the GPEMF, Zone 5 is designated as the "Industrial and Commercial Focus Zone," which is intended to accommodate non-polluting industrial and large-scale commercial developments through certain "excluded activities." However, the specific listed activity for which Kusasa is applying is not included among those excluded, and therefore requires an Environmental Authorisation (EA), despite being situated within a defined industrial area.

City of Ekurhuleni Regional Spatial Development Framework: The Kusasa site is situated within Zone F of the RSDF. Wadeville's industrial area serves as a major income generator for the region. The RSDF highlights that Region F's role includes maximising industrial potential within the established Wadeville industrial hub. As such, both the existing facility and the proposed PGM line expansions align with the intended industrial objectives for Wadeville as outlined in the RSDF.



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	NO
X	

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

N/A

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:

Please refer to the additional impact management outcomes listed in the impact assessment- see Table 12.
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9 THE NEEDS AND DESIREABILITY OF THE PROPOSED DEVELOPMENT

(as per notice 792 of 2012, or the updated version of this guideline)

The needs and desirability analysis component of the “Guideline on need and desirability in terms of the EIA Regulations (Notice 819 of 2014)” includes, but is not limited to, describing the linkages and dependencies between human well-being, livelihoods and ecosystem services applicable to the area in question, and how the proposed development’s ecological impacts will result in socio-economic impacts (e.g. on livelihoods, loss of heritage site, opportunity costs, etc.). Table 9 presents the needs and desirability analysis undertaken.

The proposed new PGM line is motivated by the opportunity to refine PGMs (Pt, Pd, Rh, Ir, Ru) to saleable products, rather than selling PGMs only as agglomerated material (as per current operations), thereby improving the economic viability of the operation. The PGM line is designed to be accommodated within the existing Kusasa Wadeville facility, using the same overall refining approach (aqua regia and selective precipitation) and leveraging existing infrastructure (hardstand/warehouse footprint, established waste management and chemical handling systems, existing abatement train, and existing effluent handling capacity with efficiency upgrades).

From a “place” and “time” perspective, the development is desirable because it represents intensification of an established industrial land use within the Wadeville industrial node, on land already transformed (hardstand/warehouse), thereby avoiding new land take and associated ecological disturbance.



Table 13: Needs and desirability analysis for the proposed project.

Ref No.	Question	Response
1	Securing ecological sustainable development and use of natural resources	The proposed PGM line is an in-facility expansion that leverages existing industrial infrastructure, abatement and effluent systems, thereby limiting new land disturbance and supporting the sustainability 'triple bottom line' approach required for need and desirability.
1.1	How were the ecological integrity considerations taken into account in terms of: Threatened Ecosystems, Sensitive and vulnerable ecosystems, Critical Biodiversity Areas, Ecological Support Systems, Conservation Targets, Ecological drivers of the ecosystem, Environmental Management Framework, Spatial Development Framework (SDF) and global and international responsibilities.	Ecological integrity considerations were addressed primarily through site context: the activity occurs on an existing paved/concreted industrial site/warehouse in an established industrial area (Wadeville). This limits interaction with natural ecosystems; the prior baseline records no on-site flora and no wetlands in the vicinity described for the industrial site context. With reference to the maps in Appendix I, the site is not located on any designated Critical Biodiversity Areas or Ecological Support areas.
1.2	How will this project disturb or enhance ecosystems and / or result in the loss or protection of biological diversity? What measures were explored to avoid these negative impacts, and where these negative impacts could not be avoided altogether, what measures were explored to minimise and remedy the impacts? What measures were explored to enhance positive impacts?	Because the PGM line is installed inside an existing facility, it is not expected to disturb natural habitats or cause biodiversity loss through footprint expansion. The mitigation hierarchy is applied mainly through avoidance by location (in-facility, hardstand) and by maintaining/enhancing existing pollution control systems (abatement and effluent treatment). Air emissions are expected to be within prescribed limits.
1.3	How will this development pollute and / or degrade the biophysical environment? What measures were explored to either avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy the impacts? What measures were explored to enhance positive impacts?	Potential pollution pathways are associated with acid digestion/refining and related emissions and effluents. The process design includes abatement systems (baghouse, pre-scrubbers and main wet scrubber) and an effluent plant with added neutralisation/filtration capacity; treated effluent is stored for collection and off-site management by registered contractors. Please refer to Appendix G for a copy of the Air Quality Impact Assessment.
1.4	What waste will be generated by this development? What measures were explored to avoid waste, and where waste could not be avoided altogether, what measures were explored to minimise, reuse and / or recycle the waste? What measures have been explored to safely treat and/or dispose of unavoidable waste?	Waste streams include: (i) effluent and neutralisation sludges/hydroxides; (ii) spent/treated solutions routed to the effluent circuit; and (iii) process residues. The process maximises metal recovery before effluent treatment; effluent is stored for removal by accredited/registered contractors, providing for safe treatment/disposal of unavoidable wastes.
1.5	How will this project disturb or enhance landscapes and / or sites that constitute the nation's cultural heritage? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided	The proposal is within an existing industrial warehouse/hardstand site; therefore it does not introduce new landscape transformation and is unlikely to affect cultural landscapes through ground disturbance.



