INTERNATIONAL CYANIDE MANAGEMENT CODE
PRODUCTION SUMMARY AUDIT REPORT

Operation General Information

Name of Production Facility: Sasol Cyanide Production Facilities # 1 and # 2

Name of Facility Owner: Sasol South Africa (Pty) Ltd

Name of Facility Operator: Sasol Sasolburg & Ekandustria Operations

Name of Responsible Manager: Mr Colin Marais

Address: Sasol Chemicals Midlands, Bergius Rd, Industrial Zone 2, Sasolburg

State / Province: Free State Province

Country: South Africa

Telephone: +27 16 920 2023 / +27 83 417 6788

Fax: N/A

Email: colin.marais@sasol.com

Operation Location Detail and Description

The scope of this ICMI production audit covered the Sasol No 1 and No 2 Cyanide Production Facilities and supporting infrastructure at Sasolburg, South Africa.

Sasolburg & Ekandustria Operations is a division of Sasol South Africa (Pty) Ltd. Sasolburg Operations consists of a number of support functions and chemical production facilities of which the Cyanide plants are one.

The Cyanide plant is a production facility consisting of two operating plants, namely Cyanide 1 & Cyanide 2, located in the Sasol Midlands Site. The facility specialises in the manufacture of liquid sodium cyanide solution for use in the South African gold mining industry. Only liquid cyanide in bulk tankers is dispatched from this site.

No new cyanide facilities were constructed in the last three year period, only modification and maintenance have been conducted to the cyanide production and storage facilities.

Auditor's Finding

X **in full compliance**

This operation is ☐ in substantial compliance
*(see below)

☐ not in compliance

with the International Cyanide Management Code.

Sasol Cyanide Production Facilities # 1 and # 2 — Name of Facility

Signature of Lead Auditor

13 December 2021 — Date

Compliance Statement

"This operation has not experienced any compliance issues or significant cyanide incidents during the previous three-year audit cycle."

Auditor Information

Audit Company: Transheq Consulting and Auditing (Pty) Ltd

Lead Auditor: Richard Durrant

Lead Auditor Email: richard@transheq.co.za

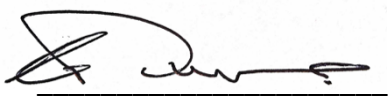
Names and Signatures of Other Auditors: NOT APPLICABLE – SOLE AUDITOR

Dates of Audit: 04 to 08 October 2021

Auditor Attestation

I attest that I meet the criteria for knowledge, experience and conflict of interest for a Cyanide Code Certification Audit Lead Auditor, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the International Cyanide Management Institute for Code Certification Auditors.

I attest that this Summary Audit Report accurately describes the findings of the certification audit. I further attest that the certification audit was conducted in a professional manner in accordance with the International Cyanide Management Code Cyanide Production Verification Protocol and using standard and accepted practices for health, safety and environmental audits.

Sasol Cyanide Production Facilities # 1 and # 2 Name of Operation	 Signature of Lead Auditor	13 December 2021 Date

Principles and Standards of Practice

Principle 1 | OPERATIONS

Design, construct and operate cyanide production facilities to prevent release of cyanide.

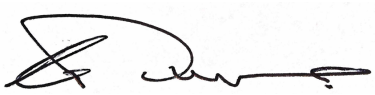
Standard of Practice 1.1

Design and construct cyanide production facilities consistent with sound, accepted engineering practices and quality control/quality assurance procedures..

X in full compliance with

The operation is ☐ in substantial compliance with Standard of Practice 1.1

☐ not in compliance with

Sasol Cyanide Production Facilities # 1 and # 2 Name of Facility	 Signature of Lead Auditor	13 December 2021 Date

Summarize the basis for this Finding/Deficiencies Identified:

At the last audit conducted in October 2019 the quality control and quality assurance programs were found to have been in order during the construction of the cyanide production and storage facilities. Cyanide facilities previously found in compliance with the Code's design, construction and quality assurance/quality control requirements remain in compliance.

No new cyanide facilities were constructed in the last three year period, only modification and maintenance have been conducted to the cyanide production and storage facilities.

Records demonstrating the implementation of quality control and quality assurance programs during construction and modification of these facilities, and as-built drawings stamped by a certified professional engineers are on files and reviewed. Construction records also include documents sign-off. A production and safety improvement has been that the manual Dropout Valves on Cyanide 1 were replace with automated air operated valves with a remote operator control panel.

The site also has a solid cyanide store facility. No modifications or changes have taken place on the facility since the original construction. Building floors and walls provide impermeable barriers to potential releases. Facility is fully bunded. There are not cranes or racking, no tanks, in use at this facility. The solid store facility is in the Auditors opinion is excellent condition and fit for purpose. This store is not in regular use and is only used as an emergency backup facility to the liquid cyanide production facility operated by Sasol.

Management of Change (MOC) packs which including technical drawings are in place.

Appropriately qualified persons have reviewed the facility construction and provided documentation that the facility has been built as proposed and approved. Annual Civil Assessment inspections are undertaken to determine the structural integrity of the plant structures as are inspections of the ammonia storage tanks. SAP driven inspection schedules are raised monthly for a specify area on an annual basis. This includes concrete, steel beams, pipe bridges, manholes, bund areas, etc

It was observed by the auditor during the inspection that the general condition including steel structures and drains appear to be in a good condition and well maintained, confirming the systems in place are working adequately.

The materials used for the construction of the cyanide production facilities are compatible with reagents used and processes employed. No changes to material specifications were made since the previous recertification audit and all replacement and repairs are to comply with original specifications.

MOC processes, where applicable, will include signoff by the Safety Health and Environmental (SHE) Department in all instance.

There are automatic systems and Plant trip mechanisms to shut down production systems to stop gas flows, stop pumps, release emergency nitrogen into the process, shut down reactors using back up power to enable an orderly plant shutdown in case of power outages. Interlocks are in place to respond to temperature variations, pressure differentials, and flow rates. Fail safe systems are installed on valves.

The tanker loading system was improved following recommendations from an earlier incident investigation. Additional pressure checks put in place to prevent spraying after failure of primary venting system.

The bulk tanks are mechanically linked; level measuring instrumentation and alarms are fitted. Interlocks will stop filling of tanks if they reach 95% of capacity.

Observed during the site inspections that the cyanide is managed on concrete to prevent seepage to subsurface. No significant damage to the concrete was observed and generally is in excellent condition.

The site inspection confirmed that repairs have been completed in various bunds and the expansion joints are generally in good conditions. All bunds are constructed of concrete and well maintained. All storage tanks are placed inside a secondary containment

Weekly bund inspections are conducted. Further to weekly bund inspections further inspections are conducted following rain storms to ensure that the four CAP dams overflow in a controlled manners as designed and as planned.

A Cyanide Water Model is in use to simulate a potential leak and excessive rain fall situations. To date there has been one event about 2016 where a storm event which lasted a week with consistent high rain fall tested the modal in practice.

Stock tank level indications on Distributed Control System are fitted with high level alarms.

Tanks are mechanically linked; level measuring instrumentation and alarms are fitted. Interlocks will stop filling of tanks if they reach 95%.

Secondary containment is at a minimum of 110% of the largest tank volume but as sighted by the auditor are normally in excess of this 110%. Each tank and each bund are labelled with their respective capacities and all dams are lined. All bunds are constructed of concrete and maintained. All storage tanks are placed inside a secondary containment. All dams are fully lined.

