



Our reference: SO-ENV-1338

29 November 2024

Your Ref: EA nr EMS/1 (e),1(j),1(p)/08/42

Department of Economic, Small Business Development, Tourism and Environmental Affairs
113 Saint Andrews Street,
St Andrews Building
3rd Floor , Room 8
Bloemfontein
9301
Free State

Delivered via e-mail: mkhosana@destea.gov.za
mathibea@destea.gov.za
seekoeis@destea.gov.za

Attention: Deputy Director: Environmental Impact Assessment

ENVIRONMENTAL AUTHORISATION EXTERNAL REPORT SUBMISSION

The Environmental Authorisation applicable for Sasol South Africa Limited, Sasolburg Operations was externally audited during October 2023. The external audit was conducted to comply to the requirement contained in Chapter 5 part 3 of the Environmental Impact Assessment Regulations.

Sub regulation 34 (6) of the regulations also requires the holder of the environmental authorisation to notify all potential and registered interested and affected parties of the submission of the report and make the report available on request to anyone and on a publicly accessible website, where available.

The external audit reports will be available on <https://www.sasol.com/esg/environmental-audit-reports>.

Sasolburg Operations appointed WSP to conduct the external audits on all Environmental Authorisations and accompanying Environmental Management Programs.

Attached, please find the compliance audit report for the Upgrading of Bio-works at Sasol One Site authorisation with reference EMS/1 (e),1(j),1(p)/08/42, dated November 2023.

Sasolburg and Ekandustria Operations

1 Klasie Havenga Street Sasolburg 1947
Telephone +27 (0)16 960 9111 www.sasol.com

Sasol South Africa Limited 1968/013914/06

Sasol Place 50 Katherine Street Sandton 2146 South Africa Private Bag X10014 Sandton 2146 South Africa
Telephone +27 (0)10 344 5000 Facsimile +27 (0)11 788 5092 www.sasol.com

Directors: VD Kahla (Chairman) BSM Backman B Baijnath T Booley GN Ndwammbi RM Laxa NP Magaqa Z Monnagotla CK Mokoena
MS Solomon PM Vilakazi LB Zondo

Company Secretary: M du Toit

The Audit report noted sufficient mitigation of environmental impacts and level of compliance to the Environmental Authorisation and Environmental Management Program (EMPr) therefore no recommendations for improvement were made.

Further, in alignment with Chapter 5 Part 4 of the regulation, regulation 36 allows amendment to the impact management action of an EMPr to be affected immediately by the holder of the environmental authorisation and reflect it in the next environmental audit report. Annexure B contains the mitigations measures identified during the environmental impact assessment, for the operational phase of the project, defining the impact management outcome and impact management actions to enable compliance to this regulation.

No impact management outcome or impact management action requires amendment for the Upgrading of Bio-works at Sasol One Site.

Yours faithfully

Signed by: Johann Van Wyk
Signed at: 2024-11-29 12:42:20 +02:00
Reason: I approve

Johann Van Wyk

Johann van Wyk
Senior Manager Environment and Product Stewardship (acting)

Tel: +27 16 960 2398
Email: johann.vanwyk1@sasol.com

Annexure A

Audit report.

Upgrading of Bio-works at Sasol One Site– ref (EMS/1 (e),1(j),1(p)/08/42)



Sasol South Africa Ltd

**UPGRADING OF BIOWORKS
ENVIRONMENTAL AUTHORISATION (REF.
NO: EMS/1(E),1(J),1(P)/08/42) AND
ENVIRONMENTAL MANAGEMENT
PROGRAMME AUDIT**

Compliance Audit Report: November 2018 - October
2023





Sasol South Africa Ltd

**UPGRADING OF BIOWORKS
ENVIRONMENTAL AUTHORISATION (REF.
NO: EMS/1(E),1(J),1(P)/08/42) AND
ENVIRONMENTAL MANAGEMENT
PROGRAMME AUDIT**

Compliance Audit Report: November 2018 - October 2023

TYPE OF DOCUMENT (VERSION) CONFIDENTIAL

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Sasol South Africa Ltd

UPGRADING OF BIOWORKS ENVIRONMENTAL AUTHORISATION (REF. NO: EMS/1(E),1(J),1(P)/08/42) AND ENVIRONMENTAL MANAGEMENT PROGRAMME AUDIT

Compliance Audit Report: November 2018 - October 2023

WSP

Building 1, Maxwell Office Park
Magwa Crescent West, Waterfall City
Midrand, 1685
South Africa

Phone: +27 11 254 4800

WSP.com



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Signature				
Checked by	Tshepho Mamashela	Tshepho Mamashela		
Signature				
Authorised by	Anri Scheepers	Anri Scheepers		
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AUDITOR CVS

1 INTRODUCTION

1.1 TERMS OF REFERENCE

WSP Group Africa (Pty) Ltd (WSP), as an independent environmental consultant, was appointed by Sasol South Africa Ltd (Sasol) to undertake an external environmental compliance audit of the commitments contained in the Environmental Authorisation (EA) (reference number EMS/1(e),1(j),1(p)/08/42) for the upgrading of Bioworks and the Environmental Management Programme (EMPr), as well as to compile an audit report according to the requirements of the National Environmental Management Act (No. 107 of 1998), as amended (NEMA).

The details of the Environmental Authorisation (EA) (initial Record of Decision (RoD)), its amendment and the EMPr audited for compliance of the Upgrading of Bioworks at the Sasol One Site are provided below:

- EA for the Bioworks Upgrade unit located at the Sasol One site in Sasolburg (reference number: EMS/1(e),1(j),1(p)/08/42), dated 25 August 2009 and issued to Sasol Infrachem (Pty) Ltd by the then Department of Economic Development, Tourism, Environmental and Economic Affairs (now the Department of Economic, Small Business Development, Tourism and Environmental Affairs (DESTEA));
- The amendment of the EA for the Bioworks Upgrade located at the Sasol site (on the Sasol One site) in Sasolburg (reference number: EMB/07/08/247), dated 18 September 2019 and issued to Sasol South Africa (Pty) Ltd by the DESTEA. The amendments include:
 - Change of location;
 - Change of the applicant's details on the EA;
 - Owner of the EA
 - Contact details and address
 - Change of the holder of the EA.
 - Management of EA and address
- EMPr included in the Scoping Report.

1.2 SASOL SASOLBURG – BIOWORKS UPGRADE

Sasol One Bioworks primarily treats wastewater originating from three sewers. Namely, the domestic sewer, chemical sewer and industrial sewer to reduce their Chemical Oxygen Demand (COD) and Ammonia (NH₃) loads. The growth of the Sasol One site, Midland site and neighbouring industries, as well as the expected growth of the population in the neighbouring towns, has reduced the efficacy of the effluent treatment unit processes used at the Sasol Bioworks plant. This reduction in efficiency can be credited to the hydraulic and organic over loading of the treatment units. This will result in a reduction in contaminant removal efficiencies.

Eighteen (18) single-stage trickling filters are used for the biological treatment of these wastewaters. Most of the biologically treated effluent (baseload) is pumped to the Ash Plant where it is used in the

ash transport system (transport of fine ash from both Steam Stations). Further COD reduction, phosphate (P) removal and disinfection is achieved during the ash transporting process. A portion of the domestic sewer effluent is treated independently using two dedicated trickling filters and the treated effluent is pumped to the Sasol One site where it is utilised as process cooling water make-up. This will enable the system to accommodate the capacity increase forecasted.

The Bioworks facility is situated on the farms Donkerhoek 323 and Herewaarde 409.

1.3 PROJECT TEAM

Tshepho Mamashela and Matilda Mbazo completed a site inspection of the Bioworks Upgrade against the EA conditions (reference: EMS/1(e),1(j),1(p)/08/42) at the Sasol One on **24 October 2023**.

The draft external audit report was compiled in October 2023 and finalised on 17 January 2024. The report was then submitted to the DETSEA, by Sasol, in 2024.

Quality assurance is a critically important part of WSP's consulting services which aim to ensure both delivery of high-quality work and provide legal and commercial protection to the company. Quality assurance of this audit report was undertaken by Anri Scheepers.

The project team is summarised in **Table 1-1** and Curricula Vitae are included as **Appendix A**.

Table 1-1 - Details of the Audit Team

Audit Team	Role	Experience
Tshepho Mamashela	Auditor	BSc Hons Environmental Management
		6 Years' Experience
		Tshepho Mamashela is an Environmental Consultant currently working for WSP Group Africa at the Johannesburg, Waterfall office in the Environmental Planning and Advisory Department. She is an Environmental Management professional with over 5 years' experience in the private and public sector. Tshepho has experience in environmental management field with expertise in environmental impact assessment, environmental auditing, environmental management plans. She is registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA: 2019/1846) and the South African Council for Natural Scientific Professions (SACNASP: 120878).
Matilda Mbazo	Auditor	BSc (Hons) Geography
		Matilda graduated from the University of Witwatersrand with a BSc honours in Geography in 2023 and is currently completing her MSc in Environmental Science. She has over a year's experience in environmental management and currently provides technical and strategic input on a diverse range project in environmental management and environmental compliance audits. She is a registered Candidate Environmental Assessment Practitioner (EAP) with EAPASA (2023/6394).
Anri Scheepers	Review	BA (Hons) Geography
		15 Years' Experience
		Anri graduated from the University of Johannesburg with a BA honours in Geography in 2007. Anri has been involved in numerous mining and industrial projects in South Africa, and has experience with diamond, gold,

Audit Team	Role	Experience
		platinum, chrome, coal and manganese mining and processing operations. Anri is qualified as a Lead Auditor and has undertaken legal compliance auditing, including environmental authorisations, waste management licences, water use licences and EMPs. In addition, she has undertaken general site assessments to determine compliance against local, provincial and national environmental legislation. Anri's roles and responsibilities include the management of Environmental Authorisation and Waste Management Licence processes (Basic Assessments and Scoping and Environmental Impact Assessment Reporting), Water Use Licence Application processes and auditing. She is registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA: 2019/1528)

2 AUDIT SCOPE

WSP was appointed by Sasol to conduct the environmental compliance audit for the Bioworks Upgrade at the Sasol One site, Sasolburg. This report provides an overview of the level of compliance with the conditions contained in the EA and EMPr as indicated in **Section 1.1**. The site audit was undertaken on **24 October 2023** at the Sasol One Site, Sasolburg.

The objective of the audit was to:

- Assess the level of compliance with the commitments of the EA for the Bioworks Upgrade facility;
- Assess the level of compliance with the commitments of the EMPr that was submitted as part of the Scoping Report for the licensing of the Bioworks Upgrade facility, as agreed and approved by DESTEA;
- Assess the extent to which the avoidance, management and mitigation measures provided for in the EMPr for the operation of the propylene sphere was implemented;
- Identify and assess any new impacts and risks that result from undertaking the activity;
- Critically evaluate the effectiveness of the EA;
- Identify shortcomings in the EA and EMPr; and
- Identify the need for any changes to the avoidance, management and mitigation measures provided for in the EA and EMPr conditions.

The Environmental Impact Assessment (EIA) Regulations of 2014 (as amended) are considered applicable to the Bioworks Upgrade operations. Regulation 34, of the EIA Regulations, provides for the auditing of an EA, EMPr and closure plan. Furthermore, **Appendix 7** of Government Notice Regulation (GNR) 982 outlines the required audit report content. The 2014 Regulations, as amended, refer to a minimum audit frequency of five years. This audit is designed to meet the requirements of Regulation 34 of the EIA Regulations of 2014 (as amended). **Table 2-1** indicates where the requirements of Section 34 and **Appendix 7** are met within this audit report.

Table 2-1 - Regulation 34 and Appendix 7 of the EIA Regulations (2014)

Sub-Section	Requirement	Report Section Reference
34 (2)a	The environmental audit report must be prepared by an independent person with the relevant environmental auditing expertise.	Sub-section 1.3 and CV's provided in Appendix A

Sub-Section	Requirement	Report Section Reference
34(2)b	<p>The environmental audit report must provide verifiable findings, in a structured and systematic manner, on:</p> <p>(i) the level of performance against and compliance of an organisation or project with the provisions of the requisite environmental authorisation or EMPr and, where applicable, the closure plan; and</p> <p>(ii) the ability of the measures contained in the EMPr, and where applicable the closure plan, to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity;</p>	Audit checklist tables provided in Section 4
3(a)	<p>The environmental audit report must determine</p> <p>(a) the ability of the EMPr, and where applicable the closure plan, to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity on an ongoing basis and to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the closure of the facility; and</p>	Section 4
3(b)	The environmental audit report must determine the level of compliance with the provisions of environmental authorisation, EMPr and where applicable, the closure plan.	Section 4
4(a)	<p>Where the findings of the environmental audit report indicate:</p> <p>(a) insufficient mitigation of environmental impacts associated with the undertaking of the activity</p> <p>(b) insufficient levels of compliance with the environmental authorisation or EMPr</p> <p>the holder must, when submitting the environmental audit report to the competent authority submit recommendations to amend the EMPr or closure plan in order to rectify the shortcomings identified in the environmental audit report</p>	Section 4
a	<p>Details of-</p> <p>(i) the independent person who prepared the environmental audit report; and</p> <p>(ii) the expertise of independent person that compiled the environmental audit report.</p>	Sub-section 1.3 CVs provided in Appendix A
b	A declaration that the independent auditor is independent in a form as may be specified by the competent authority.	Sub-section 9
c	An indication of the scope of, and the purpose for which, the environmental audit report was prepared.	Sub-section 1.1 and Section 2
d	A description of the methodology adopted in preparing the environmental audit report.	Section 3
e	<p>An indication of the ability of the EMPr, and where applicable, the closure plan to-</p> <p>(i) sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity on an on-going basis;</p>	Section 4

Sub-Section	Requirement	Report Section Reference
	(ii) sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the closure of the facility; and (iii) ensure compliance with the provisions of environmental authorisation, EMP, and where applicable, the closure plan.	
f	A description of any assumptions made, and any uncertainties or gaps in knowledge.	Sub-sections 0 and 2.2
g	A description of any consultation process that was undertaken during the course of carrying out the environmental audit report.	Sub-section 3.2
j	A summary and copies of any comments that were received during any consultation process.	Comments received during the consultation process were included as comments in the audit checklist tables in Section 4.
k	Any other information requested by the competent authority.	None requested

2.1 DISCLAIMER

This Report has been prepared by WSP on behalf and at the request of Sasol in terms of Regulation 34 of the EIA Regulations.