Ref No.	Question	Response
	altogether, what measures were explored to minimise and remedy the impacts? What measures were explored to enhance positive impacts?	
1.6	How will this project use and / or impact on non-renewable natural resources? What measures were explored to ensure responsible and equitable use of the resources? How have the consequences of the depletion of the non-renewable natural resources been considered? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy the impacts? What measures were explored to enhance positive impacts?	The process uses non-renewable inputs including energy from the National grid; however, it refines and recovers valuable PGMs into saleable products, improving beneficiation/value recovery, and is designed to operate within existing infrastructure and regulatory constraints.
1.7	How will this project use and / or impact on renewable natural resources and the ecosystem of which they are part? Will the use of the resources and / or impacts on the ecosystem jeopardise the integrity of the resource and / or system taking into account carrying capacity restrictions, limits of acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is not possible, to minimise the use of resources? What measures were taken to ensure responsible and equitable use of the resources? What measures were explored to enhance positive impacts?	Renewable resource use relates mainly to water and electricity. The development is within an existing serviced industrial site; effluent is managed via neutralisation/filtration and stored for off-site removal, limiting potential impacts on surrounding systems.
1.7.1	Does the proposed project exacerbate the increased dependency on increased use of resources to maintain economic growth or does it reduce resource dependency (i.e. de-materialised growth)?	The PGM line supports resource efficiency by refining and recovering PGMs rather than selling aggregated material without refining, consistent with reducing resource dependency through improved beneficiation and higher value recovery per unit input. The facility is currently dependant on using grid electricity which in turn is largely dependant on using non-renewable fossil fuels. The national energy mix is however expected to move away from fossil fuel generation in the future.
1.7.2	Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra- and intergenerational equity, and are there more important priorities for which the resources should be used?	The use of resources is justifiable because the activity focuses on recovering high-value metals into saleable products while applying pollution control and effluent management measures; the DEA guideline emphasises public interest and sustainability outcomes rather than only private feasibility.
1.7.3	Do the proposed location, type and scale of development promote a reduced dependency on resources?	The location/type/scale promotes reduced resource dependency by using an existing industrial facility and shared abatement/effluent infrastructure, avoiding new land take and associated new services.