Sasol Cyanide Production Facilities # 1 and # 2		13 December 2021
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Pipelines are included in the Planned Maintenance System (PMS) and form part of the operational inspections. PMS inspections and Process inspections are used as preventative measure for spill prevention of the cyanide solution pipelines. The pipelines are installed over competent secondary containment and over a concrete paving.
Solid cyanide is stored in limited quantities in a secure warehouse. The solid cyanide warehouse storage and operation is conducted in a well-constructed and well maintained purpose build structure and is fully enclosed with an impermeable concrete floor surface. There is no drainage system and the warehouse is fully bunded. There are no safety showers, potable water or any other sources of water in or near the warehouse. The warehouse building is situated in a remote position within the greater Sasol Midland Site and there are no buildings, activities or materials stored within 300m of the warehouse. Weekly warehouse inspection reports are in place. During the audit the auditor verified that the secondary containment was in good condition and there is no materials stored within the containment that compromise the necessary capacity.
The solid cyanide store only has natural ventilation with roof vents along the entire roof apex with adequate cover to prevent the ingress of rain water. There is also natural venting between the building walls and the roof structure. No dust is generated as the solid cyanide boxes are not opened in the warehouse as they are transported to the sparging facility at the cyanide plant for processing.
The solid store facility is in the Auditors opinion is excelled condition, adequately ventilated and fit for purpose.
Access onto the Sasol Midland Site is strictly controlled and the site is classified as a South African Government Key Point in terms of the National Key Points Act, 1980 and Amendments / Critical Infrastructure Protection Act.

Standard of Practice 1.2

Develop and implement plans and procedures to operate cyanide production facilities in a manner that prevents accidental releases.

X in full compliance with

The operation is ☐ in substantial compliance with Standard of Practice 1.2

☐ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The facility has extensive procedures in place that describe the standard practices necessary for safe and environmentally sound operation. Work Instructions, Standard Operating Procedures and Check Lists are in place. Some Work Instruction are currently in the process of being rewritten as Safe Operation Procedures. There are also assessments, checklists, log sheets, training manuals, Planned Job Observations and Permits to Work. The solid cyanide store operation procedures form part of the overall facility procedures.
There are contingency plans for non-standard operating situations in place such as Area Emergency Action plan for Medical Emergency, Cyanide Exposure, Toxic or Flammable gas and Fire of Explosion.
Management of Change Procedure (MOC procedures) - Procedure for Management of Change was sighted. This procedure is audited by PSM (Process Safety Management - either SASOL or external contractors) and DQS (ISO Auditors) annually.
No major change were made to the MOC procedures used since the previous audit – editorial changes only.
Not undertaking an MOC assessment is a dismissible disciplinary offence in terms of Sasol procedures.
All MOC process include sign off by Health, Safety and Environment officials in all instances.
Preventive maintenance programs are implemented and activities are documented for equipment and devices necessary for cyanide production and handling.
From July 2015 the WMS (Work Management System) has been implemented as well a Work Management Process with a revision in November 2019. SAP (SAP Software international business management software systems) is used as the work and task capture system. Activities include planned inspections and generation of maintenance orders. SAP system will contain full histories. Electronic
Plant Condition Management Software (PCMS) system is used for statutory inspections and record keeping. The SAP system is used for generating maintenance orders and updates progress and the close out on maintenance inspections and works orders.

Sasol Cyanide Production Facilities # 1 and # 2		13 December 2021
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There is no equipment in the solid cyanide warehouse that requires ongoing preventative maintenance. Repairs to building or the roller shutter entrance door are carried out as an when required. There is no electricity feed to the store, no lights and no water.
Process parameters are monitored with the necessary instrumentation and the instrumentation is calibrated according to manufacturer's recommendations. Both Cyanide 1 and 2 are equipped with Delta V Digital Control Systems. Certification of instruments is done using certified, calibrated instruments to check the operational instruments.
Process calibration is done, based on works orders automatically generated in the SAP PMS schedules. Cyanide Calibration of Critical Equipment Index and schedule is in place and equipment is calibrated according to a the schedule. Sighted calibration certificate for Pressure Transducer and digital indicator and calibration certificate for radiation survey meters. Manufacturers of the radiation survey meters do not recommended frequencies for recalibration but observation has indicated that instruments have been in specification when calibrated. Sasol specification is to calibrate the instrument every 18 months. The Technicians are trained in the calibration methods. Sampled and sighted the qualification certificates of the instrument technicians.
Procedures are in place and implemented to prevent unauthorized/unregulated discharge to the environment of any cyanide solution or cyanide-contaminated water that is collected in a secondary containment area. Procedure - Management of Water and Waste Water on the Sasol 1 and Midland sites and Procedure - Midlands Effluent Control Works Instruction – High Cyanide from Cyanide Plant. A water balance model - cyanide plant contaminant model is used to assist with the management of water in the plant by simulating various scenarios and demonstrating the adequacy of dam capacity. Critical scenarios were identified and appropriate procedures developed to prevent discharge to the environment. The model includes 16 assumptions such as ICMI specification for free cyanide, the legal specification for total cyanide. Rainfall volumes base on various paved surfaces. Dam capacities and tank capacities. Tank rupture simulation assumes biggest tank is 100% full, etc. Sighted Work Instruction for sampling of storm water on cyanide plants.
Emergency Response Plan is in place when excessive storm events could result in overtopping of the system and potential discharge from site.
The warehouse operation is conducted on an impermeable concrete surface. There is no drainage system and the warehouse is fully bunded. In emergency conditions there is a Works Instruction – Entering Sasol Cyanide Solid Cyanide Store which states that if water enters the store building, water is to be returned to plant effluent dams, no water to be released to environment.
Cyanide waste is disposed of by contract to Enviroserv Waste Management Ltd at the Holfontein (H/H) high hazardous waste disposal site. The Holfontein site operates under a valid Licence issued by the South African National Department of Environment, Forestry and Fisheries. The Holfontein disposal site is owned and managed by Enviroserv Waste Management Ltd.
Sighted cyanide waste register. Soot is transported to Holfontein in a membrane (lined) sealed bags because of potential risk of auto-ignition of soot and high cyanide contents. The coarse soot is sold as a non-hazardous by-product. All waste is transported in a close container due to the classification. Disposed of soot is ongoing. Enviroserv Waste Manifest documentation evidence in place. Fine soot is classified as Hazardous UN Class 6.1.
Scrap metal is decontaminated on site before being sent to scrap metals dealer as per contract, for smelting. A decontamination certificate is issued for each consignment of scrap.
Sasol does not transport solid cyanide to end users, only liquid sodium cyanide solution is produced and transported. Bulk tankers used for the transport of liquid cyanide are designed, labelled and operated as per South African legal standards for bulk tankers and hazardous substances transport. The tankers are operated by a cyanide code compliant third party, Tanker Services (Pty) Ltd. Tanker Services is a certified ICMI transporter.
Bidvest International Logistics are a ICMI certified road transporter used for road haulage of solid cyanide from the Durban Port to Sasolburg.
Safety Data Sheets (SDS) sheet for liquid cyanide and solid cyanide are on file.

Standard of Practice 1.3

Inspect cyanide production facilities to ensure their integrity and prevent accidental releases.

X in full compliance with

The operation is ☐ in substantial compliance with Standard of Practice 1.3

☐ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The facility conduct routine inspections of tanks, valves, pipelines, containments and other cyanide production and storage facilities on a regular and planned basis. Sighted Cyanide 1 storage bund inspection report sheet dated 03/11/2020 covering floors, joints and walls. Repairs are scheduled as per the priority of the observations in the report. All deviations are loaded as SAP job requests and closed out in SAP. Records in place for monthly bund inspections covering period 2019, 2020 and 2021 sighted. Informal on-going observations and inspections by shift staff are recorded by variance in the Shift Manager's Handover Logbook. Records in place for 2019, 2020 and 2021. The reports confirmed that faults are reported to SAP including a notification number reference.