Unless otherwise agreed by us in writing, we do not accept responsibility or legal liability to any person other than the Client for the contents of, or any omissions from, this Report.

To prepare this Report, we have reviewed only the documents and information provided to us by the Client or any third parties directed to provide information and documents to us by the Client. We have not reviewed any other documents in relation to this Report and except where otherwise indicated in the Report.

The findings, recommendations and conclusions given in this report are based on the author's best scientific and professional knowledge, as well as available information. This report is based on survey and assessment techniques which are limited by time and budgetary constraints relevant to the type and level of investigation undertaken; WSP and its staff reserve the right to modify aspects of the report including the recommendations if and when new information may become available from on-going research or further work in this field or pertaining to this investigation.

Although WSP exercises due care and diligence in rendering services and preparing documents, WSP accepts no liability, and Sasol, by receiving this document, indemnifies WSP and its directors, managers, agents and employees against all actions, claims, demands, losses, liabilities, costs, damages and expenses arising from or in connection with the services rendered, directly or indirectly by the use of the information contained in this document.

This report must not be altered or added to without the prior written consent of the author. This also refers to electronic copies of this report which are supplied for the purposes of inclusion as part of other reports. Similarly, any recommendations, statements or conclusions drawn from or based on

this report must make reference to this report. If this report is used as part of a main report, the report in its entirety must be included as an appendix or separate section to the main report.

2.2 ASSUMPTIONS AND LIMITATIONS

WSP noted the following assumptions and limitations during the audit:

- The information provided by Sasol is up to date and accurately represents the Sasol Sasolburg operations;
- WSP viewed as much of the operational area as possible given the timeframe and access limitations;
- Findings made within the previous audit reports are correct; and
- Site photographs were not provided in the audit report due to the onsite Sasol Sasolburg policy that disallows any photographs being taken on site. Where conditions were deemed compliant, and the evidence cited was onsite observations and verbal confirmation, these findings were observed by the Auditors.

This report has been prepared by WSP at the request of Sasol and the Terms of Reference as detailed in **Section 1.1**.

3 AUDIT METHODOLOGY

The International Organisation of Standardisation (ISO) 14010, ISO 14011 and ISO 14012 guideline documents were utilised as a template during the compliance audit process. This methodology ensures that the compliance audit was conducted in a systematic and independent manner that was documented and objectively evaluated to determine compliance to the EA/EMPr commitments.

The audit process comprised the following:

- Confirmation of the audit checklist;
- Site inspection (**24 October 2023**);
- Review of documentation relevant to the commitments of the EA and EMPr (e.g. records, permits, certificates, maintenance logs, monitoring results, previous audit reports, specialist reports (where available and applicable), etc.); and
- Compilation of an audit report.

3.1 AUDIT CHECKLIST

WSP compiled a checklist of the EA and EMPr commitments, which was used as an auditing compliance tool. Refer to **Table 4.1** and **Table 4.2** for the audit checklist.

3.2 SITE INSPECTION AND INTERVIEWS

An onsite inspection was conducted on **24 October 2023** where findings and observations were recorded and are summarised in **Section 4**. Key personnel interviewed during the audit included:

- Suyen Van Zyl;
- Dzivhu Makhavhu;
- Tommie Bezuidenhout;

- Lucky Matjeane; and
- Thuli Matumba.

3.3 INFORMATION CONSIDERED

Information related to the following categorises was reviewed, where required, and used to evaluate compliance:

- Environmental Authorisation EMS/1(e),1(j),1(p)/08/42), issued to Sasol South Africa Ltd;
- Environmental Management Plan for the proposed Bioworks Upgrade Project, Sasol Infrachem, Sasolburg, Free State, dated 5 June 2009;
- Application for EA amendments: Bioworks Upgrade at Sasol One Site (Ref Number: EMS/1(e)/08/32);
- External Audits of EAs/RoDs/EMPrs: Environmental Authorisation: G&U: Upgrading of Bioworks at Sasol One Site Audit Report by Centre for Environmental Management (CEM) (Reference no: CEM 2018/141) dated November 2018;
- Procedure for the removal of waste from the SEO Sasolburg Sites (ref no: SSP-S-014) dated 01 August 2022;
- High Level Evaluation of Permeable Reactive Barriers (PRB's) and MNA as Remedial Technologies for Sasol Sasolburg Operations (Ref no: BISOL-21-6194) dated May 2022;
- Air Emissions Licence (AEL) (reference number: FDDM-MET-2013-24-R1);
- Sasolburg and Ekandustria Operations Annual Emission Report (August 2022) to ensure compliance with the AEL conditions;
- Water Use Licence (WUL) (reference number: 14/C22K/FG/4958);
- Integrated Water and Waste Management Plan (IWWMP) Rev 1 – report number: SO-env-1075 (Sasolburg Operations, December 2022) that includes the:
 - Stormwater Management Plan (SWMP, 2022);
 - Rehabilitation Strategy and Implementation Plan (RSIP);
 - Water Conservation and Demand Management (WC/DM);
 - Malfunctions register;
 - Water management;
 - Groundwater management;
 - Waste management;
 - Contaminated Water and Wastewater Management;
 - Effluent Management; and
 - Land management.
- The reporting, investigation and recording of environmental incidents (SAP and Isometrix system);
- Waste Management and Disposal Registers; and
- Other related approvals documents.

3.4 ASSESSMENT EVALUATION METHODOLOGY

The consolidated report contains all commitments, which were formulated as part of the original and amended EA and EMPr. Each commitment contained in the audit checklist was assessed by reviewing site documentation, interviewing employees, and undertaking a site inspection. The

application of the EMP was assessed and the level of compliance rated (compliance categories contained in **Table 3-1**). The compliance of the operations listed in **Section 1.2** was assessed.

Table 3-1 Levels of Compliance

Compliance Level	Definition
Compliant (C)	<p>When an activity or commitment has been implemented, completed, is on-schedule or is maintained on an ongoing basis.</p> <p>Condition/mitigation measure/commitment has been achieved with evidence provided in the form of a document or site verification.</p>
Non-compliant (NC)	<p>When an activity or commitment has not been complied with in its entirety/certain aspects thereof have not been addressed.</p> <p>When a commitment has not been undertaken, not been completed according to plan, or where any unlawful actions have been identified. Non-compliant conditions are given target completion dates as follows:</p> <ul style="list-style-type: none"> — Short term: 0 – 6 months. — Medium term: 6 – 12 months. — Long term: 12 - 18 months
Not applicable (N/A)	<p>The condition, commitment and/or mitigation measure is not applicable or is to be revised in accordance with current practice.</p> <p>A “Not Applicable” finding is also noted in event where such condition, commitment and/or mitigation measure is not yet relevant but is still relevant for future activities.</p>

4 AUDIT FINDINGS

4.1 ENVIRONMENTAL AUTHORISATION

Table 4-1 below provides the compliance of Sasol with the conditions within the EA and amendments to the EA.

Table 4-1 - Environmental Authorisation (reference: EMS/1(e),1(j),1(p)/08/42 dated 25 August 2009) and Amendment (reference: EMB/07/08/247 dated 18 September 2019) Audit Findings

Ref.	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person
3.1 Scope of Authorisation				
3.1.1	Authorisation of the activity is subject to the conditions contained in this document, which conditions form part of the environmental authorisation and are binding on the holder of the authorisation.	N/A	Noted. The Holder of the Authorisation and External Auditor noted this condition.	None.
3.1.2	The holder of the authorisation shall be responsible for ensuring compliance with the conditions by any person acting on his or her behalf, including but not limited to, and agent, sub-contractor, employee or person rendering a service to the holder of the authorisation.	C	<p>Sasol as the holder of the authorisation acknowledges that responsibility for ensuring compliance with the EA and provides environmental management awareness training to staff, service providers, contractors and visitors to ensure that everyone employed or acting on their behalf is aware that they need to comply with the EA and the EMPr conditions. Induction training was provided to all staff, service provides, contractors and visitors.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Verbal confirmation Staff and visitors training material and registers 	None.

Ref.	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person
			<ul style="list-style-type: none"> Onsite Observation of staff and visitors training. 	
3.1.3	The authorised activity may only be carried out at the property/site indicated above.	C	<p>The authorised activity is carried out at the Sasol One Bioworks, Gasloop Herewaarde, farm portion no 409 as within the EA location details.</p> <p>Evidence:</p> <ul style="list-style-type: none"> EA location details (reference number EMS/1(e)/08/32) Google Earth Onsite Observation 	None.
3.1.4	Any changes to, or deviations from, the project description set out in this authorisation must be approved, in writing, by the Department before such changes or deviations may be affected. 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 and it may be necessary for the holder of the authorisation to apply for further authorisation in terms of the regulations.	N/A	Noted. No changes or deviations from the project descriptions were noted within the audit period.	None.
3.1.5	If commencement of the activity does not occur within a period of 2 (two) years from the date of issue, the authorization lapses and a new application for an Environmental Authorisation (EA) must be done.	N/A	Noted. This condition is outside the audit period and refers to a requirement prior to commencement and was therefore not audited. The EA was issued in 2009 and the activity commenced within specified time. The facility was operational.	None.

Ref.	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person
3.1.6	This authorisation does not negate the holder of the authorisation's responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the activity.	N/A	Noted. This audit did not cover a legal review of compliance of the Bioworks Upgrade and SSO with all statutory requirements and whether they were in possession of all the necessary permits, authorisations or any other official documents.	None.
3.2 Appeal				
3.2.1	The holder of the authorisation is drawn to the attention that an appeal may be lodged against the decision in terms of Chapter 7 of GNR 385, if such appeal is available in circumstances of the decision.	N/A	Noted. This condition is outside the audit period and refers to a requirement prior to commencement and was therefore not audited.	None.
3.2.2	The holder of the authorisation must notify all registered interested and affected party, in writing and within 10 (ten) calendar days of the Department's decision to authorise the activity; (Date of issue; date when the applicant receive EA) of the: <ul style="list-style-type: none"> a) Outcome of the application; and b) The reasons for the decision 	N/A	Noted. This condition is outside the audit period and refers to a requirement prior to commencement and was therefore not audited.	None.
3.2.3	The notification referred to in 3.2.2 must: <ul style="list-style-type: none"> a) Specify the date on which the authorisation was issued; 	N/A	Noted. This condition is outside the audit period and refers to a requirement prior to commencement and was therefore not audited.	None.
3.2.3	The notification referred to in 3.2.2 must: <ul style="list-style-type: none"> b) Inform the interested and affected party of the appeal procedure provided for regulation 62; and 	N/A	Noted. This condition is outside the audit period and refers to a requirement prior to commencement and was therefore not audited.	None.

Ref.	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person
3.2.3	The notification referred to in 3.2.2 must: c) Advise the interested and affected party that a copy of the authorisation and reasons for decision will be furnished on request.	NA	Noted. This condition is outside the audit period and refers to a requirement prior to commencement and was therefore not audited.	None.
3.2.4	The notice of intent to appeal must be sent to the following address: Head of Department Department of Economic Development, Tourism and Environmental Affairs Private Bag X 20801 Bloemfontein 930	N/A	Noted.	None.
3. Management of Activity				
3.1	The submitted draft environmental Management Plan (EMP) which fulfils the requirements of this authorisation must be adhered to, at all times.	C	Sasol implemented SAP Environmental Compliance (SAP EC) as a management tool to ensure and capture proof of compliance with conditions in the EA and EMP. <i>Evidence:</i> <ul style="list-style-type: none">Environmental Management Plan for the proposed Bioworks Upgrade Project, Sasol Infrachem, Sasolburg, Free State, dated 5 June 2009External Audits of EAs/RoDs/EMPrs: Environmental Authorisation: G&U: Upgrading of Bioworks at Sasol One Site Audit Report by Centre for Environmental Management (CEM) (Reference no: CEM 2018/141) dated November 2018.	None.

Ref.	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person
3.2	The EMP that: a) contain all the information specified in regulation 385 Section 35	C	The auditor and Sasol confirm that the EMPr contains all the information specified in regulation 385 Section 35. <i>Evidence:</i> <ul style="list-style-type: none"> Environmental Management Plan for the proposed Bioworks Upgrade Project, Sasol Infrachem, Sasolburg, Free State, dated 5 June 2009 	None.
3.3	The Department must be notified, within 30 days thereof, of any change of ownership and/or project developer. Conditions imposed in this EA must be made known to the new owner and/or developer and are binding on the new owner and/or developer.	C	The Department was notified about the change of the applicant and representative details; this was not a new owner. Changes in the details are provided below: Sasol South Africa (Pty) Ltd <i>Evidence</i> <ul style="list-style-type: none"> Amendment EA (EMB/07/08/247 dated 18 September 2019) 	None.
4. Monitoring				
4.1	Records related to compliance/non-compliance with conditions of this authorisation must be kept in good order. Such records should be made available to this Department within seven (7) days from the date of written request from this Department	C	Records of compliance/non-compliance with conditions of this authorisation, which include the WUL, EA and Waste Licence were kept in good condition and were readily available on SAP, therefore, should be readily available should the Department require them. No request was made by the Department during the audit period for records or documents. In addition, the previous audit was provided with the records of compliance/non-compliance with conditions of this authorisation. <i>Evidence:</i>	None.