Ref No.	Question	Response
1.8	How were a risk-averse and cautious approach applied in terms of ecological impacts:	A risk-averse approach is applied through (i) controlled equipment and proven refining steps; (ii) batch sizing aligned to existing AEL-linked constraints; and (iii) maintained/enhanced abatement and effluent treatment (including additional pre-scrubbing and added filtration/neutralisation capacity). The proposed PGM line does not result in significant ecological impacts.
1.8.1	What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?	Some additional chemical quantities are theoretical estimates based on mass balances in the absence of practical test work; this introduces uncertainty in exact consumption and waste volumes at steady state. It will be a requirement for the facility to monitor their emissions to ensure compliance with the limits set down as part of the AEL.
1.8.2	What is the level of risk associated with the limits of current knowledge?	The associated risk is moderate but manageable because uncertainties relate to quantities/variability rather than unknown pathways, and the facility relies on established abatement, containment, neutralisation and off-site waste handling to control emissions and effluent risks. There will be a requirement for monitoring that can in turn allow for adaptive management and control.
1.8.3	Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?	A cautious approach is applied by conservative operational controls (including batch sizing aligned to regulatory limits) and ensuring emissions/effluent are treated through multi-stage abatement and effluent treatment prior to release/removal, consistent with the precautionary principle. Further a cautious approach was followed when running the air dispersion model in that it was assumed that emissions would be at the MES, when in reality it is expected that actual emissions will be well below these standards (based on existing emissions monitoring results).
1.9	How will the ecological impacts resulting from this development impact on people's environmental right in terms following?	Environmental-rights considerations relate mainly to air quality and effluent risk. The in-facility setting avoids additional land disturbance and the process employs abatement and effluent treatment, supporting protection of health and wellbeing consistent with the guideline. Significant ecological impacts are not anticipated.
1.9.1	Negative impacts: e.g. access to resources, opportunity costs, loss of amenity (e.g. open space), air and water quality impacts, nuisance (noise, odour, etc.), health impacts, visual impacts, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?	Potential negative impacts include nuisance/health risks from chemical fumes (e.g., HCl fumes, chlorine gas, NOx, NH3) and spill/effluent risks. These are mitigated by baghouse/scrubber systems, containment and effluent neutralisation/filtration, and off-site removal by registered contractors. Please refer to the Impact Assessment undertaken as well as the revised EMPr.



Ref No.	Question	Response
1.9.2	Positive impacts: e.g. improved access to resources, improved amenity, improved air or water quality, etc. What measures were taken to enhance positive impacts?	Positive impacts include improved resource recovery/beneficiation and better control/recovery steps that maximise metal recovery before effluent treatment.
1.10	Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts (e.g. on livelihoods, loss of heritage site, opportunity costs, etc.)?	Human wellbeing linkages are primarily through reduced exposure risk via effective abatement and effluent management, and through livelihoods supported by value-added refining/beneficiation within an established industrial node.
1.11	Based on all of the above, how will this development positively or negatively impact on ecological integrity objectives / targets / considerations of the area?	Overall ecological integrity impacts are expected to be low, given the hardstand in-facility setting and reliance on pollution control and effluent management infrastructure to prevent degradation.
1.12	Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the "best practicable environmental option" in terms of ecological considerations?	Alternatives selection supports the best practicable environmental option by avoiding greenfield expansion and using existing serviced industrial infrastructure, consistent with the guideline's mitigation hierarchy and best practicable option principles. No other discrete alternatives were identified.
1.13	Describe the positive and negative cumulative ecological / biophysical impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and existing and other planned developments in the area?	Cumulative biophysical impacts are expected to be limited and primarily additive within an existing industrial airshed/service environment; incremental contributions (emissions/effluent handling) are managed through in-facility abatement and effluent controls.
2	Promoting justifiable economic and social development	The PGM line improves beneficiation and economic viability by enabling sale of refined PGMs, supporting justifiable industrial development in an existing industrial area, consistent with the guideline's requirement to balance socio-economic benefits with ecological sustainability.
2.1	What is the socio-economic context of the area, based on, amongst other considerations, the following:	The project is within the Wadeville industrial node surrounded by industrial/commercial land uses with existing road access and services; the proposal is consistent with continuation/intensification of industrial land use on an appropriately zoned industrial site.
2.1.1	The IDP (and its sector plans' vision, objectives, strategies, indicators and targets) and any other strategic plans, frameworks or policies applicable to the area	The site is recorded as zoned Industrial and situated within an established industrial area, indicating spatial compatibility in principle. Please refer to Section 7 above for details on the other spatial development tools considered.



