




ECC-117-323-REP-01-A

ENVIRONMENTAL MANAGEMENT PLAN

EXPLORATION ACTIVITIES ON EPL 7729 AND EPL 7935 (ETJO GOLD PROJECT) FOR BASE AND RARE METALS, AND PRECIOUS METALS OTJIZONDJUPA REGION

PREPARED FOR CHEETAH MINERALS EXPLORATION (PTY) LTD

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Confidentiality

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LIST OF ACCRONYMS AND ABBREVIATIONS

ABBREVIATIONS	DESCRIPTION
ECC	Environmental Compliance Consultancy
EMA	Environmental Management Act
EMP	Environmental Management Plan
EPL	Exclusive Prospecting License
EIA	Environmental Impact Assessment
I&AP	Interested & Affected Party
MEFT	Ministry of Environment, Forestry and Tourism
MME	Ministry of Mines and Energy

1 INTRODUCTION

1.1 BACKGROUND TO THE PROPOSED PROJECT

Environmental Compliance Consultancy (ECC) has been engaged by the proponent, Cheetah Minerals Exploration (Pty) Ltd, to undertake an Environmental Impact Assessment (EIA) and an Environmental Management Plan (EMP) in terms of the Environmental Management Act, No. 7 of 2007 and its regulations for the proposed exploration activities on EPL 7729 and EPL 7935 in the Otjozondjupa Region. An application for an environmental clearance will be submitted to the relevant competent authorities, the Ministry of Mines and Energy (MME) and the Ministry of Environment, Forestry and Tourism (MEFT).

The exploration program will be most likely be operated in a Joint Venture with Cheetah Minerals Exploration (Pty) Ltd in the search for base and rare metals, and precious metals in the Otjozondjupa Region, northwest of Okahandja and east of Omaruru (Figure 1). The proposed exploration activities on EPL 7729 and EPL 7935 include geological mapping, soil and stream sediment geochemical sampling, ground geophysical surveys and drilling. If commercially viable concentrations can be defined by preliminary drilling, a next phase of advanced resource drilling operations is possible.

