

ArcelorMittal South Africa Limited

2022 External Environmental Performance Audit
on the RoD for the Carbon Separation Plant

Vanderbijlpark, Gauteng Province

21 April 2022

Prepared for:

Ilze Broekman

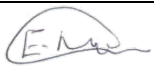
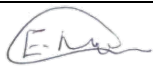




Of

ArcelorMittal: Vanderbijlpark Steel



CIG/ENVSOL/22/PROJ/0085

QUALITY MANAGEMENT

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Author	Malebogo Mosepele	Malebogo Mosepele	
			
Reviewed By	Renee Janse van Rensburg	Renee Janse van Rensburg	
			
Authorised By	Jacques Harris	Jacques Harris	
			

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CIG/ENVSOL/22/PROJ/0085**DECLARATION OF INDEPENDENCE**

CIGroup Environmental (Pty) Ltd (CIGroup), as the Environmental Solutions specialists, were appointed by ArcelorMittal to conduct the 2022 External Environmental Performance Audit on the RoD for the Carbon Separation Plant. CIGroup does not have a vested interest in the proposed activity proceedings, will not engage in and have no conflicting interest in the undertaking of the activity. CIGroup has provided all information at their disposal regarding the external audit, whether such information is favourable to the Client or not.



Malebogo Mosepele**Environmental Advisor**

CIGroup Environmental (Pty) Ltd

21 April 2022

Date

CIG/ENVSOL/22/PROJ/0085**EXECUTIVE SUMMARY**

ArcelorMittal South Africa Vanderbijlpark Works (ArcelorMittal) is one of the world's largest inland steel mills and the largest supplier of flat steel products in sub-Saharan Africa. The central focus is to maintain and grow its established share of the local market through development of additional value-added products and a focus on industry partnerships. Its international position is being refined by focusing on identified high profit export markets and meeting international levels of operational excellence, product quality and customer satisfaction.

The plant's steel products are manufactured in an integrated process. Raw materials such as iron ore, coke and fluxes are charged to blast furnaces where they are converted to liquid iron. The liquid iron is refined in basic oxygen furnaces to produce liquid steel. The liquid steel is cast into slabs, which are hot rolled into heavy plate in a plate mill, or into coils in a strip mill. The coils are either sold as hot rolled sheets in coil or processed further into cold rolled and coated products, such as hot dip galvanized, electro galvanized and pre-painted sheet.

AMSA was issued a Record of Decision (RoD) by the Gauteng Department of Agriculture, Conservation and Environment (GDACE), now the Gauteng Department of Agriculture and Rural Development (GDARD), for the installation and operation of a Carbon Separation Plant (CSP) (**RoD number: GAUT 002/05-06/0510**) in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and the Environmental Impact Assessment Regulations, 2006.

In terms of the RoD, AMSA is required to appoint an independent external auditor, to conduct an Environmental Performance Audit (EPA) on compliance with the conditions of the RoD on an annual basis. CIGroup was appointed to undertake the EPA audit for 2021. The external auditor's assessment was based on the information provided, interviews conducted, and observations made during the site inspection on 22 March 2022. This information was inputted into a compliance checklist and informed the external auditors' determination of compliance.

The external auditor found ArcelorMittal to be compliant to all conditions of the RoD. It is evident to the external auditor that the amount of effort and continuous actions undertaken at AMSA have resulted in the significant level of compliance to the RoD presented in this External Audit Report.

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1 INTRODUCTION

CIGroup Environmental (Pty) Ltd (CIGroup) was appointed by ArcelorMittal South Africa (AMSA) Vanderbijlpark Works to conduct the 2022 External Environmental Performance Audit (EPA) on the Record of Decision (RoD) issued for the Carbon Separation Plant (CSP). The AMSA Vanderbijlpark Works is located in Vanderbijlpark, in the Gauteng Province (**Figure 1.1**).