Ref No.	Question	Response
2.1.2	Spatial priorities and desired spatial patterns (e.g. need for integrated of segregated communities, need to upgrade informal settlements, need for densification, etc.),	Largely not applicable to an in-facility industrial expansion; the proposal does not create new settlements and does not drive urban sprawl.
2.1.3	Spatial characteristics (e.g. existing land uses, planned land uses, cultural landscapes, etc.), and	The surrounding land uses are industrial/commercial in character and the project remains within an existing industrial building footprint.
2.1.4	Municipal Economic Development Strategy (“LED Strategy”).	Beneficiation/value-add refining within an existing industrial node is generally supportive of industrial economic activity; confirm specifics against the current LED strategy where required.
2.2	Considering the socio-economic context, what will the socio-economic impacts be of the development (and its separate elements/aspects), and specifically also on the socio-economic objectives of the area?	Net socio-economic effect is expected to be positive due to improved value recovery and viability from selling refined PGMs and potential retention/creation of skilled employment.
2.2.1	Will the development complement the local socio-economic initiatives (such as local economic development (LED) initiatives), or skills development programs?	The project can complement local skills development by operating additional metallurgical/chemical processing equipment; any specific training/local procurement commitments should be recorded in the BAR/EMPr.
2.3	How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities?	Community needs/interests are addressed through sustaining industrial economic activity and employment while managing emissions and effluent to protect health and wellbeing in line with the guideline’s framing of justifiable development.
2.4	Will the development result in equitable (intra- and inter-generational) impact distribution, in the short- and long-term? Will the impact be socially and economically sustainable in the short- and long-term?	Impacts are expected to be equitably distributed given appropriate industrial zoning/location. Benefits accrue through economic activity/value recovery, while potential negatives (emissions/effluent) are mitigated via abatement and effluent treatment. Benefits are likely to be limited to medium term.
2.5	In terms of location, describe how the placement of the proposed development will:	Placement within an existing industrial facility optimises existing infrastructure and avoids new land take, aligning with efficient land use and reduced additional service burdens.
2.5.1	Result in the creation of residential and employment opportunities in close proximity to or integrated with each other.	Not directly applicable: the proposal does not create residential opportunities; it is an in-facility industrial expansion. Employment opportunities relate to the existing industrial node.



Ref No.	Question	Response
2.5.2	Reduce the need for transport of people and goods.	Using an existing facility reduces transport and infrastructure duplication relative to establishing a new site; logistics remain part of existing operations.
2.5.3	Result in access to public transport or enable non-motorised and pedestrian transport (e.g. will the development result in densification and the achievement of thresholds in terms of public transport),	Not directly applicable: the proposal does not alter settlement/public transport thresholds; the site remains accessible via the existing road network serving the industrial area.
2.5.4	Compliment other uses in the area,	The activity complements surrounding industrial land uses in Wadeville.
2.5.5	Be in line with the planning for the area.	In principle, the proposal aligns with planning intent for the area given the property's Industrial 3 zoning and established industrial character.
2.5.6	For urban related development, make use of underutilised land available with the urban edge.	Not applicable: the project is not an urban edge expansion; it is within an existing industrial erf/building.
2.5.7	Optimise the use of existing resources and infrastructure,	The project optimises existing resources by using existing abatement and effluent systems (with enhancements) and existing facility space.
2.5.8	Opportunity costs in terms of bulk infrastructure expansions in non-priority areas (e.g. not aligned with the bulk infrastructure planning for the settlement that reflects the spatial reconstruction priorities of the settlement),	Bulk infrastructure opportunity costs are expected to be low because the project is within existing serviced industrial infrastructure; confirm any incremental power/water needs with service providers if required.
2.5.9	Discourage "urban sprawl" and contribute to compaction / densification.	Not applicable: no new land development; the in-facility expansion supports compaction/intensification of existing industrial land use.
2.5.10	Contribute to the correction of the historically distorted spatial patterns of settlements and to the optimum use of existing infrastructure in excess of current needs,	Not directly applicable; however, the project supports efficient use of existing serviced industrial infrastructure.
2.5.11	Encourage environmentally sustainable land development practices and processes	Sustainable land development is promoted by avoiding greenfield disturbance and implementing pollution control and effluent treatment systems.
2.5.12	Take into account special locational factors that might favour the specific location (e.g. the location of a strategic mineral resource, access to the port, access to rail, etc.),	The industrial node is appropriate for chemical/metallurgical processing and is serviced by established transport and utilities typical of Wadeville.