Tanks holding cyanide solutions for are inspected for structural integrity and signs of corrosion and leakages. Thickness tests are conducted by Sasol's Government Approved Inspection Authority (AIA). Planned Maintenance System (PMS) SAP works order is handed to AIA for advanced warning to plan and conduct the tests. Confirmed thickness tests are conducted and sighted various thickness test report. Operational inspection include looking for leaks and rust. Any deficiencies observed are reported by exception on the shift report log sheet for critical repairs and recorded and submitted on a works order to Engineering. 5 yearly visual external inspection are scheduled as well as 10 yearly full internal inspections (statutory). At the time of the audit Tank H was offline for its 10 year inspections and thickness testing. This was confirmed during the site inspection. Sighted procedures for Inspection of Atmospheric Above Ground Storage Tanks. Statutory inspection checklist by the AIA include detailed inspection sheet and checklist in place.

Secondary containments are inspected for integrity, the presence of fluids and their available capacity. SAP inspections are done every year or two years as appropriate. Sighted procedures Inspection of Atmospheric Above Ground Storage Tanks - Inspection procedure integrity, corrosion, leakage and bunds. Weekly bund inspections are conducted every Tuesday by the morning shift. Procedure – Cyanide Bund Weekly Inspection. Sighted examples of weekly inspection conducted. A works order is made out when deficiencies are noticed. Any work done is recorded in SAP. Weekly bund inspections include the checking that bund drain valves are closed.

Pipelines, pumps and valves for inspected for signs deterioration and leakage. Thickness tests are conducted by the Sasol AIA. A PMS SAP works order is handed to AIA for advanced warning to plan and conduct the tests. Sighted records and confirmed thickness testing reports for tests on pipelines since the re-certification inspection. Weekly operational visual inspections are carried out. A works order is made out when deficiencies are noticed. Any work done is recorded in SAP.

Pumps are inspected on the SAP PM system on a daily basis for leakage, glands, mechanical seals, noise and general condition, bolts, seal levels, seal pressure, oil levels, guards, cavitation, space for comments and notification including job card numbers, sighted pump checklist. Checklist carried out by Sasol Rotating Equipment (Turbo Services) maintenance staff who pass the information to plant maintenance who convert requirements to job cards and action.

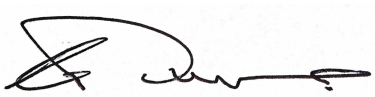
Safety relief valves are included on PM system – 3 yearly inspections and testing

Drop out valves are covered under daily maintenance covering greasing, tightening of valves.

Sampled pipeline inspection for ammonia line and Corrosion circuit included thickness and x rays - Non Destructive Testing carried out. Natural gas line – defect identified and notification loaded on SAP.

Annual pipeline inspections conducted previously have fallen way and have been replaced by Sasol Standard Piping Inspection Plan (PIP). Inspections now based on factors such as pipeline material, pipeline contents, pressure, temperature, lagged or not lagged and other factors which would affect the integrity of the pipeline or valves.

No reusable transport containers are used by Sasol. All the cyanide product leaving the plant is transported in bulk road tankers owned and operated by an independent contractor who are an ICMI approved transport operator.

Sasol Cyanide Production Facilities # 1 and # 2		13 December 2021
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The facility uses a formal failure mode type analyses and legal requirements as well as daily Plan Do Reviews and weekly Schedule meetings to determine inspections frequencies. SAP report analysing activities including breakdowns which can be used to review inspection frequencies and adequacy.
Sasol Reliability Engineering Division review maintenance frequencies following an analyses and investigation of equipment failure and the causes for the failure. Inspection frequencies can be reviewed depending on the outcome. Critical alarm frequencies are monitored to identify problem causes. This may result in the revision of inspection frequencies. Information is loaded on SAP system. No evidence could be found to substantiate this process as the plant has been operational for many years and reliability well entrenched. Shift operational inspection frequency is deemed adequate.
All inspections are documented and included date of the inspection, the name of the inspector, and any observed deficiencies. Maintenance records and statutory inspections are kept in SAP and are available. Detailed records are retained in PCMS - Plant Condition Management Software program. SAP and PCMS records are retained for life

Principle 2 | WORKER SAFETY

Protect workers' health and safety from exposure to cyanide.

Standard of Practice 2.1

Develop and implement procedures to protect facility personnel from exposure to cyanide.

X **in full compliance with**

The operation is ☐ in substantial compliance with Standard of Practice 2.1

☐ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The facility has developed extensive procedures to minimize worker exposure during normal plant operations from receipt of raw materials through finished product packaging and shipping. The plant only produces liquid sodium cyanide, shipped in bulk tankers to the end users. The procedures include the required PPE and pre-work inspections for the work. Work instructions and procedures include abnormal and emergency headings. Sasol Group Procedure for Work includes the requirement for a risk assessment, supported by a specific task risk assessment by the Artisan before they carry out any job. The use of standby (the buddy) is included in the specific procedures where a standby is required – confirmed in Permit to Work Procedure. Sasol Regional RSA Procedure for Work Permits confirmed in RSA: Permit to Work Procedure (RSA refers to Republic of South Africa). Samples of work instructions were observed (Personal Protective Equipment (PPE) and pre work inspections are included in the work instructions). Process Safety Management (PSM) has been implemented Sasol wide. The work permits are kept and archived in the electronic Eclipse system. Only authorised persons can issue and accept and sign off permits. Sighted various completed Sasol Permit to Work documents during the audit.
As stated above procedures include abnormal and emergency conditions to be considered. Risk assessment is part of the permit to work, supported by a specific task risk assessment by the Artisan before the job is carried out. Sighted Emergency Management Risk Assessment covering the Cyanide plants. This report identifies the various risk scenarios associated with the plant and contributes to desktop planning and drill scenario choices. The Emergency Management Risk Assessment (EMRA) covers support areas. Process Hazard Analysis (PHA) incorporates the production areas. Monthly desktop emergency per shift (three shifts in total) scenarios are carried out. Sighted Credible Scenarios Schedule for desktop drills (up to June 2022). Sighted records of past exercises carried out over the last three years. Deviations from procedures recorded during the process and if required changes to procedures can be addressed.
Exposure during maintenance related activities is managed by the process that all maintenance is undertaken using the Permit to Work system and includes PPE, hazards, emergency conditions and abnormal conditions, as well as protective measures, actions and responses. Decontamination procedure for the cyanide plant are used for decontamination of employees, service providers, visitors, and equipment leaving site for maintenance and disposal. No contaminated equipment leaves site.
Daily assurance meetings are held where safety forms a regular agenda item. Operators can raise issues relating to procedures at the daily shift meetings. Similarly, the daily maintenance meetings will include safety and procedures. A Quality practitioner has been appointed for the Cyanide Plant to