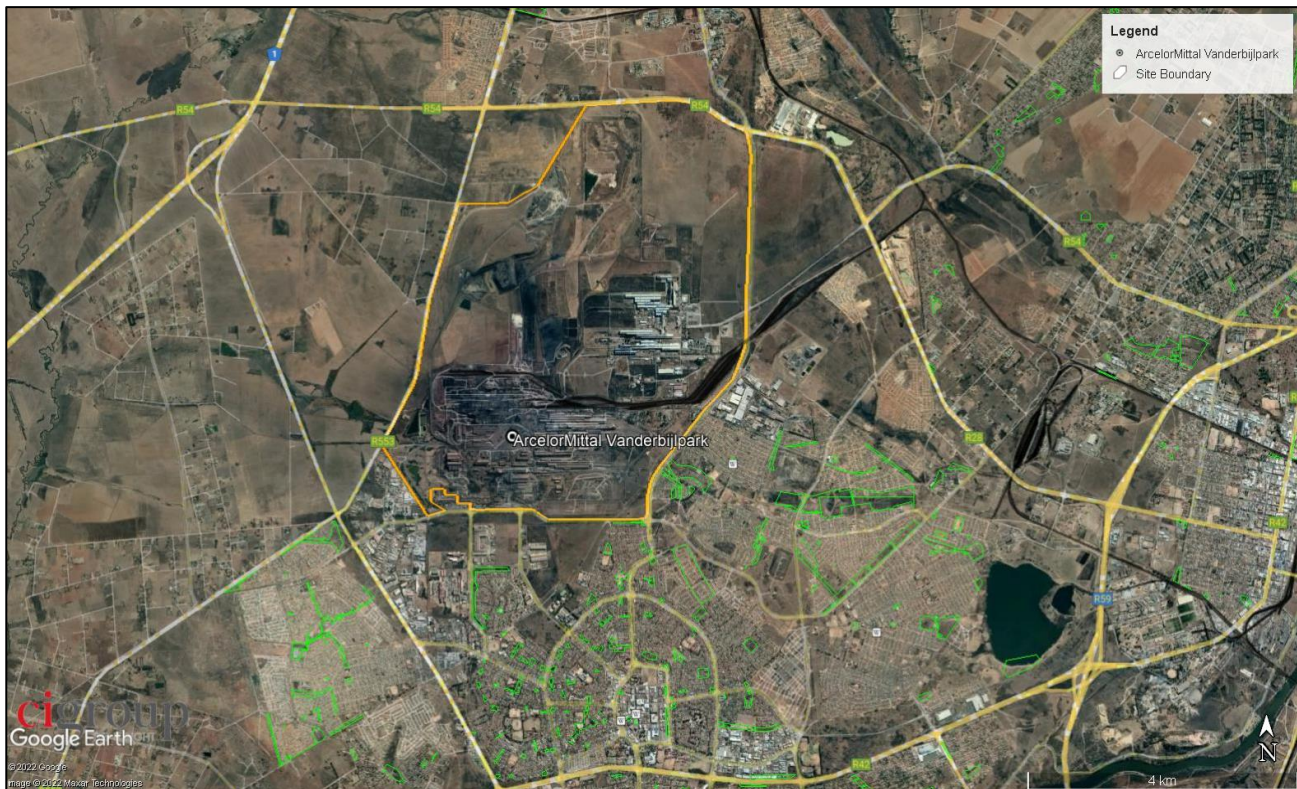


Figure 1.1: Location of the ArcelorMittal Vanderbijlpark Works.

1.1 Background

The Vanderbijlpark Works is one of the world's largest inland steel mills and the largest supplier of flat steel products in sub-Saharan Africa. The central focus is to maintain and grow its established share of the local market through development of additional value-added products and a focus on industry partnerships. Its international position is being refined by focusing on identified high profit export markets and meeting international levels of operational excellence, product quality and customer satisfaction.

The plant's steel products are manufactured in an integrated process. Raw materials such as iron ore, coke and dolomite are charged to blast furnaces where they are converted to liquid iron. The liquid iron is refined in basic oxygen furnaces to produce liquid steel. The liquid steel is cast into

slabs, which are hot rolled into heavy plate in a plate mill, or into coils in a strip mill. The coils are either sold as hot rolled sheets in coil or processed further into cold rolled and coated products, such as hot dip galvanized, electro galvanised and pre-painted sheet.

A Record of Decision (RoD) was issued to ArcelorMittal for the installation and operation of a carbon separation plant (CSP) (RoD number: GAUT 002/05-06/0510) in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and the Environmental Impact Assessment Regulations, 2006.

In terms of the RoD, AMSA is required to appoint an independent external auditor, to conduct an Environmental Performance Audit (EPA) on compliance with the conditions of the RoD on an annual basis. CIGroup was appointed to undertake the EPA audit for 2021.

2 EXTERNAL AUDIT PROCESS

Before initiating an external audit, the importance and objective of the audit must be fully understood.

The importance of an external audit is that it is viewed as a management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental management is performing with the aim of contributing to safeguarding the environment. An external audit is a systematic process that must be carefully planned, structured and organised. Since it forms part of a long term process of evaluation and checking, it needs to be a repeatable process which can be readily replicated by (if necessary) different teams of people in such a way that the results are comparable and can reflect change in both a quantifiable and qualifiable manner.

The objective of this External Audit is to evaluate and assess the level of compliance of the ArcelorMittal Vanderbijlpark Works with the conditions of the RoD. Through a methodical examination of the RoD ArcelorMittal will be able to assess not only their compliance to the RoD, but also determine how the operating philosophy at the works is being practically implemented to ensure environmental compliance at all levels of operation.

2.1 Appointment of the External Auditor

ArcelorMittal is required to appoint an independent external auditor with expertise to undertake the environmental performance audit in question. In this regard, ArcelorMittal appointed Ms. Malebogo Mosepele of CIGroup Environmental (Pty) Ltd (CIGroup). Malebogo has over 4 years' experience in integrated environmental authorisation processes, environmental audits, and compliance

management for industrial and mining clients. She has knowledge of numerous environmental specialist fields which enables her to apply a holistic environmental approach to site assessments and audits. Malebogo's qualifications and professional affiliations are presented in **Table 2.1**

Table 2.1: Details of the Independent External Auditor.

NAME:	Malebogo Mosepele
DESIGNATION:	Environmental Advisor
COMPANY:	CIGroup Environmental (Pty) Ltd
HIGHEST QUALIFICATION:	MSc Environmental Science and Management
PROFESSIONAL AFFILIATIONS:	<ul style="list-style-type: none"> • International Association for Impact Assessment South Africa (IAIASa), Membership No.: 6050 • South African Council for Natural Scientific Professions (SACNASP), Membership No.: 120181 • Environmental Assessment Practitioner Association of South Africa (EAPASA), application under adjudication

The signed Declaration of Independence of the external auditor is provided in **Appendix A**.

2.2 Confirming the Scope of the Audit

After appointment of the external auditor, the scope of the external audit must be clearly defined and agreed to between the external auditor and the organisation being audited. The scope of the external audit must align with the requirement of the RoD to undertake regular performance assessments of compliance to the conditions of the RoD.

The scope of this audit was therefore agreed to as the annual external EPA of AMSA's performance against and compliance to the conditions of the RoD and, more generally, the provisions of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA).

2.3 Audit Preparation and Planning

Prior to undertaking the external audit, the external auditor needs to plan and prepare for the audit. Preparation for the external audit involves reviewing the conditions of the RoD and developing a compliance checklist to ensure that no conditions are overlooked. In addition to compiling the compliance checklist, the external auditor may request supporting documentation from the organisation to confirm and/or verify some of the conditions of the RoD. On completion of this preparation, the external auditor will plan the audit ensuring that enough time is assigned to the audit and site inspection to allow all aspects of the audit to be undertaken within the pre-agreed time. Planning a good audit program is integral to ensuring effective audit management.