Ref No.	Question	Response
2.5.13	The investment in the settlement or area in question will generate the highest socio-economic returns (i.e. an area with high economic potential).	Investment is directed to an established industrial node, likely yielding higher socio-economic returns than dispersing similar activity to new, unserved areas (qualitative; can be supported by municipal economic evidence if needed).
2.5.14	Impact on the sense of history, sense of place and heritage of the area and the socio-cultural and cultural-historic characteristics and sensitivities of the area, and	No additional impact on sense of place/heritage is anticipated because the development is within an existing industrial site footprint and does not introduce new landscape intrusion.
2.5.15	In terms of the nature, scale and location of the development promote or act as a catalyst to create a more integrated settlement?	Not applicable: the project does not create integrated settlements; it is an industrial process expansion.
2.6	How was a risk-averse and cautious approach applied in terms of socio-economic impacts:	Socio-economic risk is managed by implementing the project within an established industrial area and ensuring environmental controls protect health and wellbeing, consistent with the guideline's risk-averse approach.
2.6.1	What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?	Limits of knowledge include: some chemical usage increments are theoretical estimates pending operational validation; employment and economic multipliers are not quantified in the provided documents.
2.6.2	What is the level of risk (note: related to inequality, social fabric, livelihoods, vulnerable communities, critical resources, economic vulnerability and sustainability) associated with the limits of current knowledge?	Risk is low to moderate because uncertainties relate mainly to quantities and scaling rather than fundamental location suitability or major land-use change.
2.6.3	Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?	A cautious approach is applied by keeping the development within the existing industrial footprint, operating within AEL-linked constraints referenced for batching, and applying established environmental controls that reduce potential health/safety externalities.
2.7	How will the socio-economic impacts resulting from this development impact on people's environmental right in terms following:	
2.7.1	Negative impacts: e.g. health (e.g. HIV-Aids), safety, social ills, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?	Potential negatives relate to safety/health risks from chemical processing if unmanaged; these are addressed through abatement systems, containment and effluent treatment capacity, and hazardous chemical handling controls described for the facility.



Ref No.	Question	Response
2.7.2	Positive impacts. What measures were taken to enhance positive impacts?	Positive impacts include improved beneficiation/value recovery and potential employment retention/creation within an industrial node, alongside responsible effluent handling systems.
2.8	Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socioeconomic impacts will result in ecological impacts (e.g. over utilisation of natural resources, etc.)?	Locating within an existing industrial facility avoids ecological impacts typically linked to new development (land take/habitat loss). Any increase in throughput increases resource/chemical demand, managed via the facility's abatement and effluent treatment and contractor removal systems.
2.9	What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?	The preferred option (in-facility expansion) provides socio-economic benefits while minimising environmental harm by avoiding new footprints and using established control infrastructure, consistent with 'best practicable environmental option' principles.
2.10	What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons (who are the beneficiaries and is the development located appropriately)? Considering the need for social equity and justice, do the alternatives identified, allow the "best practicable environmental option" to be selected, or is there a need for other alternatives to be considered?	Environmental justice is supported by the appropriate industrial location and application of emissions/effluent controls to avoid externalising impacts onto surrounding communities, as required by the guideline.
2.11	What measures were taken to pursue equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?	Equitable access to benefits is supported through continued industrial economic activity and potential employment/procurement, while environmental management protects shared resources (air/water) through pollution control.
2.12	What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?	Life-cycle responsibility is addressed through on-site pollution prevention (abatement/containment) and controlled effluent treatment with off-site removal by registered contractors, reducing legacy contamination risk.
2.13	What measures were taken to:	
2.13.1	Ensure the participation of all interested and affected parties.	Please refer to Appendix E for the full description of the public participation.