manage document issues and procedure update and control. Procedures are updated and circulated electronically to all staff on plant, who have the opportunity to comment appropriately. All staff on plant have access to email, irrespective of job level. Flash notifications of incidents are also shared using the same email system. Monthly Safety Health and Environment (SHE) committee meetings are conducted - sighted meetings index electronically and sampled copies of meeting electronic minutes going back for over three years.
Worker exposures are governed by risk assessments and health risk surveys which influence the writing of procedures and work instructions which include relevant PPE and mitigation controls. Any “hot spots” are activity driven rather than area based, e.g. breaking into pipelines, draining the bag house, sampling activities and certain vessel entries.
This procedure applies to liquid cyanide production facilities and solid cyanide warehouse and handling activities. Cyanide Plant PPE Requirements–- Generic PPE Flame and acid resistant overalls / Liquid Areas googles and gloves. Respirators and additional are task dependant as listed in Work Instructions. Gas monitoring are task dependent as listed in Work Instructions. Only area where there is a fixed CN gas monitor is at the “analyser hut” which is a small enclosed area. Warning lights and warning air horn will sound if CN gas is detected within this area. Entering Sasol Cyanide Solid Cyanide Store, Work Instruction is in place. Portable gas monitors are used when warehouse doors are opened and before entering the store to check for possible CN gas.
There is a procedure for monitoring of the stacks at Cyanide 1 and 2 Plants - Sampling of backup and vent scrubber and gas streams. The Procedure requires monitoring of gaseous emissions to demonstrate compliance with the permit conditions and specifies monitoring of HCN, H2, N2, O2 and CH4. HCN emissions are limited to 15 ppm derived from the National Environment Management legislation (NEM): Air Quality Act (with a trigger warning at 6 ppm). A new licence was issued in terms of the NEM Air Quality Act issued 31 March 2014 including the same requirements as the previous permit. Data sampled from the stack monitoring program sighted confirmed less than limits of detection. In addition, ten MX6 IBRID Multigas portable gas monitors units are used to ensure that workers are not exposed to hydrogen cyanide during the course of any operations that may cause the release of hydrogen cyanide as defined by the risk assessment for the job. No fixed CN monitors are used other than in “analyser hut”.
Portable gas monitors (MX6 IBRID Multigas units) are sent in weekly for calibration to the Sasol internal calibration department (manufacturer recommends 6 monthly intervals). IBRID electronic calibration records for 2019, 2020 and 2021 were observed and sampled. Electronic calibration records are archived indefinitely. The cyanide monitors are equipped with a deactivation function to prevent the monitor being used if not calibrated or faulty.
The use of a standby (the Buddy) is included in the specific procedures where a standby is required – confirmed in Sasol Regional RSA Procedure for work permits. Radio system is a Terrestrial Trunked Radio mobile radio system from an open channel system. This improves communication with the control room in case of emergencies. Work permits demonstrating the use of a trained buddy in cyanide-related work was sighted.
All plant based employees receive annual medicals, pre-employment medicals, exit medicals, and surveillance medicals are undertaken. Staff are blocked from entering the site at the security gate if not recorded as having had a valid medical. Sighted Procedure for medical surveillance.
The emergency procedures include washing of the contaminated cyanide PPE. The affected PPE will be disposed of according to the emergency procedure. This reduces the risk of sending any high risk contaminated clothing to the laundry. The normal laundry procedure is followed for routine washing of the overalls and work clothing after pre-washing in the laundry. The site has a cyanide specific laundry. Cyanide plant personnel are issued with overalls and work clothing which is returned at the end of the shift to be rinsed (pre-laundered) on the plant from where it is sent to an outsourced contractor for final washing. Laundering of work clothes forms a part of Decontamination procedure - Laundry Service in Cyanide Plant. Employees are required to change overalls after all spills or splashes. If visitors or contractors have clothing contaminated, they will be washed in the cyanide laundry. The effluent from the laundry is returned to the plant via Effluent Dam 1 for re-processing. The laundry was visited by the auditor during site inspection.
Procedure for symbolic safety signs, colour coding and emergency showers was observed. Sasol uses SANS (South African National Standards) standards for PPE signage. Goggle areas are delimited by yellow painting on handrails or on floor. The use of appropriate signage including Safety Data Sheets (SDS) display boards was verified during the site inspection. Observed the use of signage during the site inspection and observed that the standard of signage generally on the plant is good. The three entrances to the plant includes displaying the PPE requirements. Conditions of signage around the facility including the solid cyanide store was generally in good condition.
The use of signage prohibiting smoking, eating, and drinking and open flames in the appropriate areas

was verified during the site inspection. Smoking Policy was observed. Online Induction video includes reference to smoking eating and drinking and open flames. Confirmed during site inspection:

- The signage at the entrance gate to the plant complies with ICMI requirements.
- Prohibition signage was noted during site inspection

Eating and drinking is only permitted in dedicated mess room facilities.

Standard of Practice 2.2

Develop and implement plans and procedures for rapid and effective response to cyanide exposure.

X **in full compliance with**

The operation is ☐ in substantial compliance with Standard of Practice 2.2

☐ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Written emergency response procedures are in place and the Procedure for Level 1 Emergency, Level 2 Emergency, or Level 3 Emergency condition on the Cyanide Plant was sighted and details the actions and responsibilities in the event of an emergency on site are detailed to ensure there is a rapid and effective response to a potential cyanide exposure. Level 1 is within the plant; Level 2 is site wide and Level 3 is outside site boundary. Works Emergency Action Plan SSP (Sasolburg Site Procedure) is referenced to in the plant procedure for Level 2 and 3 emergencies. Area Emergency Action plan is referred to in the plant procedure. Cyanide treatment protocol is in place and on display at the Sasol Midlands site clinic. The clinic and the two external hospitals are familiar with the protocol.

Operational shift inspections are undertaken covering fire extinguishers, eye wash bottles and boxes, fire hydrants, utility points and safety showers. Reports are done by exception. The plant moved from paper-based system to an electronic system with more detail on the specific equipment and the ability to highlight deviations and when the inspection was not carried out. Safety showers form part of the monthly visual inspections. Sighted monthly inspection sheets since last audit which include inspections of:-

- Breathing apparatus (BA sets)
- Emergency plant telephone
- Eyebaths and emergency showers
- Eyewash bottles
- Fire boxes
- Fire extinguishers
- Fire hydrants
- Fire water monitor
- First aid boxes

Sasol Midlands Fire Station inspects fire extinguishers annually. Sighted inspection reports for 2018, 2019 and 2020. The reports mention deviations only. The Procedure for the Inspection and Maintenance of Fire and Life Supporting Equipment is in place. Fire Protection Survey (including maintenance, pressure testing and servicing) is conducted every 5 years. Sighted Report for the Cyanide Plant and Dry Cyanide Store undertaken 17 June 2020. Identified deviations where applicable. Observed and confirmed the installation and availability of safety showers and non-acidic powder fire extinguishers throughout the plant and at the solid cyanide store during the site inspections. No showers are installed at the dry cyanide store. Observed and confirmed that carbon dioxide fire extinguisher are not used in production environment.

Oxygen and resuscitators were observed at the plant control room for use in an emergency. The cyanide antidote is held in a dedicated refrigerator in the Control Room. In addition a cyanide medical treatment kit is also held in the Control Room. Both of these are only administered by the doctor attending the emergency. Potable water is available. Cyanide poisoning alarm points are located on Cyanide 1 and 2 Plants. Poison alarms are tested monthly on the 1st Friday of each month. A radio communication system in place for plant-based communications. The Clinic Emergency Room is fitted with defibrillators, oxygen points, beds, standby oxygen cylinders, points for portable oxygen distributor. Reported that 5 sets of Tripacks and 5 set of Cynokit 5g are available. Tripacks 2 packs in the refrigerator in the Emergency Theatre and Clinic pharmacy 1 pack in fridge at Plant Control Room, 1 at Public Hospital and 1 at Private Hospital in the nearby town of Sasolburg. If the plant cyanide alarm is