Ref.	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person
			<ul style="list-style-type: none"> Onsite Observation Sasol South Africa Ltd in Sasolburg, External Audits of EAs/RODs/EMPrs: G&U, upgrading of Bioworks at Sasol One Site dated 23 November 2018 by Centre of Environmental Management 	
4.2	Non-compliance with or any deviation from the conditions of this authorisation as set out in the EA is regarded as an offence, and after reasonable provision has been given for remedial action, will be dealt with in terms of Section 24(f) of the National Environmental Management Act (Act No. 107 of 1998) as well as any other appropriate legal mechanisms.	N/A	Noted. No deviations from the stated conditions within the EA were noted during this audit.	None.
5. Recording and Reporting				
5.1	The holder of the authorisation must submit an environmental audit report to the Department, once during operation of the development (Upgrading of Sasol One Bio-works)	C	<p>The last audit that was submitted to the Department during operational phase in 2018.</p> <p>However, the condition states 'once' during operational phase and does not take into consideration Regulation 34 of the EIA Regulations 2014 as amended. Therefore, this submitted external audit report should be seen as compliance with this condition. Additionally, Sasolburg Operations will now ensure that all EAs are audited by a third party at least every five years, as per legal requirement.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> External Audits of EAs/RoDs/EMPrs: Environmental Authorisation: G&U: Upgrading of Bioworks at Sasol One Site Audit Report by Centre for Environmental 	<i>OFI:</i> It is recommended Sasol amends the condition as per legal requirement.

Ref.	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person
			Management (CEM) (Reference no: CEM 2018/141) dated November 2018.	
6.2.1	<p>The Environmental audit report must contain the following:</p> <ul style="list-style-type: none"> Activity Targets Conformance/ non-conformance Performance indicators Comments. 	C	<p>CEM conducted an external environmental compliance audit in 2018 and completed an environmental audit report in 2018 with the required information. WSP included the required information in the environmental audit report for the environmental audit completed in 2023.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> External Audits of EAs/RoDs/EMPrs: Environmental Authorisation: G&U: Upgrading of Bioworks at Sasol One Site Audit Report by Centre for Environmental Management (CEM) (Reference no: CEM 2018/141) dated November 2018. 	None.
6.2.2	This environmental audit report must be compiled by an independent auditor.	C	The environmental audit report was compiled and completed by an independent auditor, WSP Group Africa.	None.
7. Commissioning of Activity				
7.1	Seven (7) days prior written notice must be given to the Department that the activity will commence. The notice must include a date on which it is anticipated that the activity will commence.	N/A	This condition is outside the audit period and refers to a requirement prior to commencement of the construction phase and was therefore not audited.	None.
8. Construction and Operation of the Facility				
8.1.1 Erosion				

Ref.	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person
a.	Potential erosion impacts are anticipated during construction.	N/A	Noted. This condition is outside the audit period and refers to a requirement pre-commencement and construction of the activity and therefore was not audited.	None.
b.	The careful positioning of soil piles and runoff control must be enforced during all phases of development.	N/A	Noted. No soil piles were observed during the site visit.	None.
c.	Planting of some vegetative cover after construction must be undertaken to help limit the extent of erosion on site	N/A	Noted. This condition is outside the audit period and refers to a requirement pre-commencement and construction of the activity and therefore was not audited.	None.
8.2.1 Dust				
a.	Dust must be suppressed on the construction site during dry period by the regular application of water	N/A	Noted. This condition is outside the audit period and refers to a requirement pre-commencement and construction of the activity and therefore was not audited.	None.
b.	Soil dumps must be positioned in such a way that they are not vulnerable to wind erosion	N/A	Noted. This condition is outside the audit period and refers to a requirement pre-commencement and construction of the activity and therefore was not audited.	None.
8.3.1 Surface and ground water pollution				
a.	During construction phase, all hazardous substances must be stored in designated areas.	N/A	The condition is noted by Sasol and the auditor. This condition is outside the audit period and refers to a requirement pre-commencement and construction of the activity and therefore was not audited.	None.

Ref.	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person
b.	The new four boreholes must be included into the Sasol monitoring network for monitoring of any changes or impacts associated with the trickling filters and humus tanks.	C	<p>The four new boreholes are included the Sasol monitoring network.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Verbal Confirmation High Level Evaluation of Permeable Reactive Barriers (PRB's) and MNA as Remedial Technologies for Sasol Sasolburg Operations (Ref no: BISOL-21-6194) dated May 2022. 	None.
8.4. Waste Management				
8.4.1	All waste generated must be sorted and disposed of properly at the designated disposal site and/or must be handled by licensed merchants.	C	<p>All waste generated inclusive of general waste and sewerage sludge is disposed of on a weekly basis by Interwaste Environmental Solutions which reports on the South African Waste Information System (SAWIS).</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Waste Manifests Verbal Confirmation 	None.
8.5. Noise				
8.5.1	Construction must be limited to normal working hours and surrounding communities must be notified upfront of noisy construction activities like basting and excavations.	N/A	Noted. This condition is outside the audit period and refers to a requirement pre-commencement and construction of the activity and therefore was not audited.	None.
9. Site Closure				

Ref.	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person
9.1	A decommissioning plan and rehabilitation plan must be submitted to the Department in case of the site closure.	N/A	<p>Noted. The condition is outside the audit period and refers to a requirement during decommissioning and rehabilitation phase and not the operational phase.</p> <p>Moreover, Sasol does not intend to decommission Bioworks , as it is the primary treatment facility for all sewerage from Sasolburg industrial and residential areas.</p>	None.
10. General Conditions				
10.1	A copy of this authorisation must be kept at the property where the activity will be carried on. The authorisation must be produced to any authorised official of the Department who requests to see it and must be made available for inspection by any employee or agent of the holder of the authorisation who works or undertakes work at the property.	C	<p>The auditor identified that a copy of the authorisation was in place, at the control room office and on Sasol SAP (intranet).</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> ■ Onsite Observation 	None.
10.2	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.	C	<p>The Department was notified about the change of the contact person; this was not a new owner. Changes in the details are provided below:</p> <p>Mr. Rightwell Laxa SVP Sasolburg Operations Sasol South Africa (Pty) Ltd acting through its Sasolburg Operations P.O. Box 1 Sasolburg 1947 Tel: +27 16 960 8001</p>	None.

Ref.	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person
10.3	The holder of the authorisation must notify the Department, in writing and within 24 (twenty-four) hours, if condition 7.1 of this authorisation cannot be or is not adhered to. In all other cases, the holder of the authorisation must notify the Department, in writing, within 7 (seven) days if a condition of this authorisation is not adhered to. Any notification in terms of this condition must be accompanied by reasons for the non-compliance.	N/A	Noted. This report will serve to notify the Department of any non-compliances to this EA. However, condition 7.1 of this EA is applicable to the pre-commencement phase and not the operational phase, therefore the condition is not auditable.	None.



4.2 ENVIRONMENTAL MANAGEMENT PROGRAMME

Table 4-2 below provides the compliance of Sasol with the conditions within the EMP (ref no: EMS/1e,1j,1p/08/42) for the Bioworks Upgrade Project at the Gasloop on the Sasol One site in Sasolburg, dated 05 June 2009.

Table 4-2 - Environmental Management Programme Audit Findings

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMP Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
Construction Phase								
4.2.2 Safety Training								
	The contractor shall ensure that all its employees are adequately orientated, inducted and trained to perform the tasks. The training costs and requirements shall be reflected in the project tender document.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Toolbox talks- The contractor is expected to have safety "tool box" talks. These talks shall be in accordance with the risks and trends associated with the project. Proof of these talks shall be kept on site.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	The principal contractor will develop a specific emergency procedure and implement an emergency plan based on the Sasol Business Unit's (SBU's) guidelines for that site.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
4.2.3 Personal Protective Equipment (PPE)								
	No person is allowed to enter the site without the SBU approved (SANS approved) required PPE.	C	<p>The Auditor reviewed the PPE register and confirmed that all Sasol personnel including all contractors and employees, were provided with necessary PPE. SSO policies and procedures requires that all contractors and service providers wear the correct PPE before allowed to enter the Sasol Site One Complex</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Site Observation Verbal Confirmation 	None.	N/A	N/A	N/A	N/A
	All contractors are required to keep an updated register of all PPE issued.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
			the operational phase, therefore it was not audited.					
	Strict non-compliance measures must be administered to any employees not complying with the use of PPE.	C	<p>Sasol ensures little to no probability of PPE non-compliance as there are strict measures at each facility including Bioworks.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Onsite Observation 	None.	N/A	N/A	N/A	N/A
	The contractor must ensure that the company logo is displayed and company personnel can be easily identified.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited	None.	N/A	N/A	N/A	N/A
	Employees working in the vicinity of earth moving construction vehicles shall wear reflective colour blazers for visibility.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited	None.	N/A	N/A	N/A	N/A
	Ear protection shall be worn in any designated noise zone and where noise generating	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	equipment and tools are being used.		the operational phase, therefore it was not audited.					
	A contractor shall ensure action is taken against an employee who continuously fails to comply.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited	None.	N/A	N/A	N/A	N/A
	PPE minimum requirement notice boards shall be placed at all entrances.	C	<p>The auditor identified that there is a PPE requirement board at the entrance of the Bioworks facility.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Site Observation 	None.	N/A	N/A	N/A	N/A
4.2.4 Health and Safety								
	Reduction of the probability of occurrence of an event by considering the integrity of equipment and safeguards in place to prevent failure of equipment should be addressed during Basic Engineering	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	It is noted that this is a health and safety condition therefore, it is recommended that Sasol amends the EMPr to reflect all amendments	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
				approved by the FS-DESTEa.				
4.2.4.2. Maintenance								
	Occupational health practices and operating procedures currently conducted will be maintained and continually improved in keeping with the current approach. Requirements of the OHS Act (85 of 1993) and its Regulations, Sasol SH&E Minimum Requirements, the requirements of the International Risk Control Africa (IRCA) Occupational Health auditing system, principles of the OHSAS 18000 standard, World Health Organisation (WHO) guidelines and practices currently embedded in the Sasol Infrachem Occupational Health system will apply to the proposed project.	N/A	Noted. Sasol Sasolburg has a dedicated Health and Safety department that ensures compliance with the Health and Safety Act. Annual Health and Safety Audits are conducted by internal and external auditors.	It is noted that this is a health and safety condition therefore, it is recommended that Sasol amends the EMPr to reflect all amendments approved by the FS-DESTEa.	N/A	N/A	N/A	N/A
	Appropriate site inspections and audits during construction need to be conducted during construction to ensure safety issues are carefully considered through the construction process.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited	It is noted that this is a health and safety condition therefore, it is recommended				

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
				that Sasol amends the EMPr to reflect all amendments approved by the FS-DESTE A				
4.2.5 Site Clearing								
	The size of areas subjected to land clearance will be kept to a minimum	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Only areas as instructed by the Project Manager must be cleared and grubbed	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	The soil must be stabilised in order to prevent the possible wash-down of debris and other materials into any water resources	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	The soil must be stabilised in order to prevent the possible wash-down of debris and other materials into any water resources	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
4.2.6 Soil Management								
	The Contractor is required to strip topsoil together with grass from all areas where permanent or temporary structures are to be located	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Topsoil must be stockpiled for later use.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Topsoil stockpiles are not to exceed 2 m in height.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	Topsoil must not be compacted in any way, nor should any object be placed or stockpiled upon it. No vehicles may be allowed access onto the stockpiles after they have been placed.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
4.2.7 Excavation and Backfilling								
	Any excavations must be undertaken within the confines of an established construction site - i.e., a site that is protected with a peripheral fence.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Consider using any excess rocks and boulders that are excavated from the construction site for any erosion protection work which is required on site.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Excess material as a result of excavation activities together with construction rubble must be removed, once construction is completed and appropriately disposed of.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	Suitable excavated material is to be stockpiled next to excavations for use as backfill and all unsuitable or excess material must be loaded onto trucks and hauled to designated areas.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Backfill material must be from excavated material or dolerite/ash obtained from a licensed source.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Areas to be backfilled must be cleared of all unsuitable material and debris	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
4.2.8 Erosion Control during Site Clearing								
	Areas susceptible to erosion must be protected by installing the necessary temporary and/or permanent drainage works as possible to prevent surface water from being concentrated in streams.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	Any runnels or erosion channels developed during the construction period shall be backfilled and compacted, and the area restored to a proper condition.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Site activities will take overall recognition of the importance of measures to avoid and reduce erosion by phasing the work program to minimise land disturbance in the planning and design stage, by keeping the areas of land cleared to a minimum, and by ensuring that the period of time for which areas remain cleared are kept to a minimum.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Soil must be exposed for the minimum time possible once cleared of vegetation. The timing of clearing and grubbing must be coordinated as much as possible to avoid prolonged exposure of soils to wind and water erosion	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
4.2.9 Dust Control								