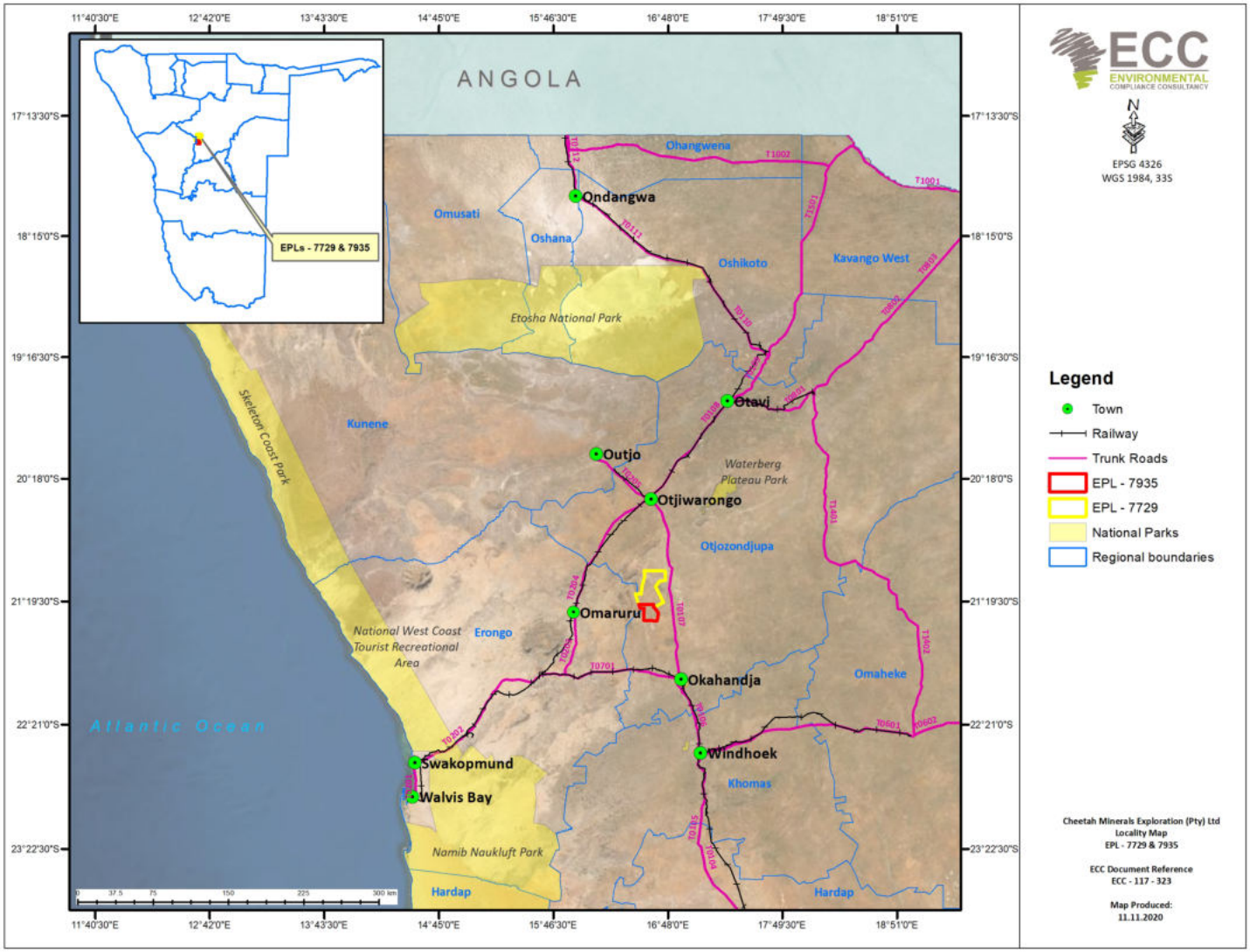

FIGURE 1 - LOCATION OF EPL 7729 AND EPL 7935 IN THE OTJOZONDJUPA REGION, NAMIBIA

1.2 Environmental Regulatory Requirements

The proposed project is considered as a listed activity as stipulated in the Environmental Management Act, No. 7 of 2007 and the Environmental Impact Assessment Regulation, No. 30 of 2012. As a listed activity an application for an environmental clearance certificate is required. An Environmental Scoping Report and EMP are required as part of the environmental clearance certificate application, as well as to support the decision-making process. This report presents the EMP and has been undertaken in accordance with the requirements of the Environmental Management Act, No. 7 of 2007 and its regulations.

1.3 Purpose and Scope of this Report

This EMP provides a logical framework, proposed mitigation measures and management strategies for the exploration activities associated with the proposed project. In this way the EMP attempts to ensure that potential environmental and social impacts are mitigated and minimised as far as practically possible and that statutory and other legal obligations are adhered to and fulfilled. Outlined in the EMP are the protocols, procedures and roles and responsibilities to ensure the management arrangements are effectively and appropriately implemented.

This EMP forms an appendix to the environmental scoping reports for EPL 7729 and EPL 7935 respectively and was based on the findings of the assessment; therefore, the environmental scoping report should be referred to for further information on the proposed project, assessment methodology, applicable legislation, and assessment findings.

This EMP is a live document and shall be reviewed at predetermined intervals, and / or updated when the scope of works alters, or when further data / information can be added. All personnel working on the project will be legally required to comply with the standards set out in this EMP.

The scope of this EMP includes all activities carried out during the exploration stage in search of base and rare metals, and precious metals on EPL 7729 and EPL 7539 in the Otjozondjupa Region.

1.4 Management of this EMP

The proponent, Cheetah Minerals Exploration (Pty) Ltd will hold the environmental clearance certificate for the proposed project and shall be responsible for the implementation and management of this EMP. Prior to the exploration activities, this EMP shall be reviewed, amended as required and approved for implementation. The implementation and management of this EMP and thus the monitoring of compliance shall be undertaken through daily duties and activities as well as monthly inspections.

This EMP shall be circulated to all contractors and made available on ECC's website.

1.5 Limitations, Uncertainties and Assumptions of this EMP

This EMP does not include measures for compliance with statutory occupational health and safety requirements. This will be provided in the safety management plan to be developed by the proponent.