To prepare for ArcelorMittal's External RoD Audit, the external auditor reviewed the 11-pages RoD provided by ArcelorMittal in an electronic format and developed an Excel-based compliance checklist for each condition specified in the RoD. Following on from the checklist development, the external auditor requested supporting documentation from ArcelorMittal to be provided in an electronic format. The information requested by the external auditor included the following:

- Internal audit reports (from date of last audit to present);
- Past external audit reports;
- Record of environmental incidents (i.e. public complaints and reportable incidents);
- Reportable incidents during the period that is audited;
- Monitoring data;
- Procedures and electronic Environmental Management System (EMS);
- Proof of submission of specific information to the Department.

It was agreed between the external auditor and ArcelorMittal that compliance checklist would be completed virtually with a site inspection undertaken thereafter. It was agreed between the external auditor and ArcelorMittal that the site inspection could be undertaken and completed within one (1) day, provided all the requested supporting documentation was available on the day of the site inspection.

2.4 Conducting the Audit and Site Inspection

Once the scope of the audit has been confirmed and the preparation and planning completed, the external auditor will conduct the audit and undertake the site inspection. In this case it was however, agreed between the external auditor and ArcelorMittal that the audit would be undertaken virtually with site inspection thereafter. The external audit was initiated on Monday, 7 March 2022 with Ms Ilze Broekman of ArcelorMittal sending through electronic documents to the external auditor for review and reporting.

The external audit site inspection for the ArcelorMittal Vanderbijlpark Works was undertaken on Tuesday, 22 March 2022. On arrival at ArcelorMittal Vanderbijlpark Works, the external auditor met with the following representative of ArcelorMittal:

- Ms. Ilze Broekman (Superintendent Environmental Compliance);

Following the site inspection, and on receipt of all requested information, the external auditor approached the audit report development as follows:

1. Review of supporting documentation provided;
2. Secondary discussion and assessment of compliance to the conditions of the RoD, based on site inspection; and

3. Report development.

The external audit site inspection was concluded on Tuesday, 22 March 2022, as planned.

3 CIGROUP'S RISK-BASED AUDIT APPROACH

CIGroup employ a risk-based approach to all audits undertaken. Risk is a measure of future uncertainties in achieving quantifiable performance goals and objectives within defined cost, schedule and performance constraints. Risk can be associated with all aspects of a facility or operation, such as a system, project, plan, license, permit, or authorisation, or the receiving environment itself and addresses the potential variation in a planned approach and its expected outcome.

Audit assessments are a continual process, performed throughout the life cycle of a facility or operation and has an organised methodology for continuously assessing legal compliance obligations; identifying non-conformances; selecting, planning, and implementing appropriate remedies; and tracking the implementation thereof to ensure successful application (**Figure 3.1**).

3.1 Compliance Assessment

The assessment of compliance, most notably the identification of non-compliances, is an essential part of a risk-based audit approach. Compliance can only be achieved or not achieved, and the subjective assessment of non-compliance must be avoided. The intent of non-compliance identification is to answer the question "Is the organisation compliant to legislative requirements?"

This is assessed by:

- Developing a compliance checklist;
- Conducting interviews with relevant personnel;
- Reviewing documentation;
- Visually inspecting activities;
- Reviewing potential shortfalls against expectations; and
- Analysing negative trends.