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	Dust must be suppressed on the construction site during dry periods by the regular application of water. Water used for this purpose must be used in quantities that will not result in the generation of run-off.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Dust dispersion from construction activities, roads, spoil dumps and other construction locations will be limited and suppressed to the maximum extent practical.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Spoil dumps will be positioned such that they are not vulnerable to wind erosion.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Any cleared areas must be watered to ensure that dust levels are minimised.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	If monitoring results or complaints indicate inadequate compliance with the EMP, the source of the problem must be identified, and existing procedures modified to ensure that the problem is rectified.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
4.2.10 Water Pollution Management								
	Ensure that working areas where hazardous substances (such as cement) are handled or stored are designed to collect and contain these hazardous substances.	N/A	Noted. The two bio-filters and humus settling tanks do not contain or handle hazardous substances, therefore this condition is not auditable.	None.	N/A	N/A	N/A	N/A
	Ensure that no pollution enters surface water or has the potential to pollute groundwater by ensuring that there is containment of spillages (e.g. diesel, oils, etc) and that there is an emergency plan in place to deal with accidental spillage.	C	Surface water from the filters is collected in below ground level pits known as the spare dams.	None.	N/A	N/A	N/A	N/A
	Ensure that washing of containers, equipment, vehicles and other surfaces only occurs at designated washing areas	C	The auditor identified designated washing areas. Evidence: ■ Site Observation	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	Ensure that sufficient ablution facilities are provided	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	All fuel, chemical, oil spills must be confined to areas where the drainage of water can be controlled and managed to confine spillages such that they do not interfere with stormwater and groundwater. This can be achieved through the use of appropriate structures and methods such as sumps and bunded areas.	C	<p>The biofilters and the humus settling tanks are located in bunded areas to ensure controlled runoff. A sluice gate was constructed to isolate and control flow from biofilters.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Onsite observation Verbal Confirmation 	None.	N/A	N/A	N/A	N/A
	Ground water monitoring boreholes are established site and are continuously monitored.	C	<p>Ground water monitoring, inclusive of boreholes are conducted annually and the report shows extensive monitoring of boreholes BIO-08-01S, BIO-08-02S, BIO-08-01D, S4, FAD05-01S, EMC-02D, OTP2A, A7A and A7B.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> High Level Evaluation of Permeable Reactive 	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
			Barriers (PRB's) and MNA as Remedial Technologies for Sasol Sasolburg Operations (Ref no: BISOL-21-6194) dated May 2022.					
4.2.11 Noise								
	Surrounding communities and adjacent landowners are to be notified upfront of noisy construction activities (blasting and excavations).	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Operations should meet the noise standard requirements of the Occupational Health and Safety Act (Act No 85 of 1993).	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Construction staff working in areas where the 8-hour ambient noise levels exceed 85 dBA should wear ear protection equipment.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	All construction equipment (machinery, electrical & diesel generators) must be maintained in good working order	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	The contractor will respond timeously in the event of any complaints by local residents or other disturbing noise. The noise source will be identified & appropriate noise mitigation measures instituted in consultation with the affected party (ies).	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
4.2.12 Waste Management								
	Where possible, construction waste on site must be reused or recycled.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Disposal of waste must be in accordance with relevant legislative requirements	C	The Auditor reviewed waste registers and manifests during the audit site visit regarding waste collection and	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
			<p>management for the Bioworks facility. The waste was collected and adequately disposed of by a 3rd party service provider.</p> <p>Disposal of waste at Bioworks is in accordance with the GNR 636 of 2013-08-23: National norms and standards for disposal of waste to a registered landfill.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> ■ Procedure for the removal of waste from the SEO Sasolburg Sites (ref no: SSP-S-014) dated 01 August 2022. ■ Onsite Observation ■ Verbal Confirmation ■ Waste manifests 					
	The Contractor must familiarise themselves with the definitions of waste and the handling, storage and transport of it as prescribed in the applicable environmental legislation.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	The Contractor will appoint a person to manage and control waste.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Burning of waste material will not be permitted.	C	<p>The auditor observed that there is no burning of waste material on site.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Onsite Observation 	None.	N/A	N/A	N/A	N/A
	The Contractor will provide and maintain adequate facilities for litter collection (e.g. bins) at strategic locations around the construction site camp.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	A high quality of housekeeping will be maintained on the construction site to ensure that materials are not left where they can be washed or blown away to become litter.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	Littering must be prohibited, and routine clean-up drives must be implemented.	C	<p>The auditor identified that there are designated bins and skips to contain waste onsite. Sasol thrives to maintain good housekeeping and duty of care at the Bioworks facility.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Onsite Observation 	None.	N/A	N/A	N/A	N/A
	The Contractor will provide and maintain adequate facilities for litter collection (e.g., bins) at strategic locations around the construction site camp. The bins must be provided with lids and an external closing mechanism to prevent contents from blowing out and must be scavenger proof to prevent animals attracted to waste. Bins must be emptied on a regular basis.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	The collection, storage and disposal of waste may not cause any nuisance (odours, fumes, aesthetic impacts, etc.).	C	<p>The auditor identified that there were no odours caused by collection, storage or disposal of waste on the Bioworks site.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Onsite Observation 	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	All waste containers will be emptied at least once a week	N/A	<p>This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.</p> <p>Sasol Bioworks personnel confirmed that waste containers are emptied when they reach a capacity of over 50%.</p>	None.	N/A	N/A	N/A	N/A
	Waste documentation must be completed and kept on site	C	<p>The Auditor reviewed the waste manifests and certificates from registered service provider, <i>Interwaste Environmental solutions</i>.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Onsite Observation 	None.	N/A	N/A	N/A	N/A
	A complaints register must be maintained, in which any complaints from the community must be logged. All complaints must be investigated and, if appropriate, acted upon	C	Sasol regulates their complaints and incidents on the SAP and on the new system Isometrix. No incidents or complaints were recorded for the Upgrade of the Bioworks (biofilters and humus settling tanks).	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
			<i>Evidence:</i> <ul style="list-style-type: none"> Complaints and incidents register 					
	Corrective actions are required to be undertaken immediately after a complaint is made or a non-conformance is identified.	C	<p>The complaints and incidents are logged into the Isometrix system to be addressed and closed off by area managers.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Verbal Confirmation 	None.	N/A	N/A	N/A	N/A
4.2.13 Storage and Handling of Hazardous Substances								
	Ensure that spill kits are available on site to clean up spills and leaks.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Ensure that only designated areas are used for the handling or storage of construction materials.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	The Contractor must comply with all national, regional & local legislation with regard to the storage, transport, use & disposal of chemicals, harmful & hazardous substances and materials.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	The Contractor will furthermore be responsible for the training and education of all personnel on site who must be handling the material about its proper use, handling & disposal as well as spill response.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	All diesel generators will be equipped with drip trays.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	All petroleum products will be kept in a properly bunded area.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	Electricity generators used by the contractor should be in good working condition and not leak oil	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Any accidental chemical/fuel spills to be cleared up immediately.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Keep MSDS records of chemicals in use up to date	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Waste records must be kept available for review	C	<p>The auditor identified that all waste manifests and waste certificates are kept in the Bioworks admin offices.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Onsite Observation 	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	Implement appropriate actions and measures to reduce, stop or contain a spill of potentially hazardous substances (e.g., fuel or lubricating oil).	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Implement appropriate actions and measures to reduce, stop or contain a spill of potentially hazardous substances (e.g. fuel or lubricating oil) .	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Keep written records detailing the type of spill, the corrective and remedial measures implemented in the stopping or reduction of the spill, and the clean-up of the spill. Such progress reporting is important for monitoring and auditing purposes and the written reports may afterwards be used for training purposes in an effort to prevent similar future occurrences.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Report the nature and extent of the spill to the Construction	N/A	Noted. This condition is outside the audit period and	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	Safety Officer or Project Manager, as soon as reasonably possible, but within 24 hours		refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.					
	The contractor and the Construction Safety Officer will ensure that preventative measures are implemented in order to prevent spills of potentially hazardous substances.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
4.2.14 Cement and Concrete								
	Concrete must be mixed only in an area demarcated for this purpose. All concrete spilled outside this area, must be promptly removed by the Contractor and taken to the waste disposal site. After all concrete mixing is complete all waste concrete must be removed from the batching area and disposed of at the waste disposal site.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Operators must wear suitable Personal Protective Equipment (PPE).	C	All site personnel are required to wear suitable PPE before entering the Bioworks facility.	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
			<i>Evidence:</i> <ul style="list-style-type: none"> Onsite Observation Verbal Confirmation 					
	All runoff from concrete batching areas must be strictly controlled.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Waste concrete and cement must be scraped off the site and removed to a waste disposal site.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Solidified concrete can be disposed of at a general waste landfill site.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Concrete must not be mixed directly on the ground. Plastic liners or mixing trays are to be used	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
			the operational phase, therefore it was not audited.					
4.2.15 Visual								
	Ensure rehabilitation of construction area. Restore the area as close as possible to its original state	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
4.2.16 Borrow Pits								
	Only licensed borrow pits may be used.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
	Borrow pits must be rehabilitated in line with its specific EMP.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.	None.	N/A	N/A	N/A	N/A
Operation and Maintenance Phase								