set off an alarm is triggered in the Clinic. The ambulance from the Sasol Emergency Services is then directed to a safe location for receipt of any affected personnel once it reaches the plant. Private ambulance service (Netcare 911) will be used to transfer patient/s from site hospital to external hospital if required. Communication between the clinic and plant is via telephone. First Friday of every month emergency tests are conducted. Sighted test records for cyanide alarm dated 05/06/2020 in detail and records in place for 2019, 2020 and 2021. Most recent test was conducted 03/09/2021.
First aid equipment on site consists of first aid boxes, BA sets, and emergency escape chairs. First aid boxes are maintained and replenished by the Sasol Midlands Clinic. Operational shift inspections cover cyanide antidote, oxygen, emergency BA sets, first aid box, cyanide antidote fridge, poisoning alarms. Clinic is responsible for ordering the cyanide antidote kits timeously according to a Stock Control Procedure. Sighted antidote kits in fridges marked with expiry date of August 2022. Cynokit 5g have an expiry date of 15 May 2023. BA sets are checked annually and medical oxygen supplies are checked by the Midlands Complex Emergency Services and replenished by Afrox (contractor). Oxygen can only be administered by trained Emergency Medical Services (EMS) and medical staff. First aid inspections in the plant are checked and recorded monthly in Inspection Management System (IMS) Procedure for First Aid Box Inspections – all boxes are sealed with a breakable plastic seal. Clinic will check and reseal first aid boxes as required. First aid boxes sighted in Control Room area were inspected October 2020 and next inspection due July 2024. Sighted BA set CY A40 and BA set CY B7 records in place for November 2018, 2019, 2020 and next inspection due November 2021
The Plant moved to electronic SDSs (Safety Data Sheets) available to all on the Intranet Bubbles Portal. All employees are computer literate and have access to computers. Drill down on electronic SDSs available to all on the Intranet - sighted and confirmed the availability on the Bubble Document Management System. Confirmed that the TaeKwang Solid Cyanide SDS is available electronically. The revised cyanide first aid protocol is available and on display in the clinic emergency room and the cyanide emergency treatment kit is in the control room. The business language of the plant is English and all procedures and informational materials are in English.
Tanks and pipes are clearly marked using a stencil signage format. Cyanide is identified by name with flow direction indicated on pipes, all tanks (all tanks and associated pipelines) are labelled. Observed signage during the site inspection covering pipes and process tanks.
Decontamination procedure sighted and implemented. Procedure details minor and major exposures to cyanide. Emergencies are decontaminated at the plant and the Clinic is equipped with the appropriate PPE and a specific cyanide emergency sealed bag. At the Clinic, a water hose is available outside at the ambulance receiving bay, and a shower and bath in the emergency room are available for decontamination. The clinic and hospitals assumes that the emergency team will deliver a decontaminated patient to the ambulance unless otherwise notified. Confirmed by interview with Doctor that the Plant will ensure that all cyanide patients are decontaminated before being delivered to the Clinic. Sighted a shower and bath in the emergency room which can be used for decontamination if required.
First aid is provided in any emergency situation and an ambulance is provided by the on-site Emergency Service to take the patient to the clinic.
Sasol Midlands Clinic is in place, patients are delivered to clinic by ambulance via gates directly from plant, gates operated by remote control by ambulance drivers. Clinic equipped with oxygen, TriPac and Cynokit 5g antidotes, water, medical equipment to treat cyanide cases. Trained staff include registered nurses and doctors on dayshift and 1 nurse and 1 doctor on standby after hours. The clinic can treat 16 patients in beds and 42 on oxygen points. Oxygen supply reticulation system has recently been upgraded. Clinic staff are trained in the plant level-based emergency plan – Cyanide protocol training given by Dr Lintso to clinic staff and hospital staff (sighted training records for 07/05/2021 on site - 17 attendees) and hospital training. EMS training records are maintained and managed using the Emergency Services Training Matrix which includes annual Sodium Cyanide Safety Awareness Training and Cyanide Emergency Protocol training.
Sighted Procedure for Ambulance Service and Ambulance Points – Sasol Sasolburg sites, which includes procedures for transport during day clinic hours to the on-site clinic and after clinic hours to Netcare 911 Vaal Park hospital off site. Patients can also be transported to FeziNgubentombi District Hospital. High level agreement with Netcare 911 private ambulance service is in place - not sighted. Sighted Mutual Aid Agreement between Sasol and neighbours NATREF, Karbochem, Safripol, Omnia and Metsimaholo Local Municipality. Agreement was signed during November and December 2016 and is still in place. This agreement covers emergency services (Ambulance, Fire Services). Sighted minutes of meeting of Mutual Aid Partners held in 2019 and 2020. No meetings have been held in 2021. Netcare Vaalpark hospital training was last conducted on 5/4/2018. Follow up training for the Netcare Vaalpark Hospital staff and the Netcare 911 Emergency Services will be continued once the COVID-19 situation has stabilized to allow for face to face contact training. Public hospital - FeziNgubentombi

District Hospital training remains outstanding due to the COVID-19 regulations and lack of resources or facilities for virtual training. The clinic liaises verbally with Netcare 911 Vaal Park Hospital and FeziNgubentombi District Hospital to ensure they have adequate staff, equipment and expertise available.
Cyanide exposure incidents investigation and evaluation procedures are in place. The standard Sasol Group Procedure for SHE Incident Management is the guidance document on the conducting of all incident investigations. Incidents are loaded onto Isometrics system for recording and investigations and actions and deviation management. No Cyanide incident or cyanide exposures or Lost Workday cases incidents have occurred since the last audit.

Principle 3 | MONITORING

Ensure that process controls are protective of the environment.

Standard of Practice 3.1

Conduct environmental monitoring to confirm that planned or unplanned releases of cyanide do not result in adverse impacts.

X in full compliance with

The operation is ☐ in substantial compliance with Standard of Practice 3.1

☐ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

It is possible for the facility to have a direct discharge to surface water but this does not normally occur, as effluent water and storm water within the cyanide plant is captured in the four lined concrete containment pits (A, B, C, D) prior to being returned to the plant to be used in the process. If Pit D is full, overflow will pass to the CAP Dams. Water from the CAP Dams is passed to the discharge from the site via the South Channel. Water sampling - A cyanide discharge is an abnormal and infrequent event. The discharge does not exceed the water standards during normal rainfall, exceedances may occur during excessive rains. The discharge is controlled upstream through an internal service levels agreement between the cyanide plants and the Site utility department. Sighted graphs of free cyanide from samples at the discharge point, analysed using the online analyser and the laboratory results. Indications are that the samples are all less than 0.02 mg/l WAD cyanide and graph results sighted extend back to October 2018. Limits of detection of 0.05 mg/l was improved to 0.01 mg/l. Mintek is used for inter laboratory comparison and quality assessment. Mintek results correlate very closely with the internal Sasol Laboratory results. Mintek is South Africa's national mineral research organisation. Free CN analyses is also done on a daily basis.
Probabilistic Water Balance Model is in use:
1. Sighted water model including dams A, B, C, D and the CAP dams.
2. Tank volumes are included to simulate a tank failure.
3. The model include the rainstorm which exceeded the 1:50 year 24-hour rain event which occurred in January 2021. The model indicates that there is a very limited risk of overflowing in the case of the storm event.
4. The model includes spillage scenarios.
5. The model includes the effect of dilution during rainstorm events on the dams.

As there is no established mixing zone, any discharge must contain less than 0.022 mg/l free or WAD CN at T1 sampling point being the first sampling point outside the boundaries of the site. Sighted graph of samples including check samples with MINTEK and all values are less than 0.022 mg/l free cyanide. Inter laboratory comparison with Mintek are conducted one a month. A project comparing the Sasol laboratory with MINTEK results was done and recommendations made. Sighted graph indicating some minor incidences of variability. The latest results show an acceptable correlation between MINTEK and Sasol results. Values downstream of the discharge is measured at T2, T5 and T6 and are less than 0.022mg/l free cyanide in all instances. No evidence to confirm an indirect discharge. The levels of free cyanide between T5 (upstream) and T6 (downstream) shows little difference indicating insignificant discharge of cyanide levels from the site. There is no evidence of indirect discharge to surface water. The solid cyanide warehouse has no discharge of any form of water. There is no numerical standard established by the applicable jurisdiction for WAD cyanide or any other species of cyanide in

groundwater, therefore there are no compliance points below or down gradient of the facility. There are no identified beneficial uses of the groundwater in the area, i.e. No boreholes that are extracting water for drinking purposes or stock watering. No change of the above statements at the previous re-certification audits. Values from boreholes are all are less than 0.1 mg/l total cyanide. The legal standard for groundwater is 0.1 mg/l total cyanide. Ground water pits are pumped weekly to contain cyanide plume within the site. Records sighted of pumping records on eight pits. Currently, there is no identified beneficial use for groundwater, designated by the authorities. An extensive monitoring borehole network for groundwater monitoring exists across the site. The authorities have not required the site to undertake any remedial action. Activities are still in place to remediate the groundwater, if required. Borehole results are monitored continually.