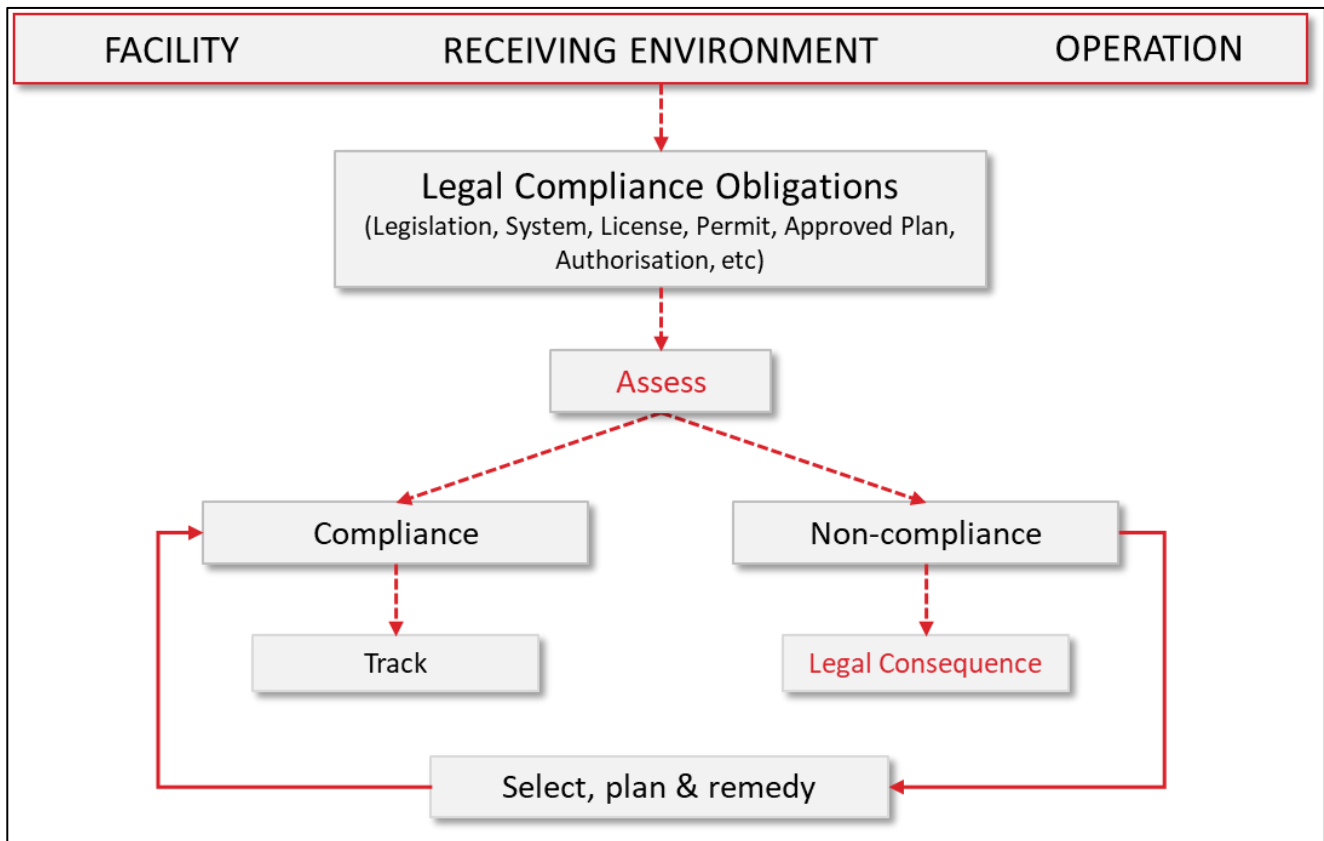


Figure 3.1: Risk-based Audit Approach.

In order to understand a non-compliance, the external auditor should effectively examine a condition, commitment and/or mitigation by drilling down into system, project, plan, license, permit, or authorisation elements to a level of detail that permits the auditor to understand the extent and significance of the non-compliance and to identify its root cause(s). Root causes are those potential events/actions that auditors determine would adversely affect the facility or operation at any time in its life cycle. An approach for identifying and compiling a list of root causes is to:

- Identify system, project, plan, license, permit, or authorisation elements;
- Examine each in terms of compliance sources or areas;
- Determine what could go wrong; and
- Ask “why” multiple times until the source(s) is discovered.

CIGroup allows for only four (4) possible assessment categories, namely **compliant, non-compliant, noted or not applicable**. Each assessment category is explained in more detail in **Table 3.1**.

Table 3.1: Assessment Categories.

CATEGORY	DESCRIPTION
Compliant	The condition, commitment and/or mitigation has been achieved and verified either through documentary proof, site verification, interviews or sampling.
Non-compliant	The condition, commitment and/or mitigation has not been fully complied with. Any condition, commitment and/or mitigation that is considered undetermined or which needs to be revised in accordance with current practise is immediately assigned non-compliant status.
Noted	The condition, commitment and/or mitigation does not require a specific response, where statements made that do not require a compliance assessment, or when no specific commitment or mitigation has been provided.
Not Applicable	The condition, commitment and/or mitigation is not applicable, has been completed, or is not yet relevant but will be relevant for future activities.

3.2 Compliance Analysis

On completion of the compliance assessment, compliance analysis is undertaken with the aim of answering the question "How substantial is the finding?" This is achieved by:

- Examining the identified non-compliance to refine the description of the finding, isolate the cause, determine the effects, and aid in setting priorities and strategies to remedy non-compliance; and
- Identifying the potential consequences of the non-compliance, including fines or criminal prosecution.

The objective is to gather enough information about the non-compliance root cause to allow the auditor to identify potential remedial action, and to document all such findings in an executable way.

3.3 Determination of Level of Effort or Action

Once the compliance assessment and analysis have been completed, the level of effort or action required to maintain or achieve compliance associated with each condition, commitment and/or mitigation is identified. This is achieved by asking the question "How much effort or what level of action is required to maintain or achieve compliance for this condition, commitment and/or mitigation?" The level of effort or action is classed in four (4) classes as **none**, **low**, **medium**, or **high**.

3.4 Identification of Remedial Action Options

The intent of identification of remedial action options is to answer the question “What is the approach for addressing this non-compliance and reducing the level of risk?”

Remedial action identification is the activity that identifies, evaluates, and selects options to set findings at acceptable levels given facility, operation, system, project, plan, license, permit, authorisation, or receiving environment constraints and objectives. Remedial action identification includes the specifics of what should be done, when it should be accomplished, who is responsible, and the funding required to implement the option. The most appropriate approach is selected from the remedial action options listed below and documented in the audit report:

- Avoiding activity by eliminating the root cause and/or the consequence;
- Controlling the cause or consequence; and
- Assuming the level of risk and continuing the current program plan.

For each root cause or risk, the type of remedial action must be determined, and the details of the action described. Identification of remedial action options is only done for identified non-compliances.

3.5 Risk-Based Audit Reporting Matrix

CIGroup’s risk-based audit reporting matrix makes use of a typical risk matrix in the 4 x 4 configuration which factors the compliance assessment into the analysis of the potential risk. The compliance assessment for each condition, commitment and/or mitigation is reported in the matrix rows as non-compliant, compliant, noted and not applicable. The results for each compliance assessment are then plotted in the corresponding single square on the Risk-Based Audit Reporting Matrix. Once the compliance assessment for each condition, commitment and/or mitigation have been assessed, the level of effort or action required to meet or maintain the condition, commitment and/or mitigation is established in the matrix columns and identified as none, low, medium and high (**Figure 3.2**).

Finally, the level of risk is reflected through the colour coding of the reporting matrix. The risk determination considers the likelihood of the facility or operation to cause harm to the environment. The level of risk is classed in four (4) classes as low, minor, moderate, or major (**Figure 3.3**).

Audit Findings		Number of Conditions	Level of Effort/Action			
			None	Low	Medium	High
Compliance Assessment	Non-compliant	-				
	Noted	-				
	Not Applicable	-				
	Compliant	-				
	Total	0	0	0	0	0

Figure 3.2: Illustrative Risk-Based Audit Reporting Matrix.

Audit Findings		Number of Conditions	Level of Effort/Action			
			None	Low	Medium	High
Compliance Assessment	Non-compliant	-	Low	Moderate	Major	Major
	Noted	-	Low	Minor	Moderate	Major
	Not Applicable	-	Low	Minor	Minor	Moderate
	Compliant	-	Low	Low	Low	Minor
	Total	0	0	0	0	0

Figure 3.3: Illustrative Level of Risk Reporting Matrix.