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
4.2.17 Additional Employment								
	If additional permanent personnel are required, the first option should be to employ from the local population unless it is a highly skilled position.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction and pre-commencement phase and not the operational phase, therefore it was not audited.	It is recommended that Sasol amends the EMPr to reflect all amendments approved by the FS-DESTEa.	N/A	N/A	N/A	N/A
	Employment conditions must be included in contracts.	N/A	Noted. This condition is outside the audit period and refers to a requirement during the construction and pre-commencement phase and not the operational phase, therefore it was not audited.	It is recommended that Sasol amends the EMPr to reflect all amendments approved by the FS-DESTEa.	N/A	N/A	N/A	N/A
5.2 Air Quality (Emissions and Odours)								
	No mitigation measures are proposed, since it is unlikely that there will be major changes in emissions.	C	<p>The Biofilters and the humus settlings tanks do not emit any emissions, therefore no mitigation measure have been proposed in the audit period.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Onsite Observation Verbal Confirmation 	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	There are no continuous odour concerns the Bioworks which require the implementation of mitigation measures.	C	<p>The Auditor observed that there are no odour concerns and there has not been an incident or complaints regarding continuous odour.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Onsite Observation Verbal Confirmation Incidents and complaints register 	None.	N/A	N/A	N/A	N/A
	If complaints indicate inadequate compliance with the EMP, source of the problem must be identified, and existing procedures modified to ensure that the problem is rectified.	N/A	Noted. During this audit period, no complaints related to the biofilters and humus settling tanks have been noted.	None.	N/A	N/A	N/A	N/A
	The Operational Manager will respond timeously in the event of any complaints by local residents or other about odours.	C	<p>Complaints are logged into the SAP or Isometrix system immediately to ensure timeously response and accountability of Operational Managers.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Onsite Observation Verbal Confirmation 	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
5.3 Groundwater								
	Inclusion of the four new boreholes into the Sasol monitoring network so as to monitor any changes or impacts of the two new trickling filters and humus tanks once they have been constructed.	C	<p>The four new boreholes are included the Sasol monitoring network.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Verbal Confirmation High Level Evaluation of Permeable Reactive Barriers (PRB's) and MNA as Remedial Technologies for Sasol Sasolburg Operations (Ref no: BISOL-21-6194) dated May 2022. 	None.	N/A	N/A	N/A	N/A
	All treated water discharged from the works must comply with the WUL conditions indicated in Section 3.2.1.	C	Treated wastewater from the Bioworks is recycled back to the utility water processes on the Sasol One Site for reuse. A portion of the treated wastewater is supplemented into the cooling towers makeup and the balance of the treated wastewater is used for ash transport between Steam Stations and the fine ash dams. No direct discharge of wastewater to the environment from the Bioworks	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
			<p>is authorised unless uncontaminated runoff.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Integrated Water and Waste Management Plan (IWWMP) Rev 1 – report number: SO-env-1075 (Sasolburg Operations, December 2022) 					
5.4 Water Management								
	Stormwater should be diverted away from all the working areas & the stormwater/run-off must not be contaminated by any substance.	C	<p>The auditor identified that there is a recirculation system on site that ensures that stormwater is diverted away from working areas and potential contamination.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Onsite Observation Integrated Water and Waste Management Plan (IWWMP) Rev 1 – report number: SO-env-1075 (Sasolburg Operations, December 2022) 	None.	N/A	N/A	N/A	N/A
	Spills of potential contaminants must be immediately cleaned up	N/A	Noted. This condition is outside the audit period and	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	and neutralised. Such spills must be handled with consideration to health and safety considerations.		refers to a requirement during the construction phase and not the operational phase, therefore it was not audited.					
	Ensure incident/complaint registers are established & maintained.	C	<p>Sasol regulates their complaints and incidents on the SAP and on the new system Isometrix. No incidents or complaints were recorded for the Upgrade of the Bioworks (biofilters and humus settling tanks).</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Complaints and incidents register 	None.	N/A	N/A	N/A	N/A
	Corrective action is required to be undertaken immediately of a complaint made, or potential/actual leak or spill of polluting substance identified. This includes stopping the contaminant from further escaping, cleaning up the effected environment as much as practically possible and taking preventative measures.	C	<p>No incidents or complaints were recorded for the Upgrade of the Bioworks (biofilters and humus settling tanks).</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Verbal Confirmation Incident and complaints register 	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	An incident reporting system will record significant events & issues with water quality.	C	<p>Sasol regulates their complaints and incidents, whether minor or major on the SAP and on the new system Isometrix. No incidents or complaints were recorded for the Upgrade of the Bioworks (biofilters and humus settling tanks).</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Complaints and incidents register 	None.	N/A	N/A	N/A	N/A
	In the event of a major spill or leak of contaminants, the administering authority must be contacted immediately as per incident reporting procedures.	C	<p>Sasol has updated the site procedure SSP-S-013 (April 2019) to ensure that all relevant incidents within areas that have active EAs, are also reported to the EA issuing authority.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> External Audits of EAs/RoDs/EMPrs: Environmental Authorisation: G&U: Upgrading of Bioworks at Sasol One Site Audit Report by Centre for Environmental 	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
			Management (CEM) (Reference no: CEM 2018/141) dated November 2018.					
	In the event that water quality at the monitoring locations is found to fall outside of the prescribed guideline levels, the source of the deviation must be investigated, and measures taken to correct the problem	N/A	Noted. No incidents or deviations from prescribed guideline levels.	None.	N/A	N/A	N/A	N/A
	No ground water or surface water must be polluted by any activities on site.	C	<p>The auditor identified that there was no surface pollution on site.</p> <p>The current remediation plan related to the Bio-works is to prevent water ponding around the bio-filters by constructing berms to manage run-off during rain events. This will potentially reduce the impact on the shallow aquifer. Monitored Natural Attenuation (MNA).</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Onsite observation High Level Evaluation of Permeable Reactive 	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
			Barriers (PRB's) and MNA as Remedial Technologies for Sasol Sasolburg Operations (Ref no: BISOL-21-6194) dated May 2022.					
5.5 Waste Management								
	All structures and/or components replaced during maintenance activities are appropriately disposed of at a waste disposal site or sold to a recycling merchant for recycling.	N/A	No statutory maintenance or shutdown activities were underway during the audit period; therefore, this condition is not auditable.	None.	N/A	N/A	N/A	N/A
	Ensure that spillage of oils and other hazardous substances are limited during maintenance. Should any accidental spillage take place, it must be cleaned up immediately	N/A	No statutory maintenance or shutdown activities were underway during the audit period; therefore, this condition is not auditable.	None.	N/A	N/A	N/A	N/A
	Waste must be stored and handled according to the relevant legislation & regulations	N/A	No statutory maintenance or shutdown activities were underway during the audit period; therefore, this condition is not auditable.	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	General waste must be recycled where possible or disposed of properly.	C	<p>The auditor identified that there are bins designated for specific waste on the Bioworks site.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Onsite Observation 	None.	N/A	N/A	N/A	N/A
	Hazardous Waste must be disposed of at an appropriate hazardous waste disposal site	C	<p>Sewerage sludge and domestic waste is disposed of at Holfontein waste facility.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Verbal Confirmation Waste Manifests and Certificates 	None.	N/A	N/A	N/A	N/A
	Waste collection must be monitored on a regular basis	C	<p>Waste is collected on a weekly basis.</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Verbal Confirmation 	None.	N/A	N/A	N/A	N/A
	Waste documentation must be completed and available for inspection on request.	C	<p>The auditor identified that all waste documentation is readily available in the Bioworks offices.</p> <p><i>Evidence:</i></p>	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
			<ul style="list-style-type: none"> Onsite Observation 					
	A complaints register must be maintained, in which any complaints from the community must be logged. Complaints must be investigated and, if appropriate, acted upon.	C	<p>Sasol regulates their complaints and incidents, whether minor or major on the SAP and on the new system Isometrix. No incidents or complaints were recorded for the Upgrade of the Bioworks (biofilters and humus settling tanks).</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Complaints and incidents register 	None.	N/A	N/A	N/A	N/A
	Corrective action is required to be undertaken immediately after a complaint is made or non-conformance is identified.	N/A	Noted. No incidents or complaints were recorded for the Upgrade of the Bioworks (biofilters and humus settling tanks).	None.	N/A	N/A	N/A	N/A
	Upon the identification of any non-conformance, appropriately feasible remediation measures must be determined and implemented.	N/A	Noted. During this audit period, no complaints related to the biofilters and humus settling tanks have been recorded.	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	An incident reporting system will record and manage the follow up of non-conformances.	C	<p>Sasol regulates their complaints and incidents, whether minor or major on the SAP and on the new system Isometrix. No incidents or complaints were recorded for the Upgrade of the Bioworks (biofilters and humus settling tanks).</p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> Complaints and incidents register 	None.	N/A	N/A	N/A	N/A
5.6 Biodiversity								
	Implementation of a site rehabilitation program.	N/A	Noted. The condition is outside the audit period and refers to a requirement during decommissioning and rehabilitation phase and not the operational phase	None.	N/A	N/A	N/A	N/A
	Rehabilitation of the cleared areas, starting with the establishment of a grass cover.	C	<p>The auditor identified that the Bioworks facility is surrounded by grass spaces indicating that rehabilitation of cleared areas took place after construction.</p> <p><i>Evidence:</i></p>	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
			<ul style="list-style-type: none"> Onsite Observation Verbal Confirmation 					
6. Decommissioning Phase								
	Upon site closure and decommissioning the need to conduct an Environmental Impact Assessment based on the legislative framework at that time will be evaluated and an EIA conducted if required.	N/A	Noted. The condition is outside the audit period and refers to a requirement during decommissioning and rehabilitation phase and not the operational phase	None.	N/A	N/A	N/A	N/A
	All structures, foundations and concrete and tarred areas are demolished, removed and waste material recycled or disposed of at an appropriately licensed waste disposal site	N/A	Noted. The condition is outside the audit period and refers to a requirement during decommissioning and rehabilitation phase and not the operational phase	None.	N/A	N/A	N/A	N/A
	All access/service roads not required are closed and fully rehabilitated.	N/A	Noted. The condition is outside the audit period and refers to a requirement during decommissioning and rehabilitation phase and not the operational phase	None.	N/A	N/A	N/A	N/A
	All disturbed areas are compacted, sloped and contoured to ensure drainage	N/A	Noted. The condition is outside the audit period and refers to a requirement during	None.	N/A	N/A	N/A	N/A

Ref	Condition	Compliance Status	Findings	Recommendation, Timeframe and Responsible Person	Measures Implemented to Address Non-Compliance	Practicality of the EMPR Commitments	Is the Non-Compliance Administrative or will it have an impact	Historical/New Non-Compliance (Administrative measures)
	and runoff and to minimise the risk of erosion.		decommissioning and rehabilitation phase and not the operational phase					
	All rehabilitated areas are monitored for erosion.	N/A	Noted. The condition is outside the audit period and refers to a requirement during decommissioning and rehabilitation phase and not the operational phase	None.	N/A	N/A	N/A	N/A
	Ensure a long-term monitoring system is in place to ensure total rehabilitation of the site after decommissioning.	N/A	Noted. The condition is outside the audit period and refers to a requirement during decommissioning and rehabilitation phase and not the operational phase	None.	N/A	N/A	N/A	N/A

5 PROGRESS AGAINST PREVIOUS AUDIT FINDINGS

The previous compliance audit report against the consolidated EA and EMPr was compiled by the Northwest University CEM in 2018. A comparison in the change of compliance rating from the 2018 and 2023 audits are provided in **Figure 5-1** and **Table 5-1** below, and provides a summary of the audit findings for the previous and current audits (2018 and 2023). The 2023 audit identified one non-compliant conditions.

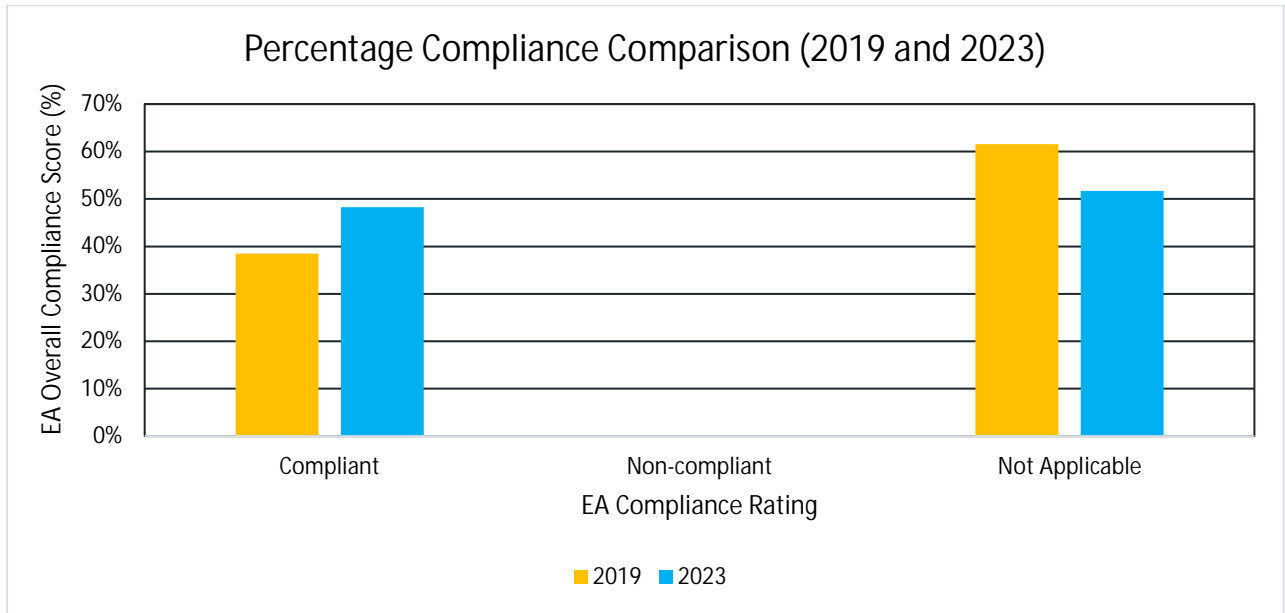


Figure 5-1 – Percentage comparison of Environmental Authorisation compliance levels from 2018 to 2023

Table 5-1 – Progress against previous findings

Ref	Commitment	2018 Status	2018 Finding	2023 Status	2023 Finding
EA Conditions					
3. Management of Activity					
.3.1	The submitted draft environmental Management Plan (EMP) which fulfils the requirements of this authorisation must be adhered to, at all times.	NC	At the time of the audit, evidence could not be provided that the holder of the authorisation adheres to all the operational requirements of the draft Environmental Management Plan. Evidence was provided that actions to address the requirements are scheduled and closed out. However, there is currently no independent process to verify	C	Sasol implemented SAP Environmental Compliance (SAP EC) as a management tool to ensure and capture proof of compliance with conditions in the EA and EMPr.

Ref	Commitment	2018 Status	2018 Finding	2023 Status	2023 Finding
			whether the actions are adequately completed to actually achieve compliance.		
4. Monitoring					
4.1	Records related to compliance/non-compliance with conditions of this authorisation must be kept in good order. Such records should be made available to this Department within seven (7) days from the date of written request from this Department	NC	Evidence was found during the audit that records of environmental incidents are kept in good order. However, such records are not linked to the conditions of this authorisation. Evidence was also found of records of compliance and non-compliance to the conditions of the waste management license that was issued to the Bioworks. Similar records do not, however, exist for compliance and non-compliance to the conditions of this environmental authorisation.	C	Records of compliance/non-compliance with conditions of this authorisation, which include the WUL, EA and Waste Licence were kept in good condition and were readily available on SAP, therefore, should be readily available should the Department require them. No request was made by the Department during the audit period for records or documents. In addition, the previous audit was provided with the records of compliance/non-compliance with conditions of this authorisation
5. Recording and Reporting					
5.1	The holder of the authorisation must submit an environmental audit report to the Department, once during operation of the development (Upgrading of Sasol One Bio-works)	NC	At the time of the audit, evidence was found that environmental audits are done in terms of the waste management license and submitted to DEA, e.g. SRK Waste License External Compliance audit, Sasol One Bioworks Project Report number 517667, dated June 2017. However, no evidence could be found that an audit report for the upgrading of the Sasol One Bioworks was submitted during the operation thereof.	C	The last audit that was submitted to the Department during operational phase in 2018. However, the condition states 'once' during operational phase and does not state when the report should be completed. Therefore, this submitted external audit report should be seen as compliance with this condition. In addition to this, Sasolburg Operations will now ensure that all EAs are audited by a third party at least every five years, as per legal requirement
10. General Conditions					
10.3	The holder of the authorisation must notify the Department, in writing and within 24 (twenty-four) hours, if condition 7.1 of this	NC	Evidence was found that Sasol has not adhered to a number of conditions of this environmental authorisation. No evidence could however be found that the holder	N/A	Noted. This report will serve to notify the Department of any non-compliances to this EA. However, condition 7.1 of this EA is applicable to the

Ref	Commitment	2018 Status	2018 Finding	2023 Status	2023 Finding
	authorisation cannot be or is not adhered to. In all other cases, the holder of the authorisation must notify the Department, in writing, within 7 (seven) days if a condition of this authorisation is not adhered to. Any notification in terms of this condition must be accompanied by reasons for the non-compliance.		has notified the DESTEA where a condition of the authorisation has not been adhered to.		pre-commencement phase and not the operational phase, therefore the condition is not auditable.
EMPr Conditions					
5.4 Water Management					
	Corrective action is required to be undertaken immediately of a complaint made, or potential/actual leak or spill of polluting substance identified. This includes stopping the contaminant from further escaping, cleaning up the effected environment as much as practically possible and taking preventative measures.	NC	<p>At the time of the audit, evidence was found that sewage spillages from the Petro ponds that occurred in December 2017 and March 2018 was reported as environmental incidents to DWS. The reports indicated that a de-sludge programme had been developed as a corrective action. Evidence was found of the de-sludge programme that was developed for various ponds at Sasol One in the WUL Enablement Projects - Sludge Removal from ponds and</p> <p>dams, Small Project Summary Report Revision 00, dated 10/11/2016.</p> <p>During the audit, evidence was also found numerous actions related to the de-sludging of the Petro ponds. However, despite a lot of effort in this regard, no evidence could be found that the de-sludging activities has been undertaken as yet. This is a non-compliance to the EMPr commitment that corrective action must be undertaken immediately if a potential/actual leak or spill of polluting substances is</p>	C	No incidents or complaints were recorded for the Upgrade of the Bioworks (biofilters and humus settling tanks).