The operation can demonstrate that the levels of atmospheric process emissions of hydrogen cyanide gas or cyanide dust are limited in order to protect the health of workers and the community. There is a procedure for monitoring of the stacks at Cyanide 1 and 2 Plants. The Procedure requires monitoring of gaseous emissions to demonstrate compliance with the permit conditions and specifies monitoring of HCN, H2, N2, O2 and CH4. HCN emissions are limited to 15ppm derived from the NEM: Air Quality Act (with a trigger warning at 6ppm). Sighted Cyanide 1 and 2 stack results with some exceedances shown in May 2021. Non-compliance was reported to the Air Quality Officer. A full investigation into the internal sampling methodologies and analytical methods was conducted. Potential interferents were identified within the analytical methodology that could have led to false results. Therefore a decision was taken to consider an alternative sampling and analytical methodology and suspension of the internal sampling campaign. Sasol reverted back to the original operating conditions of using third-party sampling. Even though the internal sampling and analyses was suspended, there is no reason to believe that the plant was not in compliance since the plant operates under similar conditions than what it proved to be compliant in June 2021 as well as back to 2019. A full investigation report has been drafted, inclusive of a dispersion modelling report indicating the impact of the measured non-compliance was negligible. Once the results from the statistical sampling campaign is received, the investigation report will be completed and submitted to the local Air Quality Licensing Officer. Random sample results are occurring and it has been identified that contaminants in sample is masking the CN signature this includes H2O and Sulphur components potentially from the Natural Gas used on site. The sulphur has also recently been picked up in natural gas in other Sasol plants on the Midlands site. A second 3rd party has now been appointed to independently sample from Sasol and the first 3rd party. Sasol are also working closely with the Government Air Quality Officer. A final conclusion to this matter is expected around February 2022. Currently the site monitors for cyanide in groundwater up and down gradient of the site. Surface water monitoring is only down gradient of the site as up gradient flows are low and intermittent and not from a significant water course. No change in cyanide borehole monitoring network.

Surface water is monitored up and downstream at T5 and T6 and respectively data and trends graphs are in place. Over the period 01 October 2018 to 01 October 2021 the free cyanide levels were well below the 0.022mg/l ICMI allowable limit in all instances. Groundwater monitoring for cyanide is conducted 6 monthly from boreholes where the boreholes contain water. Stack emissions samples are monitored twice daily at 04:00 and 16:00. Surface water sampling is through continuous on-line monitoring, 4 hourly samples, daily samples and external third-party monthly samples. Frequencies are reviewed on a case-by-case basis with consideration of performance, normal, abnormal and emergency conditions or other factors which might influence results. The frequencies are deemed adequate. If there are deviations in the sample values, frequencies may be increased during the upset period. No change in frequencies since certification audit. Frequencies are dictated by water licence requirements. Frequencies are deemed adequate due to slow movement of groundwater in aquifer.

Principle 4| TRAINING

Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner.

Standard of Practice 4.1

Train employees to operate the facility in a manner that minimizes the potential for cyanide exposures and releases.

X **in full compliance with**

The operation is ☐ in substantial compliance with Standard of Practice 4.1

☐ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Plant specific induction training is given to all new employees. Plant hazard awareness training is conducted every 3 years for all employees. Contractors receive plant induction training every time they come onto the plant for work. Training includes induction training, plant specific training, special skills training, and work instructions including hazards associated with the respective task. Training is continually reviewed and revised and PSM (Process Safety Management) requirements from the wider site is also included in the work instructions. Refresher training is scheduled in the training matrix. Induction training contents changed to a Sasol generic induction which is not specific but Plant specific induction includes plant detail and cyanide information. Refresher on the specific job is done every time a Permit to Work is issued for a job. Pre-Task risk assessments are done before every task commences. Each employee has a PDP (Personal Development Program)

Detailed training matrix per employee includes plant hazard awareness training (with refresher training every 3 years). Engineering and Process training matrices are in place and confirmed during the audit that the matrices are up to date and includes the plant specific induction and refreshers. The training matrix flags training 2 months (mechanical) and 3 months (process) before the training expires. Contractors are given induction by the plant and records are kept. A standardised PPE training module is in place covering the entire Sasol operations. Every works instruction indicates what PPE is required. Training is covered in the Permit to Work process or if identified during the pre-task risk assessments. PPE signage is in place for each specific area. Decontamination is discussed as part of the pre task risk assessments. PPE training is included in the training matrix and conducted via electronic learning. Specific cyanide risk addressed in Cyanide Plant Awareness Induction. Sighted Training Matrix which includes all employees and the training requirements for the various jobs. Linked to the matrix is the employee's individual profile with the training to be undertaken and the progress completed. Competency assessments are undertaken by experienced plant personnel. Training of replacement staff is done through a structured program supported by training quality control systems and records. Experiential requirements for each job are documented, backed up with a personal development plan (PDP) and succession plan for each employee.

Production: Theoretical training is refreshed every 3 years. Theoretical training is evaluated using e-learning system. Practical training is done by the foreman using works instructions and recorded by PJO.

Mechanical: Mechanical baseline training is received on the persons trade, PJO is done on each task in the field and specific training is done as identified and needed. Training is done as per the training matrix which was confirmed electronically. All persons that executes any task on the cyanide plant will receive Cyanide Plant Awareness training.

Employees are trained, assessed and declared competent according to National Qualifications Framework (NQF) unit standards applying to Chemical manufacture. New or transferred employees must be "passed out" on new work or tasks to be undertaken. The pass out process is included in the procedure, which is managed through the Training Matrix. Additional skills will be addressed thorough the PDP process for personal growth and development. Contractors are not given access to the site unless they have completed the required training. Refresher training - every SOP document has a PJO incorporated into the document to determine competence or deficiencies. Evidence sighted of completed PJO for production and engineering activities. The training matrix was observed, which specifies training elements for each job. The training is provided by appropriately qualified personnel.

The Plant Learning Practitioner is a Qualified Training Assessor through Chemical Industries Education

& Training Authority (CHIETA) and has an ETDP (Education, Training and Development Practitioner) certificate (sighted Letter of Competence), and has chemical industry experience as an operator and working in a laboratory, lecturing at Vaal University of Technology and experience in developing training materials. Plant Foremen drive the practical training and competence will be determined by a combination of the Learning Practitioner as the Assessor and the direct report Foreman together with an independent Foreman to ensure neutrality. Evaluation of the effectiveness of cyanide training is conducted after theoretical training when the employee is given an assessment test. Practical training in the plant is checked by the training officer and the appropriate shift foremen. Shift foreman will monitor progress and return an employee for additional training, if necessary. Planned job observations (PJO) are used to check worker competency. The standard is each Foreman to undertake at least one PJO per month. Competency assessments are done by experienced plant personnel. Training records includes competency declarations. Competency declarations are backed up by PJO's, and other records of competency determination. E-learning tests are used as a testing strategy.

Standard of Practice 4.2

Train employees to respond to cyanide exposures and releases.