4 RoD AUDIT FINDINGS

The assessment of the level of compliance of ArcelorMittal with the conditions of the RoD are presented in the compliance checklist in **Table 4.1** overleaf. **Table 4.1** also includes the compliance analysis and level of effort or action required to maintain or achieve compliance. Finally, remedial actions are proposed for all non-compliant conditions.

Table 4.1: RoD Compliance Checklist.

NO	APPROVED MITIGATION MEASURES	COMPLIANCE CATEGORY	COMPLIANCE ANALYSIS - CIGROUP	LEVEL OF EFFORT/ACTION	PROPOSED MITIGATION MANAGEMENT OPTION	AND/OR
3.1	Description and extent of the activity					
	The authorisation applies in respect of the construction and operation of the Carbon Separation Plant using Winnowing technology (air separation mechanism) within the existing Magnetic Separation plant and/or building at ArcelorMittal South Africa (Vanderbijlpark Works), as part of the project to change management of dolochar disposal to reuse. The project falls within the ambit of sub-regulations 1 (c) (ii) of GN R, 1182 (as amended) promulgated under section 21 of the Act. The extent of the project and process is summarised as follows:	Noted	This condition is noted and subsequent to the granting of the authorisation the authorised activities have not changed.	None	-	
a.	ArcelorMittal South Africa (Vanderbijlpark Works) proposed carbon separation process entails the utilisation of the currently dumped by-product called dolochar.	Noted	This condition is noted.	None	-	
b.	Dolochar consists of two size fractions i.e., +1mm and -1mm and contains carbon rich material i.e. -Hm fraction and it is proposed that it will replace virgin material (fine coal) at Electric Arc Furnaces thus reducing dumping of +1mm dolochar by ca 36% (in mass).	Noted	This condition is noted.	None	-	
c.	The proposed carbon separation process will use Winnowers (air separation mechanism) and it is a wholly dry process, and as a result, no effluent will be generated throughout the whole process.	Noted	This condition is noted.	None	-	
d.	The carbon separation will comprise of the following process: 1) Screening - the winnowing process depends on particle size as well as density, so the winnower feed is also separated into two size fractions. Accordingly the dolochar from the direct reduction process is screened into four size fractions. The two size fractions of winnower feed constitute about 5000 t/month and each fraction is processed in the winnowers separately to recover the carbon. Each winnower feed size fraction is processed by a pair of winnowers in a series and in the coarse separation the dolochar is separated into three fractions i.e.	Noted	This condition is noted.	None	-	

NO	APPROVED MITIGATION MEASURES	COMPLIANCE CATEGORY	COMPLIANCE ANALYSIS - CIGROUP	LEVEL OF EFFORT/ACTION	PROPOSED MITIGATION MANAGEMENT OPTION AND/OR
	tailings (ash), middlings (ash/carbon blend) and concentrate (carbon-rich dolochar).				
	2) Winnower - in this process, feed materials that are separated by density. Particle size also plays a major part. The winnowing process is a two stage coarse separation and refined separation. Eight pairs of winnowers process the material and each winnower is tuned to have exactly the correct airflow across it to suit the feed material. The airflow is controlled by a pressure controller which controls the pressure downstream of the winnower. In this way the constant flow of air is generated across the falling curtain of dolochar, The airflow is generated by the induced draft fan of the electrostatic precipitator (ESP) and the densest material is the ash due to iron and other metals being entrapped in it.	Noted	This condition is noted.	None	-
3.2	Specific Conditions				
3.2.1	Authorisation is only granted for the Winnowing carbon separation plant within the Magnetic Separation Plant at the existing ArcelorMittal South Africa (Vanderbijlpark Works) direct reduction area and/or building.	Compliant	AMSA complies to the condition. The plant is however not operational at this stage.	Low	-
3.2.2	An updated project schedule with time-frames must be submitted to the Department within 30 (thirty) calendar days of the commencement of construction activities. The schedule must clearly indicate the different phases of construction (as applicable) and commissioning.	Compliant	This condition was previously complied with. The previous ROD owner was responsible for compliance to this condition.	Low	-
3.2.3	The Department must be informed of the start of commissioning at least 30 (thirty) calendar days prior to the commencement thereof.	Compliant	The Department was informed 2011. The plant was however not operational continuously due to the loss of the internal re-use at the EAF due to plant closure and the loss of the external market due to low market demand.	Medium	-
3.2.4	Final design plans for storm water management system must be provided to the Department 30 (thirty) calendar days prior to the commencement of construction. The above design plans must include information on specific pollution prevention measures (e.g., impermeable layers, leak detection systems, etc.) and compliance with relevant SABS standards.	Compliant	AMSA has noted that a stormwater management plan and sketch for the whole Director-Reduction (DR) area was submitted. The previous owner was responsible for compliance to this condition. It should be noted that this area is located on the second floor and no water or effluent is present.	Medium	-