Ref	Commitment	2018 Status	2018 Finding	2023 Status	2023 Finding
			identified. This includes stopping the contaminant from further escaping, cleaning up the effected environment as much as practically possible and taking preventative measures.		
	No ground water or surface water must be polluted by any activities on site.	NC	<p>At the time of the audit, evidence was found that the ground water in boreholes on the site is polluted. According to the Groundwater Remediation Plan, the average groundwater concentration at BIO-08-01S exceed the water use license level for nitrate, while the average groundwater concentration at BIO-08-02S exceed the water use license levels for electrical conductivity, sodium and sulphate. This is a non-compliance to the EMPr commitment that no ground water or surface water must be polluted by any activities on site.</p> <p>Take Note: This commitment is in contrast to the Sasol Water Use License, where evidence was found that the draft WUL 14/C22K/FG/4958 amendment, date 13 December 2016, contains a condition 4.5 that the licensee must develop a groundwater remediation plan to cover all boreholes where water quality show an elevated concentration of physico-chemical parameters. This is an official acknowledgement of the fact that groundwater at Sasol is polluted. Evidence was found that the draft groundwater management plan is being developed at the moment (November 2018).</p>	C	<p>The auditor identified that there was no surface or ground water pollution on site.</p> <p>The current remediation plan related to the Bio-works is to prevent water ponding around the bio-filters by constructing berms to manage run-off during rain events. This will potentially reduce the impact on the shallow aquifer. Monitored Natural Attenuation (MNA).</p>

6 SUMMARY OF THE AUDIT FINDINGS

6.1 SASOL SASOLBURG BIOWORKS UPGRADE EA COMPLIANCE

The audit findings have been summarised into the following categories: compliance, non-compliance and not applicable. The overall audit findings concerning compliance to the EA conditions are listed in **Table 6.1** below.

Table 6-1 - Summary of EA Compliance Audit Findings

Section of the EA	No. Commitments	C	NC	N/A
Scope of Authorisation	6	2	0	4
Appeal	9	0	0	9
Management of Activity	3	3	0	0
Monitoring	2	1	0	1
Recording and Reporting	3	3	0	0
Commissioning of Activity	1	0	0	1
Construction and Operation of the Facility	10	2	0	8
General Conditions	3	2	0	1
Total	37	13	0	24
Total Percentage		35%	0%	65%
Percentage Compliance with Applicable Conditions	100%			

Figure 6-1 illustrates the number/count contribution of the findings of the EA conditions per section while **Figure 6-2** presents the total proportion of compliance for the EA.

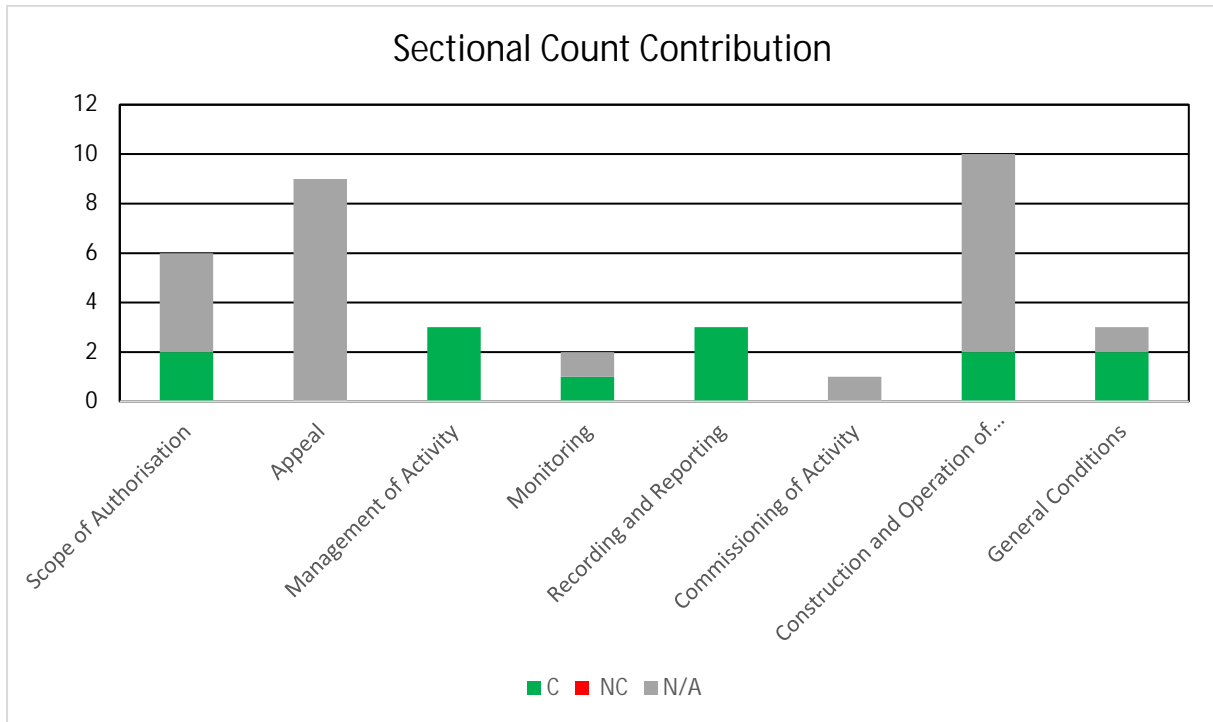


Figure 6-1 - Number/Count contribution of findings made to the EA conditions per section

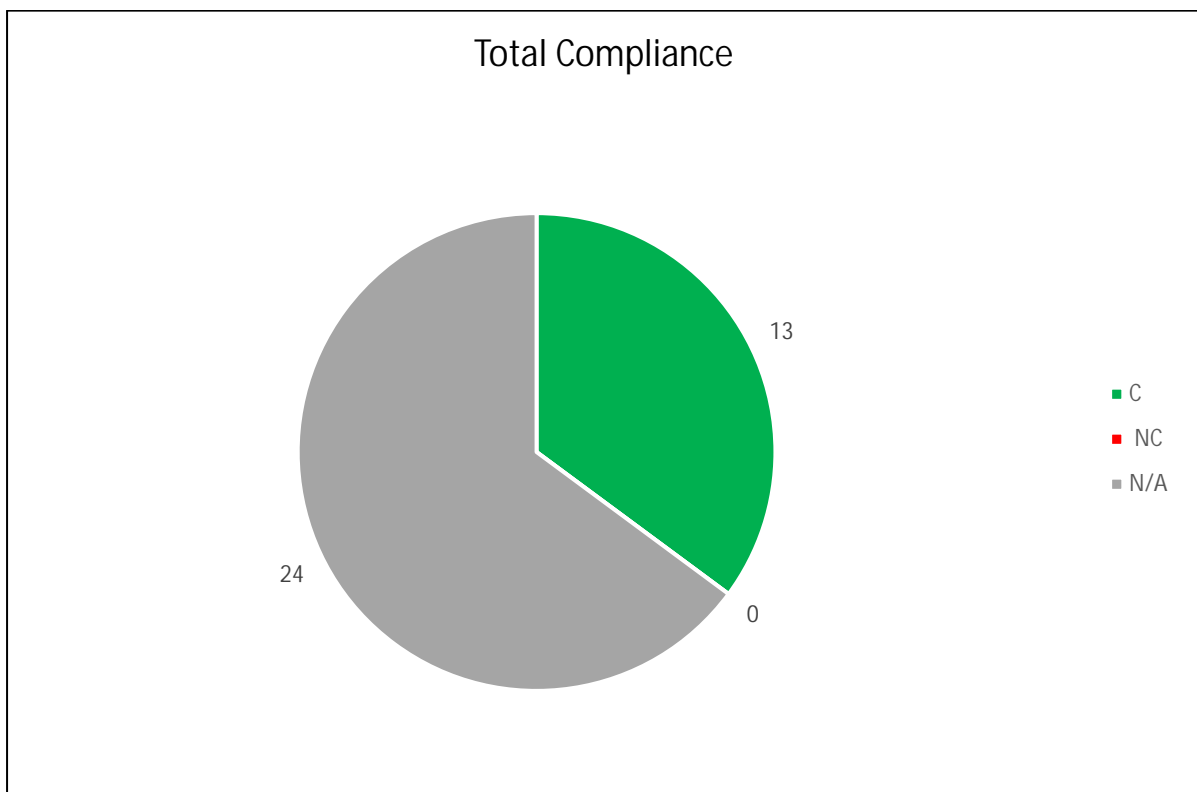


Figure 6-2 - Overall count findings on compliance to the EA commitments

Figure 6-3 illustrates the percentage contribution of the findings of the EA commitments and **Figure 6-4** presents the total percentage compliance for the facility.

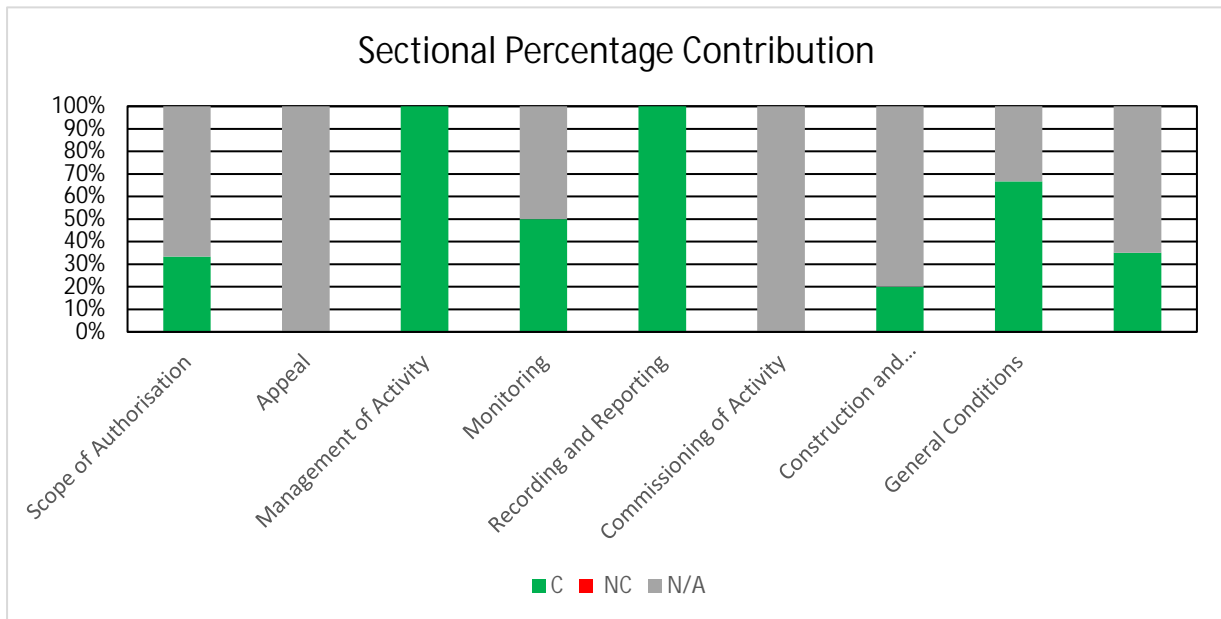


Figure 6-3 - Percentage contribution of findings made to the EA Commitments per Section

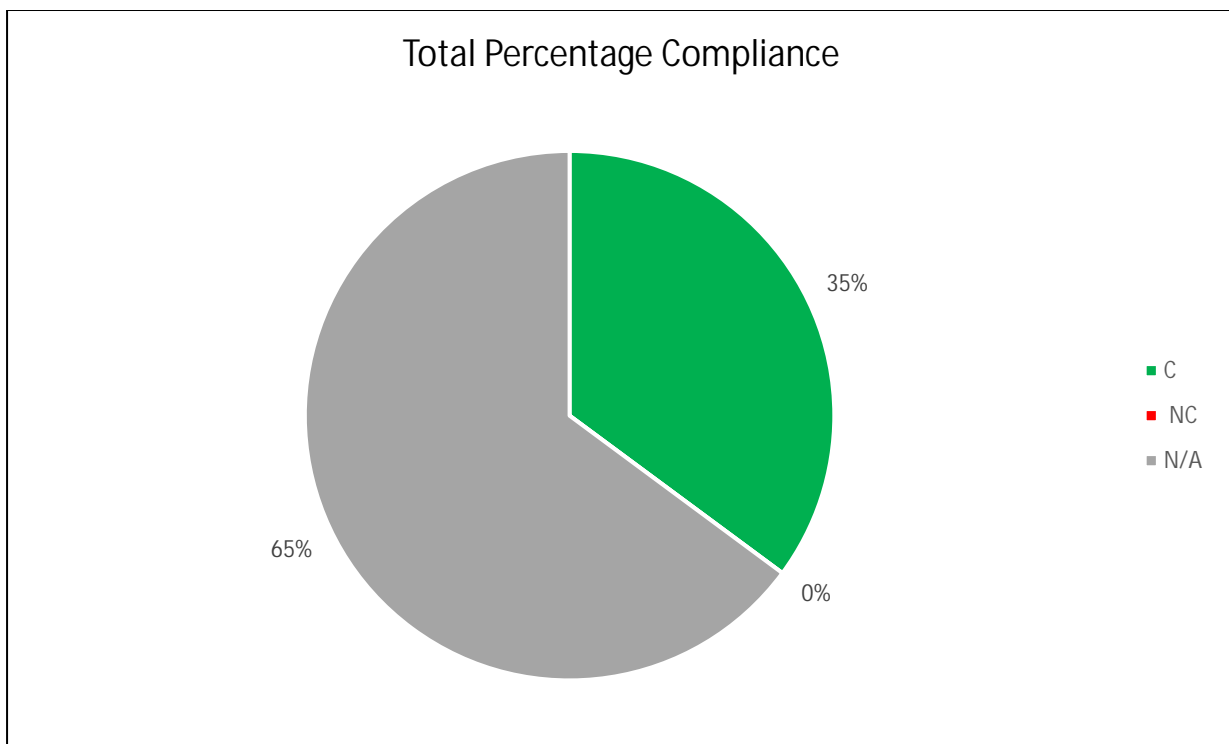


Figure 6-3 - Overall percentage findings on compliance to the EA Commitments

6.2 SASOL SASOLBURG BIOWORKS UPGRADE EMPR COMPLIANCE

The audit findings have been summarised into the following categories: compliance, non-compliance and not applicable. The overall audit findings concerning compliance to the EMPr conditions are listed in **Table 6-2** below.