X in full compliance with

The operation is ☐ in substantial compliance with Standard of Practice 4.2

☐ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Training of workers in the procedures to be followed if a cyanide release occurs, employees are made aware of this during induction training - The procedure to be followed in the event of a cyanide release is Procedure for Level 1 , 2 or 3 Emergency Condition on the Cyanide Plant. The training is checked during planned exercises/mock drills. The planned exercises/mock drills cover health and safety and environmental scenarios. Contractors are covered by fulltime Sasol officials while on site. All staff receive emergency preparedness training every 2 years. Confirmed in the training matrix that it includes Sasol emergency training for plant staff. Emergency Services Level 1 training : Joint training session with site wide staff shift covering all worker shifts as per training plan covering all the Midland Sites, including the cyanide plant. Training covers both cyanide releases and worker exposure to cyanide. Level 2 Procedures are applicable site wide - Joint responsibility of Plant and Emergency Services and training includes plant area emergency procedures. Level 3 Procedures are applicable outside site boundary - Joint responsibility of Plant and Emergency Services. Sighted and confirmed Emergency Fire Team training matrix covering a comprehensive emergency service training program planned up until June 2022. The Clinic uses the Cyanide Exposure Medical Emergency Care Protocol as a basis for dealing with employees who arrive at the clinic. Training records are held throughout the working life of employee with full records covering trainer, courses attended, dates, performance and test results. The training matrix contains the electronic training records on training scheduled and completed for all cyanide plant employees. Training hard copy records are retained and are being recorded to the SAP electronic system, prior to being archived. Training records for the process plant is included in the plant training matrix.

Principle 5| EMERGENCY RESPONSE

Protect communities and the environment through the development of emergency response strategies and capabilities.

Standard of Practice 5.1

Prepare detailed emergency response plans for potential cyanide releases.

X **in full compliance with**

The operation is ☐ in substantial compliance with Standard of Practice 5.1

☐ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Emergency Response Plan to address potential releases of cyanide that may occur on site are well established and imbedded in the Plants. The Procedure for Level 1 Emergency, Level 2 Emergency, or Level 3 Emergency condition on the cyanide plant was sighted and details the actions to be undertaken in the event of an emergency on site to ensure there is a rapid and effective response to a potential cyanide exposure. Cyanide treatment protocol is in place at the Clinic. The clinic and external hospital are familiar with the protocol. Failure scenarios for catastrophic release of hydrogen cyanide gas is addressed by Plant Procedure - Level 1, 2 or 3 Emergency Condition on the Cyanide Plant. Procedure cross references to procedure Safe Shutting down of the Cyanide 1 Plant and Safe Shutting Down of the Cyanide 2 Plant. Gas releases leaving the boundary will be covered by the Works Emergency Action Plan. Releases of solid or liquid cyanide during packaging, storage, loading and unloading operations and releases during fire and explosions, liquid and gas releases during loading and dissolving within the plant boundaries will be covered by Plant Procedure - Level 1, 2 or 3 Emergency Condition on the Cyanide Plant.

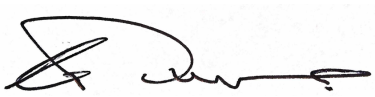
Procedure for Loading of CN Road Tankers and releases during loading and dissolution operations leaving the boundary will be covered by Works Emergency Action Plan. Pipe, valve and tank ruptures are addressed in Procedure for Level 1 Emergency, Level 2 Emergency, or Level 3 Emergency Condition on the Cyanide Plant and Works Emergency Action Plan. In the event of power outages and equipment failures procedure for Safe Shutdown of Cyanide 1 and 2 Plants respectively. Overtopping of ponds, tanks and waste treatment facilities is covered in Plant Procedure - Level 1, 2 or 3 Emergency Condition on the Cyanide Plant with Procedure – Sampling of Storm Water of the Cyanide Plants and Procedure detailing Actions to be followed in the event of a Chemical Spillage.

Specific response actions, as appropriate for the anticipated emergency situations, evacuating site personnel and potentially affected communities - Plant Procedure - Level 1, 2 or 3 Emergency Condition on the Cyanide Plant. As the site is a part of a larger chemicals complex, personnel will not be evacuated from the site. They will either be sent to self-contained emergency gathering rooms (e.g., gas releases) or for other occurrences, they may be sent to emergency assembly point outside the plant. The Works Emergency Action Plan is referenced to in the plant procedure for Level 2 and 3 emergencies that might require communities to stay indoors as opposed to evacuating. Area Emergency Action is referred to in the plant procedure. Procedure covering Emergency assembly point and gathering rooms are in place. Community evacuation is the responsibility of the South African Police. This is an off-site function and reference is made to the Sasolburg Emergency Response Plan for details.

Use of cyanide antidotes and first aid measures for cyanide exposure. The administration of antidotes is done under the sole control of a medical doctor or via a paramedic under a doctor's instruction. HCN exposure is covered by a specific Protocol: Cyanide Exposure Medical Emergency Care Protocol.

Control of releases at their source are addressed through Plant Procedure - Level 1, 2 or 3 Emergency Condition on the Cyanide Plant, Safe Shutting Down of the Cyanide 1 Plant and Safe Shutting Down of the Cyanide 2 Plant as well a procedure for Loading of CN Road Tankers.

Containment, assessment, mitigation and future prevention of releases are addressed in the following procedures - Plant Procedure Level 1, 2 or 3 Emergency Condition on the Cyanide Plant, Procedure detailing Actions to be followed in the event of a chemical spillage. Gas releases leaving the boundary will be covered by - Works Emergency Action Plan. Area Emergency Action Plan is referred to in the plant procedure. Procedure for Reporting, Investigating and Recording of Environmental Incidents. Area Emergency Action Plan and Management of Waste on Sasolburg Operations Sites which covers all waste including cyanide on and off site. Management of Water and Waste Water from the Sasol 1 and Midland Sites.

Sasol Cyanide Production Facilities # 1 and # 2		13 December 2021
Name of Facility	Signature of Lead Auditor	Date

Standard of Practice 5.2

Involve site personnel and stakeholders in the planning process.

X **in full compliance with**

The operation is ☐ in substantial compliance with Standard of Practice 5.2

☐ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The workforce and stakeholders, including potentially affected communities are involved in all emergency response documents for Sasol. All documents are quality controlled by a dedicated Quality Department who has a specific document control function. The emergency documentation is circulated to all for comment as a part of the document management process. All employees on site have access to electronic documents and are computer literate. Focussed communication groups and one-on-one discussions have been used in the past to communicate with stakeholders and gather information and detail perceptions. The face to face engagements in 2020 and 2021 have all been cancelled due to COVID and the plan was to restart only after January 2022 but with new COVID variants this may not be possible for some time? The reason for not doing virtual sessions with the surrounding communities is as a result of not having a community that is well informed about or proficient especially in the use of computers as well as access to suitable devices or stable connections to the internet. There has therefore been an increase on other forms advertisements for creating awareness.

Nine large billboards are position on major thoroughfares and at community centres throughout the town of Sasolburg covering Sasol Emergency Awareness topics. Newspaper advertisements are also used to communicate relevant safety topics. All communication to external parties is handled by Sasol Corporate Affairs.

External entities having emergency response roles are involved in emergency exercises, external agencies such as Fire Brigade, ambulances, site clinic, Vaal Park Hospital, South African Police Service and traffic authorities are involved and participate in post-mortem discussions as appropriate.

There is a Mutual Aid Agreement in place between Sasol, NATREF, Karbochem, Safripol, Omnia and the Metsimaholo (Sasolburg) Local Municipality. This agreement covers emergency services (Ambulance, Fire Services).

Standard of Practice 5.3

Designate appropriate personnel and commit necessary equipment and resources for emergency response.