NO	APPROVED MITIGATION MEASURES	COMPLIANCE CATEGORY	COMPLIANCE ANALYSIS - CIGROUP	LEVEL OF EFFORT/ACTION	PROPOSED MITIGATION MANAGEMENT OPTION AND/OR
3.2.5	Should any effluent be generated from the CSP, it must be segregated into concentrated and dilute effluents in order to allow the Zero Effluent Discharge system to function optimally.	Not Applicable	This condition is noted as not applicable, since the plant does not use water or generate effluent when operational. The plant is not operational at this stage.	None	-
3.2.6	An auditable Preventative Maintenance Plan must be developed to ensure that all environmentally critical equipment such as dust extraction system, electrostatic precipitator (ESP), and others are maintained as required. The management of ArcelorMittal South Africa (Vanderbijlpark Works) is to commit to the budget to undertake the required preventative maintenance. A discussion on the implementation of and compliance with the maintenance plan must be included in the bi-annual audit reports,	Compliant	AMSA has developed and implemented a Preventative Maintenance Plan for all equipment. Various job cards can also be formulated from this electronic system. However it should be noted that Carbon Separation Plant has not been operational. Therefore no scheduled maintenance is currently conducted.	Medium	-
3.2.7	A finalised and detailed Environmental Management Plan (EMP) for the implementation of the project must be submitted to the Department for approval 30 (thirty) calendar days prior to the commencement of construction activities. The EMP must specifically include, inter alia the following: a) An auditable plan for monitoring all facets of the CSP project implementation and operation. b) Air quality monitoring program based on the requirements of Condition 3.2(8).	Compliant	AMSA has a EMP in place.	Medium	-
3.2.8.1	In order to provide empirical data which will verify the assumptions made in the air quality report, the following air quality management, monitoring and reporting regime must be implemented and reported on in the bi-annual environmental performance audits as applicable: The stack monitoring must be conducted annually and the following parameters must be tested for: - PM 10 - PM 2.5	Compliant	Note that the plant has not been operational since 2011. However, all monitoring is conducted on a continuous basis AMSA. The monitoring data reviewed is therefore not a true representation of the CSP emission performance as the plant is not operational.	Low	-
3.2.8.2	The monitoring results for the above parameters must be graphically represented and included in the bi-annual audit report. Emissions must be presented at the following reference conditions: 273 Kelvin, 101, 3 kPa. Condition amended on (19/06/2012)	Compliant	The data is recorded in line with this requirement.	Medium	-
3.2.8.3	The stack must be so designed that if the monitoring results in the first year indicate that there is a need for	Noted	This condition is noted.	None	-

NO	APPROVED MITIGATION MEASURES	COMPLIANCE CATEGORY	COMPLIANCE ANALYSIS - CIGROUP	LEVEL OF EFFORT/ACTION	PROPOSED MITIGATION AND/OR MANAGEMENT OPTION
	further or improved mitigation then additional technology can be easily installed in the stack,				
3.2.8.4	A long-term Air Quality Management and Audit Plan must be compiled for the ArcelorMittal South Africa (Vanderbijlpark Works) CSP and Magnetic Separation Plant based on the outcome of the above monitoring results. These plans must consider international standards and best practice.	Compliant	A long term Air Quality Management Monitoring system for all the CSP is in place. ArcelorMittal considers all applicable standards, since it is within the Vaal Air Priority Area and has very strict conditions in its existing Air Emissions Licence (AEL) (0003/SDM/2012).	Low	-
3.2.8.5	Considering that ArcelorMittal South Africa (Vanderbijlpark Works) intends increasing its production capacity and is located within a hotspot area, it is therefore essential that ArcelorMittal South Africa (Vanderbijlpark Works) consider lowering the emissions more than the applicable standards require. The emission reduction strategies must be developed to make provision for the new local and applicable international standards.	Compliant	An Emission Reduction Strategy is in place. This policy was reviewed in June 2019 and includes reduction projects and sets out the dust monitoring results/inventories and findings. Based on the outcomes of the results and findings different projects are then created and implemented site wide.	Low	-
3.2.9	Detailed and up to date records must be kept of all incidents and complaints pertaining to the CSP project, how these were managed, and the prevention of their recurrence thereof. These records must be made available to the Department within 14 (fourteen) calendar days upon written request by the Department.	Compliant	AMSA keeps detailed and up to date records of all environmental incidents reported at the DR plant. The complaints register is also kept on site and since the CSP has not being operational no complaints have been noted.	Low	-
3.2.10	This Department and the Department of Water Affairs and Forestry must be informed of any major environmental and pollution incidents relating to the CSP project within 24 (twenty four) hours of such incidents occurring.	Noted	This condition is noted and no such incidents have occurred.	None	-
3.2.11	ArcelorMittal South Africa (Vanderbijlpark Works) must consider using flared waste gases from Coke Ovens and other sources within the industry as a fuel resource for auxiliary equipment.	Compliant	The use of Coke Oven Gas or Blast Furnace gas as fuel for auxiliary equipment was said to be technically unfeasible. Waste gasses are used to generate steam and electricity and are already used as an energy source throughout the works.	Medium	-
3.2.12	AMVW must investigate the potential of using the existing dumped or stored dolochar as input material into the CSP. This must be reported in the quarterly progress report/s.	Compliant	AMSA has investigated this potential on the recyclability of recovering the material from the disposal site. The material is mixed and therefore not reclaimable for use as input material. Dolochar cannot be stored separately as this would create a dust nuisance.	Medium	-
3.2.13	The operation of the CSP and the Magnetic Separation plant as a whole must comply with the Occupational Health and Safety Act (No. 85 of 1993) and sound occupational hygiene procedures implemented and	Compliant	AMSA has Health and Safety procedures in place are conducted on a yearly basis dependable on the specific legislative requirements site wide. ISO 18001 certification was maintained in 2017.	Medium	-