Table 6-2 - Summary of EMPr Compliance Audit Findings

Section of the EMPr	No. Commitments	C	NC	N/A
Construction Phase	87	17	0	70
Operation and Maintenance Phase	29	17	0	12
Decommissioning Phase	6	0	0	6
Total	122	34	0	88
Total Percentage		28%	0%	72%
Percentage Compliance with Applicable Conditions	100%			

Figure 6-4 presents the total proportion of compliance for the facility and **Figure 6-5** illustrates the number/count contribution of the findings of the EMPr per section.

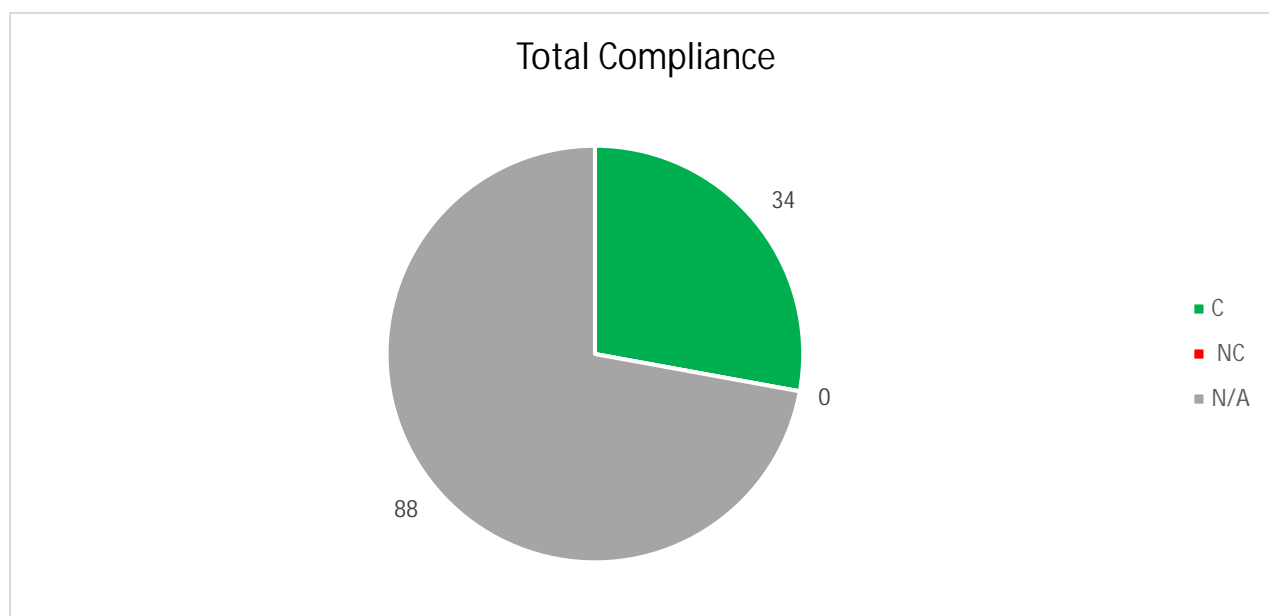


Figure 6-4 - Overall count findings on compliance to the EMPr Commitments

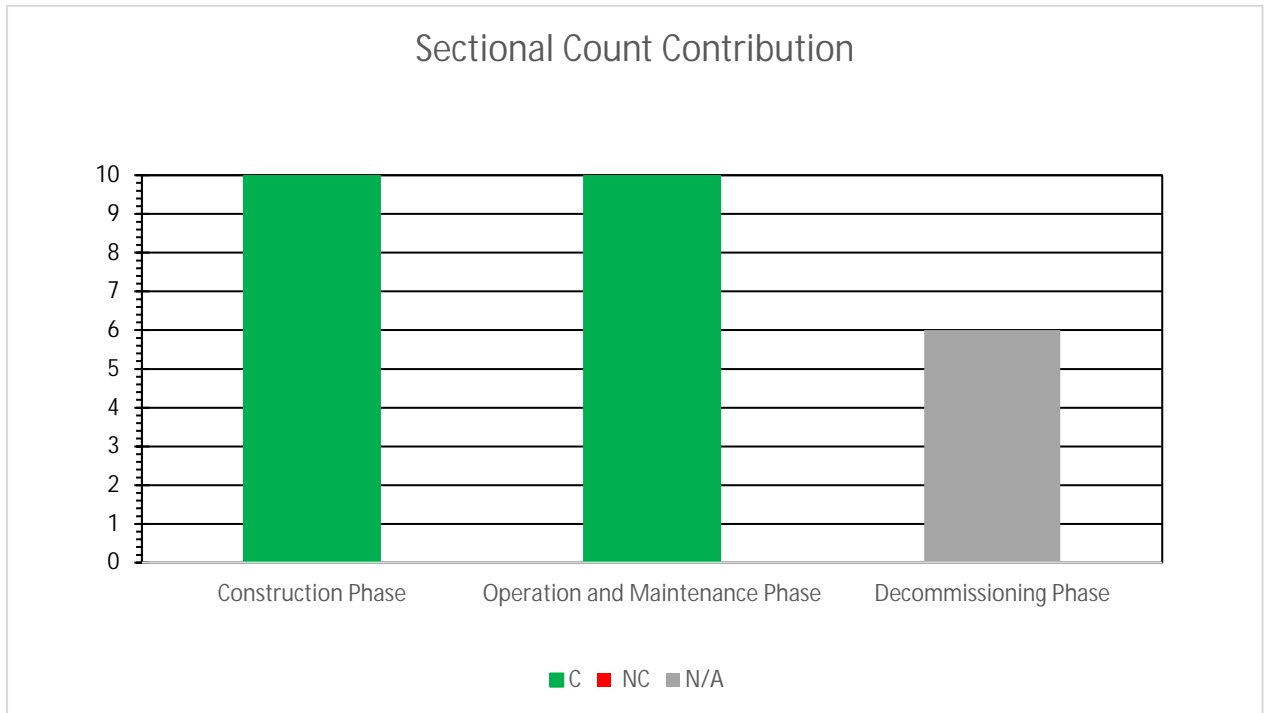


Figure 6-5 - Number/Count contribution of findings made to the EMPr Commitments per Section

Figure 6-6 presents the total percentage compliance for the facility and **Figure 6-7** illustrates the percentage contribution of the findings of the EMPr commitments.

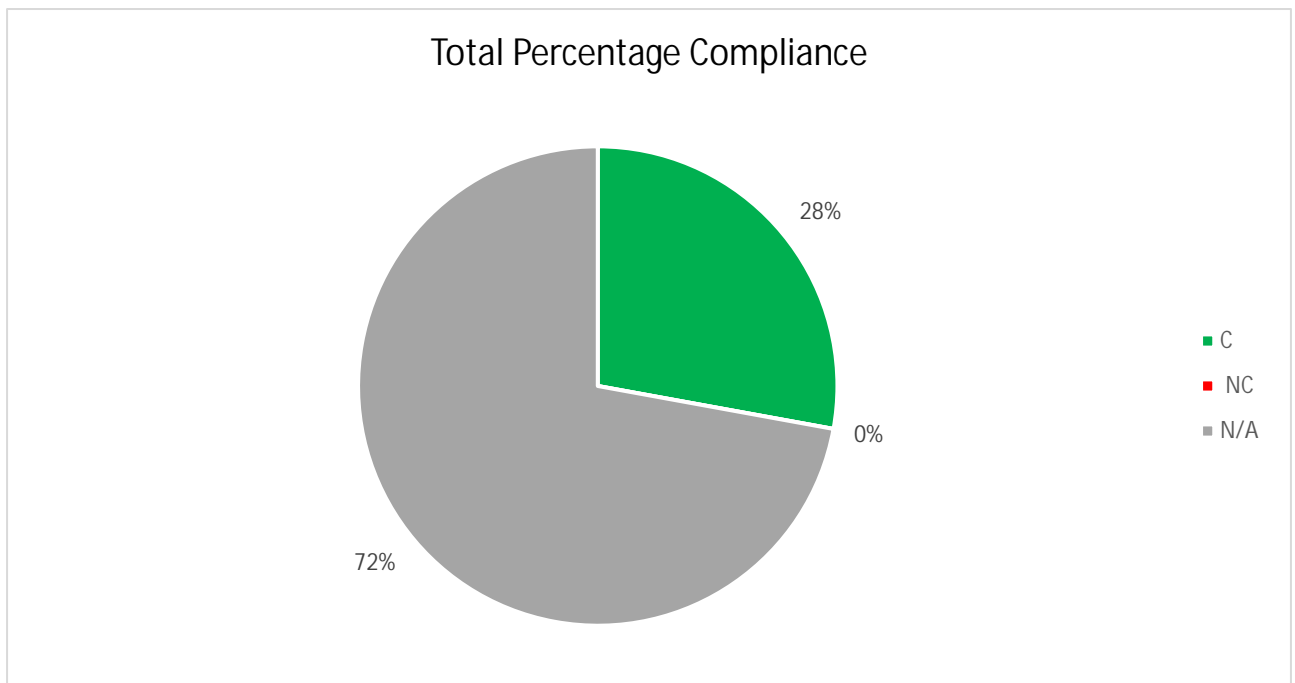


Figure 6-6 - Overall percentage findings on compliance to the EMPr Commitments

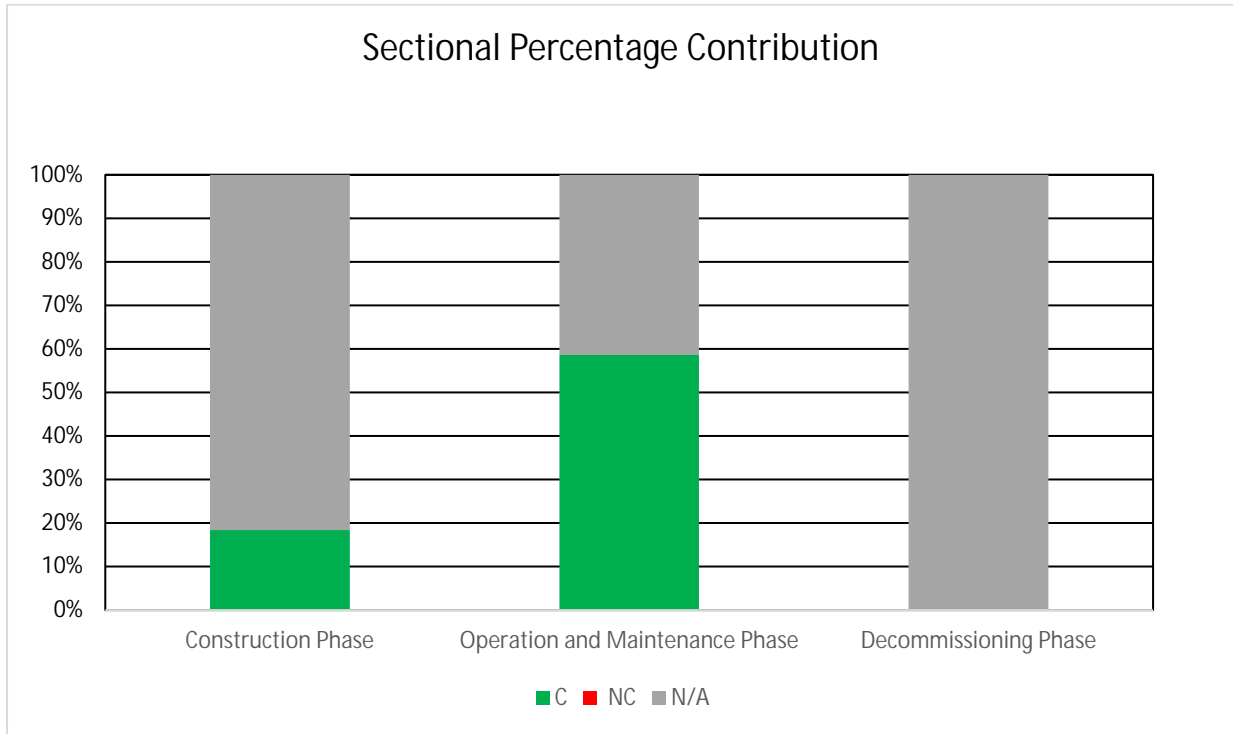


Figure 6-7 - Percentage contribution of findings made to the EMP commitments per Section

7 RECOMMENDATIONS

Zero non-compliances of the EA and EMP conditions was noted during the audit. Sasol is commended for achieving 100% compliance for the EA and EMP audit and is urged to continue to implement the environmental mitigation measures within the EA and EMP. In addition, Sasol should continue to implement their EMS for their onsite operations and to identify new environmental risks due to changes in operations, and address these when identified on site.