Ref No.	Question	Response
2.13.2	Provide all people with an opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation,	Please refer to Appendix E for the full description of the public participation.
2.13.3	Ensure participation by vulnerable and disadvantaged persons,	Please refer to Appendix E for the full description of the public participation.
2.13.4	Promote community wellbeing and empowerment through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means,	Please refer to Appendix E for the full description of the public participation.
2.13.5	Ensure openness and transparency, and access to information in terms of the process,	Please refer to Appendix E for the full description of the public participation.
2.13.6	Ensure that the interests, needs and values of all interested and affected parties were taken into account, and that adequate recognition were given to all forms of knowledge, including traditional and ordinary knowledge,	Please refer to Appendix E for the full description of the public participation.
2.13.7	Ensure that the vital role of women and youth in environmental management and development were recognised and their full participation therein will be promoted?	Please refer to Appendix E for the full description of the public participation.
2.14	Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community (e.g. a mixture of low-, middle-, and high-income housing opportunities) that is consistent with the priority needs of the local area (or that is proportional to the needs of an area)?	Not directly applicable in the housing sense; for an industrial project, opportunities relate to employment and local procurement. Please refer to Appendix E for the full description of the public participation.
2.15	What measures have been taken to ensure that current and / or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected?	The process involves hazardous chemicals and high-temperature operations; worker protection should be ensured through OHS systems, training, and operational controls aligned with the hazardous chemical handling and controls described for the facility.
2.16	Describe how the development will impact on job creation in terms of, amongst other aspects:	Additional equipment for the PGM line may require additional operational capacity and skills; however, job numbers and split (temporary/permanent) are not quantified in the provided documents and should be confirmed by the applicant.



Ref No.	Question	Response
2.16.1	The number of temporary versus permanent jobs that will be created.	Not quantified. Limited new job opportunities as a result of the continuation of existing activities.
2.16.2	Whether the labour available in the area will be able to take up the job opportunities (i.e. do the required skills match the skills available in the area).	N/A
2.16.3	The distance from where labourers will have to travel.	N/A
2.16.4	The location of jobs opportunities versus the location of impacts.	Benefits and impacts are co-located within the industrial area; emissions/effluent risks are managed through controls.
2.16.5	The opportunity costs in terms of job creation.	Opportunity costs are low because no new land take occurs and there is no displacement of other land uses.
2.17	What measures were taken to ensure:	
2.17.1	That there were intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment.	AEL application currently underway. Please refer to Appendix E for the full description of the public participation.
2.17.2	That actual or potential conflicts of interest between organs of state were resolved through conflict resolution procedures.	N/A
2.18	What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage?	Public trust principles are supported by avoiding new footprint disturbance and applying pollution prevention controls to protect shared environmental resources (air/water), consistent with the guideline.
2.19	Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left?	Mitigation is realistic because abatement and effluent treatment systems (including enhancements) are identified as part of the facility design and effluent is removed by registered contractors—reducing unmanaged legacy risk.
2.20	What measures were taken to ensure that the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects will be paid for by those responsible for harming the environment?	Costs of pollution prevention and waste management are borne by the operator through implementation/maintenance of control systems and use of accredited waste contractors, consistent with NEMA principles referenced in the guideline.



Ref No.	Question	Response
2.21	Considering the need to secure ecological integrity and a healthy bio-physical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the best practicable environmental option in terms of socio-economic considerations?	The best practicable option is the in-facility expansion because it delivers beneficiation/value recovery while minimising environmental/social costs associated with new land development, consistent with the guideline's alternatives and mitigation hierarchy logic.
2.22	Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and other planned developments in the area?	Cumulative socio-economic effects are expected to be positive through increased beneficiation/value recovery within an established industrial node. Any cumulative negatives relate to incremental emissions/effluent demands, managed through abatement and effluent controls.



10. THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED

(consider when the activity is *expected to be concluded*)

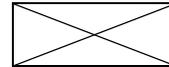
The listed activity requires an Atmospheric Emissions Licence (AEL). Therefore, it is recommended that the environmental authorisation remain valid as long as the AEL is in effect.

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





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.



Appendix A: Site plan(s)



Appendix B: Photographs



Appendix C: Facility illustration(s)



Appendix D: Route position information

THIS APPENDIX IS NOT APPLICABLE TO THIS APPLICATION



Appendix E: Public participation information



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

THIS APPENDIX IS NOT APPLICABLE TO THIS APPLICATION



Appendix G: Specialist reports



Appendix H: EMPr



Appendix I: Other information

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