NO	APPROVED MITIGATION MEASURES	COMPLIANCE CATEGORY	COMPLIANCE ANALYSIS - CIGROUP	LEVEL OF EFFORT/ACTION	PROPOSED MITIGATION AND/OR MANAGEMENT OPTION
	improved upon. Engineering control measures must be considered as first choice for mitigation.				
3.2.14	The CSP must be integrated into the existing AMVW ISO system	Compliant	This condition is adhered to and the whole site is ISO accredited.	Low	-
3.2.15	The recommendations contained in the Specialist studies submitted in support of the application for authorisation of the CSP project are regarded as an extension of the conditions of this authorisation. Implementation or compliance with these recommendations must be discussed as part of the quarterly progress reports and biannual performance audits thereafter.	Compliant	After the specialist studies we conducted, a summary of all requirements that were submitted under these studies were made. These requirements are included for all audit purposes and all additional requirements are considered.	Low	-
	- Verify the emission rate used in the air quality modelling at 50mg/Nm3	Compliant	The plant has not been operational since 2011 when commissioning occurred due to a lack of a market demand. At short periods when the plant was operational the stack emissions still complied with the emission limit of 50 mg/Nm3.	Low	-
	- It is recommended that the Sinter Plant emissions be abated.	Compliant	A bag house at a cost of R 260 million was installed and commissioned at Vanderbijlpark Works which reduced the emissions significantly.	Low	-
	- Continue with continuous ambient air quality monitoring to verify ambient concentration of PM10 to verify predicted concentrations	Compliant	Ambient air quality stations are operational at Vanderbijlpark Works	Low	-
	- Establish a continuous ambient air quality monitoring station to measure PM 2.5 concentrations.	Compliant	A PM2.5 monitor has been installed at 1 of the locations mentioned above.	Low	-
	- Maximise local procurement and employment through ensuring that local contractors are supported in being made aware of contract opportunities that may become available, should the proposed Carbon Separation Plant be implemented.	Compliant	Mintek was the supplier of the equipment and technology	Low	-
	- Where competence, cost and ability to maintain schedule are comparable between different competing contractors/service providers, preference should be given to locally based contractors/service providers	Compliant	Mintek was the supplier of the equipment and technology	Low	-
	- It is recommended that the Mittal Steel Vanderbijlpark Occupational Health and Safety team be drawn closer into the project team during refinements of the design and construction of the proposed	Compliant	At the time this condition was applicable the ROD was under the ownership of Coke and Chemicals. No record of meetings or discussions was available. From project documentation it could however be seen that the supplier of the equipment and design considered health and safety matters.	Low	-

NO	APPROVED MITIGATION MEASURES	COMPLIANCE CATEGORY	COMPLIANCE ANALYSIS - CIGROUP	LEVEL OF EFFORT/ACTION	PROPOSED MITIGATION MANAGEMENT OPTION AND/OR
	- Include the proposed Carbon Separation Plant in the existing Mittal Steel Vanderbijlpark Works Hygiene surveillance programme, as well as the annual internal and third party audit programme (Administrative controls).	Compliant	The entire DR plant is part of the occupational health survey schedule.	Low	-
	- Baseline monitoring must be conducted within the first 12 months of operation to determine, in particular, worker exposure to dust, noise, and vibration. This baseline should be compared with applicable occupational health exposure levels.	Compliant	Occupational health surveys have been completed in 2020.	Low	-
	- Ensure that the existing emergency response plan is revised to include and be implemented at the proposed Carbon Separation Plant.	Compliant	The overall works emergency plans are reviewed by a panel of experts on a regular basis. The plans addressed in the overall Emergency Response Plan are based on risk. The CSP is not addressed specifically in the overall works plan as the risk of a total catastrophe is insignificant.	Low	-
	- Ensure implementation of planned control measures in Table 8 and compliance with requirements of the OHS Act.	Compliant	<ul style="list-style-type: none"> - Automate the plant where possible – Compliant - Works procedures implemented – Compliant - Locate in the existing building structure – Complaint - Install a dust extraction system – Complaint - Restrict access to site to less than 48 minutes in an 8 hour shift – not required currently as the plant is offline - Issue personnel with PPE – Compliant - Use water to suppress dust for the carbon rich material – Complaint - Engineering controls to be implemented to reduce vibration stress – Complaint 	Low	-
	- Provide on-going feedback to registered I&APs on progress, as well as environmental and social performance of the proposed project, as well as other environmental impact studies and implementation of projects. A six monthly or annual feedback letter may be considered for this purpose.	Compliant	Communication exists to registered IAPs on the project specifically. ArcelorMittal issues a general environmental management newsletter on an annual basis as well as publish a sustainability report which addressed waste related matters.	Low	-
3.2.16	All potential emergencies that can be expected from the CSP must be addressed in line with the existing Direct Reduction Plant and ArcelorMittal South Africa (Vanderbijlpark Works) emergency response procedures.	Compliant	AMSA has an Emergency Response Plan - Policy Number: MHROAD00005 in place.	Low	-
3.2.17	The Department of Water Affairs and Forestry and any other Government Department's requirements and/or conditions pertinent to the proposed project must be complied with.	Noted	This condition is noted. No communication has been received from the Department.	None	-

NO	APPROVED MITIGATION MEASURES	COMPLIANCE CATEGORY	COMPLIANCE ANALYSIS - CIGROUP	LEVEL OF EFFORT/ACTION	PROPOSED MITIGATION MANAGEMENT OPTION AND/OR
3.2.18	An independent Environmental Control Officer (ECO) with an understanding of the carbon separation process must be appointed for the duration of construction and commissioning, to monitor , and report on compliance with the conditions of this authorisation	Compliant	This condition is adhered to and Ms. Ilze Broekman has been appointed as ECO.	Low	-
3.3	General Conditions				
3.3.a	Any changes to, or deviations from, the project description set out in this letter must be approved, in writing, by the Department before such changes or deviations may be effected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations.	Noted	This condition is noted. No deviations were made.	Low	-
3.3.b	This Department may review the conditions contained in this letter from time to time and may, by notice in writing to the applicant, amend, add or remove a condition.	Noted	This condition is noted.	None	-
3.3.c	The applicant must notify the Department, in writing, at least 10 (ten) days prior to the change of ownership, project developer or the alienation of any similar rights for the activity described in this letter. The applicant must furnish a copy of this document to the new owner, developer or person to whom the rights accrue and inform the new owner, developer or person to whom the rights accrue that the conditions contained herein are binding on them.	Compliant	The department was notified of the change of ownership in 2009.	Low	-
3.3.d	Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details, the applicant must notify the Department as soon as the new details become known to the applicant.	Compliant	AMSA has noted that a name change amendment was submitted in 2009 and again in October 2012.	Low	-
3.3.e	Authorisation for the activity is granted in terms of the Environment Conservation Act, 1989 (Act 73 of 1989) only and does not exempt the holder from compliance with other relevant legislation.	Noted	This condition is noted.	None	-
3.3.f	The applicant shall be responsible for ensuring compliance with the conditions contained in this letter by any person acting on his behalf, including but not limited to, an agent, servant, or employee or any person rendering a service to the applicant in respect the	Noted	This condition is noted.	None	-