Sasol is advised to continue with their comprehensive EMS and strategy for detecting environmental risks and resolving incidents and non-compliances identified on site, and to utilize the audit report as an indicator of all areas that need attention.

8 CONCLUSION

Regulation 34 and Appendix 7 of the EIA Regulations 2014 (as amended) requires an assessment of the adequacy and effectiveness of the EA as part of the audit scope, as follows:

- Assess the level of compliance with the conditions of the EA.

The EA compliance audit has identified that the EA commitments remain applicable, and the EA is considered effective. As such, WSP does not recommend any amendment of the EA as it is sufficient in managing environmental impacts.

WSP do acknowledge that Sasol has systems in place which are considered to be more robust for monitoring compliance and implementing changes than through the EA audit; this includes the annual audit of each business unit to meeting the ISO 14001 standards. New impacts and risks are continually identified and assessed by Sasol's Environmental Department, which assesses environmental risks and drives improvement implementation. This Department facilitates Environmental Risk Assessments per business unit to ensure that gaps are addressed through implementation of mitigation measures via an Integrated Management System.

In conclusion, WSP recommends that Sasol continues to operate each business unit under an Environmental Management System and meet the licence compliance conditions (EA, EMP, WUL, AEL, etc). This is effective for mitigation against any gaps in the EMP and to regularly identify new environmental impacts and risks that should be addressed on site.

9 DECLARATIONS

INDEPENDENT AUDITOR DECLARATION

Appendix 7 of GNR 982 refers to the need for the independent auditor to declare his/her independence of the holder of the EA.

NAME OF INDEPENDENT AUDITOR: _____Matilda Mbazo_____

UNDERTAKING

I, ___Matilda Mbazo_____, the undersigned and duly authorised thereto, by WSP, have studied Sasol Bioworks Facility and compared the operations to the approved EMPr and compiled this report to the best of my knowledge. This section should be read with **Section 2**.

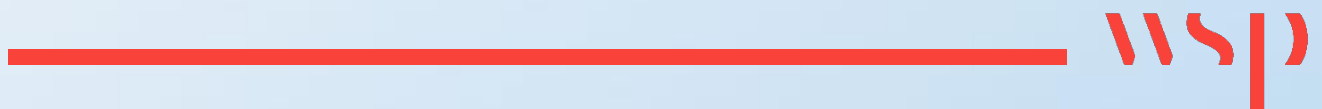
Signed at ___Midrand_____ on this the ___17_January_____2024

SIGNATURE OF INDEPENDENT AUDITOR

SIGNED IN LINE WITH THE REQUIREMENTS OF NEMA, GNR 982, APPENDIX 7, AS PUBLISHED UNDER THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT (NO. 107 OF 1998), AS AMENDED.

Appendix A

AUDITOR CVS





Matilda Mbazo

Earth and Environment, Environmental Planning & Advisory, Intern

CAREER SUMMARY

Matilda Mbazo graduated from Monash South Africa with a BSc in Social Sciences (cum laude) in 2021 and completed her BSc Hons in Geography at University of Witwatersrand in 2022. Matilda is currently pursuing her MSc in Environmental Sciences at University of Witwatersrand. Matilda is an Intern in the Environmental Planning and Advisory Division of WSP Group Africa based in the Waterfall office. Matilda has less than a year experience in the environmental field and currently provides technical and strategic input on a diverse range project in the environmental management field, including environmental audits.



1 < years with WSP

Language

Afrikaans, English, Tswana, Ndebele, and Zulu

EDUCATION

Monash South Africa – Bachelor's degree in Social Sciences	3 years
University of Witwatersrand - Bachelor of Science Honours (Geography)	1 year
University of Witwatersrand – Master of Science (Environmental Sciences)	current

PROFESSIONAL HISTORY

WSP - Graduate Consultant	current
WSP - Intern	2023
WSP - Vacation Student	2021 - 2022
IIE MSA - Administration Assistant	2020 - 2021
Cotton On Group - Sales Associate	2020 - 2021

PROFESSIONAL EXPERIENCE

FFS Chloorkop Fired Heater

July 2022 to June 2023

ECO: EA and EMPR Compliance Audit

Environmental Auditor : EA and EMPr Annual Compliance Audit

Sasol South Africa Limited, Sasol Sasolburg EA Audits, South Africa

October 2022 to October 2023

Environmental Auditor



At the Sasol One Complex in Sasolburg, nine unit operations were subject to an external compliance audit against their EA and EMPr criteria.

South 32: Wessels and Mamatwan Mine, EA and EMPr Audits

November 2023

Environmental Auditor : EA and EMPr Compliance Audit

Dissertations and Research Projects

Department of Geography, Archaeology and Environmental Studies, University of Witwatersrand, Master of Science Dissertation.

2023-2024

To quantify the interactive effects of extreme drought, fire frequency, and mega-herbivory on tree density in a Marula-Knobthorn savanna using Geographic Information Systems and Remote Sensing.

Department of Geography, Archaeology and Environmental Studies, University of Witwatersrand, Bachelor of Science (Geography), Research Project

2022

Assessment of flood impact at the Hennops river, streaming from Tembisa to Centurion, using Remote Sensing and Geographic Information System.



Tshepho Mamashela

Earth & Environment - Environmental Consultant

CAREER SUMMARY

Tshepho Mamashela is an Environmental Consultant currently working for WSP Group Africa at the Johannesburg, Waterfall office in the Environmental Planning and Advisory Department. She is an Environmental Management professional with over 5 years' experience in the private and public sector. Tshepho has experience in environmental management field with expertise in environmental impact assessment, environmental auditing, environmental management plans.



<1 years with WSP

6 years of experience

Area of expertise

Environmental Management
Environmental Impact Assessment
Compliance Auditing

Language

English

EDUCATION

Bachelor of Science (Honours), Environmental Management, University of South Africa	2019
Bachelor of Science, Geography, University of Pretoria	2017

ADDITIONAL TRAINING

Esri ArcGIS Basic	2019
Esri ArcGIS Standard	2019

PROFESSIONAL MEMBERSHIPS

EAPASA – Environmental Assessment Practitioner Association of South Africa- Registration No. 2019/18	2019
	2022
SACNASP – South African Council for Natural Scientific Professional - Certified Natural Scientist – Registration No. 120878	2021

PROFESSIONAL HISTORY

WSP Group Africa (Pty) Ltd	2023 - present
Mills and Otten	2023 – 2023
Environmental Consultant International	2021 -2022
Esri South Africa	2019 -2020
Limpopo Department of Economic Development Environment and Tourism	2018 -2019



Tshepho Mamashela

Earth & Environment - Environmental Consultant

Mabyoko Environmental Projects

2017 -2018

PROFESSIONAL EXPERIENCE

Environmental Impact Assessment Process

McCormick Property Development, Development of a New Shopping Centre, Motor City, Private Hospital and Housing in Dan Limpopo Province, South Africa

2023

EAP

Compile the Scoping Report and the Environmental Impact Report.

Cubisol Investments, Replacement of an existing sewer pipeline BA Gauteng Province, South Africa

2023

EAP

Compile the BA report and conduct public participation.

L Gromer, Expansion of egg processing facility, North West, South Africa

2023

EAP

Compile the BA.

Engen Petroleum, Upgrade and Expansion of the Engen Impala Filling Station, Limpopo, South Africa

2023

EAP

Compile the BA report, application forms and conduct public participation.

African Realty Trust, Construction of six in-stream storage dams at Letaba Estate, Limpopo, South Africa

2022

EAP

Assisted with compiling scoping report, application and related public participation documents.

Garonga Safari Camp, S24G Application for Garonga Safari Camp, Limpopo, South Africa

2021/2022

EAP

Assisted with compiling scoping report, application and related public participation documents.

McCormick Property Developers, Development of shopping centre and filling station at Madombizha, Limpopo Province, South Africa

2018/2019

Case officer

Review the BA for decision making process.

KHPJ Property Developers, Mixed-use development at Tiyani-B, Limpopo Province, South Africa

2018

Case Officer

Review the Scoping Report and Environmental Impact Report for decision making process.

Thulamela Local Municipality, Demarcation of 500 sites at Maphefeni, Limpopo Province, South Africa
Year from/to

2018

Review the Scoping Report and Environmental Impact Report for decision making process.



Tshepho Mamashela

Earth & Environment - Environmental Consultant

L. P Mogobobye Hydraulics, Filling station at Sifikile Village, Bojanala, North West Province, South Africa
2017/2018
EAP

Assisted in compiling the BA and supporting documentation including application forms and public participation material.

Compliance Auditing

Total Energies, Filling Moutse Mall Filling Station, Limpopo Province, South Africa
2023

Environmental Control Officer

Provided Environmental Control Officer (ECO) services by conducting monthly EMPr and EA audit for the construction of the filling station.

Sasol, Sasol Ammonia Storage Facility Upgrade, Free State Province, South Africa
2023

Environmental Control Officer

Provided Environmental Control Officer (ECO) services by conducting monthly EMPr and EA audit for the construction of the ammonia storage facility.

Cubusol Investment, Soshanguve Mall Upgrade, Gauteng Province, South Africa
2023

Environmental Control Officer

Provided Environmental Control Officer (ECO) services by conducting monthly EMPr and EA audit for the construction of the mall.

Alley Road, Residential Construction at Meyerton, Gauteng Province, South Africa
2023

Environmental Control Officer

Provided Environmental Control Officer (ECO) services by conducting monthly EMPr and EA audit for the construction of the residential complex.

Lynx Construction Group, Thatchfield Mall Construction, Gauteng, South Africa
2023

Environmental Control Officer

Provided Environmental Control Officer (ECO) services by conducting monthly EMPr and EA audit for the construction of the mall.

Emfuleni Estate Homeowners Association, Annual Water Use License Compliance, Free State Province, South Africa
2023

Environmental Control Officer

Provided Environmental Control Officer (ECO) services by conducting annual WUL audit.

Engen Petroleum, Annual Compliance Audit for Gauteng Site, Gauteng Province, South Africa
2023

Environmental Control Officer

Provided Environmental Control Officer (ECO) services by conducting monthly EMPr and EA audit for the operation of the filling stations. The following filling station were audited:

- Engen Hazeldene Convenience
- Engen Vega Service Station
- Engen Silver Lakes Convenience



Tshepho Mamashela

Earth & Environment - Environmental Consultant

- Engen R511 Tanganani
- Engen Wierda Park Motors
- Engen Lombardy Convenience Centre
- Engen Country View Service



Building 1, Maxwell Office Park
Magwa Crescent West, Waterfall City
Midrand, 1685
South Africa

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Annexure B – Upgrading of Bio-works at Sasol One Site– ref (EMS/1 (e),1(j),1(p)/08/42)

Environmental Management Programme Operational Phase

Mitigations measures identified during the environmental impact assessment, for the operational phase of the project, defining the impact management outcome and impact management actions to enable compliance to this regulation.

Impact management outcome	Impact management action
Air Quality (Emissions and Odours)	No mitigation measures are proposed, since it is unlikely that there will be major changes in emissions
	There are no continuous odour concerns the Bio works which require the implementation of mitigation measures
	If complaints indicate inadequate compliance with the EMP, source of the problem must be identified, and existing procedures modified to ensure that the problem is rectified
	The Operational Manager will respond timeously in the event of any complaints by local residents or other about odours
Groundwater Quality	Inclusion of the four new boreholes into the Sasol monitoring network so as to monitor any changes or impacts of the two new trickling filters and humus tanks once they have been constructed
	All treated water discharged from the works must comply with the Water Use License requirement
Water Management	Stormwater should be diverted away from all the working areas & the stormwater/run-off must not be contaminated by any substance
	Spills of potential contaminants must be immediately cleaned up and neutralised. Such spills must be handled with consideration to health and safety considerations
	Ensure incident/complaint registers are established & maintained
	Corrective action is required to be undertaken immediately of a complaint made, or potential/actual leak or spill of polluting substance identified. This includes stopping the contaminant from further escaping, cleaning up the effected environment as much as practically possible and taking preventative measures
	An incident reporting system will record significant events & issues with water quality
	In the event of a major spill or leak of contaminants, the administering authority must be contacted immediately as per incident reporting procedures.
	In the event that water quality at the monitoring locations is found to fall outside of the prescribed guideline levels, the source of the deviation must be investigated, and measures taken to correct the problem.
	No ground water or surface water must be polluted by any activities on site.
Waste management	All structures and/or components replaced during maintenance activities are appropriately disposed of at a waste disposal site or sold to a recycling merchant for recycling

	5.5 WASTE MANAGEMENT b) Ensure that spillage of oils and other hazardous substances are limited during maintenance. Should any accidental spillage take place, it must be cleaned up immediately
	Waste must be stored and handled according to the relevant legislation & regulations
	General Waste must be recycled where possible or disposed of properly.
	Hazardous Waste must be disposed of at an appropriate hazardous waste disposal site
	Waste collection must be monitored on a regular basis
	Waste documentation must be completed and available for inspection on request.
	A complaints register must be maintained, in which any complaints from the community must be logged. Complaints must be investigated and, if appropriate, acted upon.
	Corrective action is required to be undertaken immediately after a complaint is made or non-conformance is identified
	Upon the identification of any non-conformance, appropriately feasible remediation measures must be determined and implemented
	An incident reporting system will record and manage the follow up of non-conformances