X **in full compliance with**

The operation is ☐ in substantial compliance with Standard of Practice 5.3

☐ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Designated primary and alternate emergency response coordinators with explicit authority to commit the resources necessary to implement the Plan are in place. Shift Foreman (Area Emergency Controller - trained and appointed in writing) is initially the primary emergency response coordinator in the Level 1 plan. Shift Foreman is authorised to commit whatever resources are necessary to manage the emergency as per the Plant Procedure - Level 1, 2 or 3 Emergency Condition on the Cyanide Plant which identifies primary controller, assistant controller. Also has the authority to escalate the incident to Level 2 if necessary.

Emergency Response Teams list included in the "red files" (emergency response files located in the emergency gathering rooms and Foreman's office) and described in the Area Emergency Action Plan.

Training for emergency responders is as per the training matrix, central Sasol Emergency Services

team receives specialised training. All plant personnel receive emergency preparedness training every two years. Confirmed in the training matrix.
Call-out procedures and 24-hour contact information for the coordinators and response team members information located on standby and callout rosters - Confirmed in Bubbles electronic system. The list is updated weekly via e-mail. All Site Contact information maintained at Sasol Complex emergency centre. Information is updated monthly and distributed to all control rooms Works Emergency Control Centres (WECC). The weekly updated lists are distributed to the appropriate plants and a hard copy is available in the WECC. The WECC is the main contact with the plant in case of any plant emergencies. When an alarm is raised, the alarm sounds at the medical Clinic, the Fire Department Control Room and the process coordination control room - the protocol then kicks in. For site this is designated in Works Emergency Action Plan and for area this is designated in Area Emergency Action Plan.
The Area Emergency Action Plan describes the duties and responsibilities of the coordinators and team members.
A list of all emergency response equipment for Plant is included in the Fire Protection Survey and included in the Red Files in the emergency gathering room which is the plant control room. Procedure for the Inspection and Replenishment of Emergency Response Equipment is in place for the inspection, maintenance and testing of fire and life supporting equipment includes site emergency services response equipment. This procedure covers emergency equipment across all Sasol Sasolburg sites.
The cyanide facility is part of the much larger Sasol Midlands chemical complex which has its own emergency response and support facilities. Roles and responsibilities for outside responders are part of the Complex's Emergency Procedures - Works Emergency Action and there is a Procedure for Ambulance Service – Sasol Sasolburg sites. Leaflet to the communities are used currently to describe the communities role in case of Level 3 emergencies. Community members do not have specific roles in emergency procedures. (Sasolburg Emergency Action Plan is the plan managed by the Municipality who will coordinate outside responders). The revised Medical Emergency Response Plan (MERP) is still in draft since the last audit. Is in use but not yet under document control. During emergency exercises, external agencies such as Fire Brigade, ambulances, site clinic, Netcare 911 Hospital Vaal Park, South African Police Service and traffic authorities are involved and participate in post-mortem discussions as appropriate. Mutual aid agreement is in place with the local authority, Sasol, NATREF Karbochem, Omnia, Safripol.

Standard of Practice 5.4

Develop procedures for internal and external emergency notification and reporting.

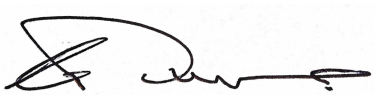
X **in full compliance with**

The operation is ☐ in substantial compliance with Standard of Practice 5.4

☐ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The Sasol Group Communication Procedure is adhered to and referenced in Works Emergency Action Plan. The Community Affairs member of the Works Emergency Team is responsible for managing external communication and information flow as per 'Group crisis communication guidelines'. There are only 4 named persons within the guidelines who are the primary contact persons. In the event of an emergency the on-site Clinic and the control room for Cyanide 1 and 2 Plant are directly in contact via telephone.
A written procedure for notifying ICMI of any significant cyanide incidents is in the form of a Sasol Operations Practise Note titled Reporting of Cyanide Incidents to ICMI. The Practise Note states that the accountability of reporting Cyanide incidents to ICMI will be the responsibility of Cyanide Operations and such reporting must be approved by the appointed Cyanide Champion. Significant cyanide incidents are to be reported within 24 hours of an occurrence. The incidents will be reported in line with our classification for moderate and significant incidents as prescribed in the Sasol Group Incident Management Procedure. This Practise Note has been approved and signed by as the Manager Risk, Incident & Assurance Management

Sasol Cyanide Production Facilities # 1 and # 2		13 December 2021
Name of Facility	Signature of Lead Auditor	Date

Standard of Practice 5.5

Incorporate remediation measures and monitoring elements into response plans and account for the additional hazards of using cyanide treatment chemicals.

X **in full compliance with**

The operation is ☐ in substantial compliance with Standard of Practice 5.5

☐ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Recovery or neutralization of solutions or solids and decontamination of soils or other contaminated media is included in Area Emergency Action Plan - Recovery, rehabilitation, scene security, community, environmental clean-up activities. Clean-up is provided by approved service providers. Service providers are subject to a successful SQAS-AFRICA (SQAS - Safety Quality Assessment for Sustainability) industry audit for spill response contractors.

Management and/or disposal of spill clean-up debris. Sasol Hazchem Trailers - 15 x Cyanide emergency trailers are provided free of charge and situated at various point along main cyanide transport routes throughout South Africa. Off Site procedure contained in documented Imperial Specialised Freight: Tanker Services Emergency procedures - Handle and contain various emergency situations (i.e., unplanned incidents), including medical emergencies that could have catastrophic consequences if not managed. This procedure deals with all operational areas, i.e., depot, in-transit and delivery.

Tanker Services are an ICMI accredited transporter.

Provision of an alternate drinking water supply - Area Emergency Action Plan will initiate the clean-up and any and all means required to normalise situation. This may include the possible requirement to bring in tankers of fresh drinking water.

Procedures includes a specific prohibition of the use of such as sodium hypochlorite, ferrous sulphate and hydrogen peroxide to treat cyanide releases into surface water or that could reasonably be expected to enter surface water.

Standard of Practice 5.6

Periodically evaluate response procedures and capabilities and revise them as needed.

X **in full compliance with**

The operation is ☐ in substantial compliance with Standard of Practice 5.6

☐ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The evaluation of the adequacy of the frequency of the Emergency Response Plan The documents are reviewed every 3 years as part of a document control system. Quality Control Department monitor and update documents on Sasol SharePoint drive.

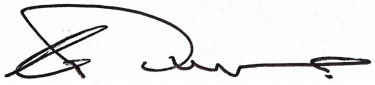
Are mock emergency drills conducted periodically and feedback (post-mortem) meeting held after emergency exercises and recommendations are made. The post-mortem report including recommendations are fed back to the Training Department. The learning practitioners indicated that there were no training procedures that needed to be revised a as result of drill findings

Level 1 - Monthly desktop emergency per shift (three shifts in total) scenarios are carried out. Sighted Credible Scenarios Schedule for desktop drills (up to June 2022).

Level 2 - Cyanide plant specific exercise was conducted on 28 May 2019 was sighted. Deviations List from exercise was sighted. These deviations where loaded onto IMS system for tracking and actions have all been closed. Sixteen deviations were raised in total.

Level 2 - The next Level 2 exercise is scheduled for May 2022

Level 3 - Last cyanide specific exercise was conducted on 10 October 2017: Emergency on Ammonia

Sasol Cyanide Production Facilities # 1 and # 2		13 December 2021
Name of Facility	Signature of Lead Auditor	Date

Storage tank rupturing – the details of this exercise were reviewed during the previous audit. Procedures may be amended as results of drill and events as appropriate where shortcomings are identified with corrective actions. No recent amendments have been required or identified

End of Report