NO	APPROVED MITIGATION MEASURES	COMPLIANCE CATEGORY	COMPLIANCE ANALYSIS - CIGROUP	LEVEL OF EFFORT/ACTION	PROPOSED MITIGATION MANAGEMENT OPTION AND/OR
	activity, including but not limited to, contractors and consultants.				
3.3.g	Departmental officials shall be given access to the property referred to in 1 above for the purpose of assessing and/ or monitoring compliance with the conditions contained in this document at all reasonable times.	Noted	This condition is noted.	None	-
3.3.h	The applicant must notify the Department within 24 (twenty four) hours if any condition of this authorisation cannot, or is not, adhered to. The notification must be supplemented with reasons for non-compliance.	Noted	This condition is noted.	None	-
3.4	Reporting requirements				
3.4.a	The occupational hygiene surveys and assessments must be done in line with the Occupational Health and Safety Act, 1993 (Act no 85 of 1993)" The subsequent report must be submitted to the department on request.	Compliant	The condition is adhered to and health and safety precautions are applied site wide. Furthermore, Health and Safety Assessments are done according to legislative requirements.	Low	-
3.4.c	An annual Environmental Performance Audit conducted by an independent accredited auditor must be submitted to the Department for review, first audit being due 12 (twelve) months after commissioning of the CSP project and every 12 months thereafter. As per letter from GDARD 10-07-2012 the audit reports must be kept on file and made available on request	Compliant	Ms Malebogo Mosepele from CIGroup Environmental (Pty) Ltd has been appointed as external independent auditor. Previous external reports were made available for review. It should be noted that CSP is currently not operational.	Low	-
3.5	Duration of authorisation				
	If the construction of the activity authorised by this letter does not commence within 1 (one) year from the date of signature of this letter, the authorisation will lapse and the applicant will need to re-apply for authorisation in terms of the above legislation or any amendments thereto.	Not Applicable	This condition is not applicable for the audit period. The activity commenced within the required timeframe.	None	-
5	Appeals				
	The applicant is required to inform all registered interested and affected parties of the decision contained in this Record of Decision as well as the process for appeals described above within seven 7 days of date of signature .	Not Applicable	This condition is not applicable for the audit period.	Low	-

5 EXTERNAL AUDITOR'S DETERMINATION OF COMPLIANCE

The purpose of this External Audit was for the external auditor to assess the level of compliance ArcelorMittal currently has to the conditions of the ArcelorMittal Vanderbijlpark Works: RoD. The external auditor's assessment is based on the information provided electronically and verbally by ArcelorMittal and on field observations during the site inspection 22 March 2022. The information received from ArcelorMittal was inputted into the compliance checklist to inform the external auditors' determination of compliance.

Overall, ArcelorMittal's compliance to the conditions of the RoD are noteworthy. ArcelorMittal was found to be compliant with all the conditions of the RoD. None of the conditions were noted as non-compliant. (Error! Reference source not found.). The non-compliant condition poses a moderate risk to ArcelorMittal and should be prioritised (Error! Reference source not found.).

Audit Findings		Number of Conditions	Level of Effort/Action			
			None	Low	Medium	High
Compliance Assessment	Non-compliant	0	0	0	0	0
	Noted	27	27	0	0	0
	Not Applicable	2	2	0	0	0
	Compliant	22	11	7	4	0
	Total	51	40	7	4	0

Figure 5.1: ArcelorMittal's Risk-Based Audit Reporting Matrix (RoD).

Audit Findings		Number of Conditions	Risk			
			Low	Minor	Moderate	Major
Compliance Assessment	Non-compliant	0	0	0	0	0
	Noted	27	27	0	0	0
	Not Applicable	2	2	0	0	0
	Compliant	22	22	0	0	0
	Total	51	51	0	0	0

Figure 5.2: ArcelorMittal's Level of Risk Reporting Matrix (RoD).

6 CONCLUSION

ArcelorMittal South Africa (AMSA) Vanderbijlpark Works was subjected to an external Environmental Performance Audit (EPA) of the Record of decision (RoD) for the Carbon Separation Plant (**GAUT 002/05-06/0510**) in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and the Environmental Impact Assessment Regulations, 2006. The objective of the external EPA was to evaluate and assess the level of compliance of AMSA with the conditions of the RoD. The intention of the methodical examination of the RoD is to allow AMSA to assess not only their compliance to the RoD, but also to determine how the operating philosophy at AMSA is being practically implemented at all levels of operation to ensure environmental compliance.

The external auditor found ArcelorMittal to be compliant to all conditions of the RoD. The external audit findings are noteworthy, and the external auditor is confident that with continued effort, compliance levels can be maintained or improved.

Appendix A: External Auditor Declaration of Independence

I, **Malebogo Mosepele**, declare that –

- I act as the independent external auditor in this assessment;
- I have expertise in conducting environmental audits, including knowledge of the Acts, Regulations and any guidelines that have relevance to the permit/license in question;
- I will comply with the Acts, Regulations and all other applicable legislation;
- I will perform the work relating to the external audit in an objective manner, even if this results in views and findings that are not favourable to the permit/license holder;
- I undertake to disclose to the permit/license holder and the Competent Authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the permit/license by the Competent Authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the Competent Authority, unless access to that information is protected by law, in which case it will be indicated that such information exists and will be provided to the Competent Authority;
- I will perform all obligations as expected from an external auditor in terms of the Regulations; and
- I am aware of what constitutes an offence in terms of the Acts and that a person convicted of an offence in terms of the Acts is liable to the penalties as contemplated in the Acts.

Disclosure of Vested Interest

I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations.



Signature of the External Auditor

CIGroup Environmental (Pty) Ltd

Name of Company

21 April 2022

Date