Where there is any conflict between the provisions of this EMP and any contractor's obligations under their respective contracts, including statutory requirements (such as licences, project approval conditions, permits, standards, guidelines and relevant laws), the contract and statutory requirements are to take precedence.

The information contained in this EMP has been based on the project description as provided in the environmental scoping report. Where the design or exploration methods alter, this EMP may require updating and potential further assessment undertaken.

1.6 ENVIRONMENTAL CONSULTANCY

Environmental Compliance Consultancy, a Namibian consultancy registration number CC/2013/11401, has prepared this document on behalf of the proponent. ECC operates exclusively in the environmental, social, health and safety fields for clients across southern Africa in the public and private sector. The CVs of the authors of this report is contained in Appendix A. ECC is independent of the proponent and has no vested or financial interested in the proposed project expect for fair remuneration of professional services rendered.

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2 PROJECT MANAGEMENT PERSONNEL

The proponent shall provide a project team to oversee and undertake the preparation and exploration activities, which shall be composed of the proponent's personnel and contractors. A nominated role shall be identified to ensure the management and implementation of this EMP throughout the duration of the project, which shall be supported by the proponent.

2.1 ORGANISATIONAL STRUCTURE, ROLES AND RESPONSIBILITIES

The proponent shall be responsible for:

- Ensuring all members of the project team, including contractors, comply with the procedures set out in this EMP;
- Ensuring that all personnel are provided with sufficient training, supervision, and instruction to fulfil this requirement; and
- Ensuring that any persons' allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood.

Contractors shall be responsible for ensuring and demonstrating that all personnel employed by them are compliant with this EMP, and meet the responsibilities listed above. The key personnel and environmental responsibilities of each role through the project life are presented in Table 1.

TABLE 1 - ROLES AND RESPONSIBILITIES

ROLE	RESPONSIBILITIES & DUTIES
Proponent	– Overall responsibility for the implementation and management of this EMP; – Ensure the environmental policy is communicated to all personnel throughout the proposed project and ensure that employees, contractors and visitors understand and adhere to the EMP; – Responsible for providing the required resources (including financial and technical) to complete the required tasks; – Appoint supervisors such as an exploration (project) manager and a site manager; – Ensure that all employees, contractors and visitors are inducted on safety measures.
Exploration Manager	– Responsible for ensuring compliance with this EMP including overseeing all day to day activities during the duration of the project, including routine and non-routine maintenance works, as well as the decommissioning of the project; – Ensure adequate resources are made available for implementation of this EMP; – Responsible for the management, maintenance and revisions of this EMP; – Ensure all personnel are aware of the commitments made in this EMP and any other relevant regulatory requirements applicable to the project;

	– Ensure all employees and contractors participate in a site induction process prior to commencing work on the project; – Maintain the community issues and concern register, and keep records of complaints; – Ensure that best environmental practice is undertaken throughout the duration of the project; and – Report any non-compliance or accidents to the regulatory authority.
Site Manager (or nominated supervisor)	– Ensure that all employees, contractors and visitors to the site are conversant with the requirements of this EMP, relevant to their roles on site and adhere to this EMP at all times; – Provide environmental awareness / management training and site inductions for all employees, contractors and visitors; – Monitor daily operations and ensure adherence by personnel to the EMP; – Receive, respond to and record complaints; and – Report any non-compliance or accidents to the explorations (project) manager.
Employees (and contractors and visitors where applicable)	– Responsible for being compliant with this EMP throughout the project; – Adhere to this EMP at all times; – Ensure attendance of site inductions; – Ensure appropriate briefings for certain activities have been provided and are fully understood; and – Report any operations and conditions that deviate from the EMP or any non-compliant issues or accidents to the site manager and exploration manager.

2.2 CONTRACTORS

Any contractors hired during the exploration activities or for any accessory works for the project, or contractors appointed for maintenance activities, shall be compliant with this EMP, and shall be responsible for the following:

- Undertaking activities in accordance with this EMP as well as relevant policies, procedures, management plans, statutory requirements, and contract requirements;
- Implementing appropriate environmental management measures;
- Reporting of environmental issues, including actual or potential environmental incidents and hazards, to the Exploration Manager;
- Ensuring appropriate corrective or remedial action is taken to address all environmental hazards and incidents reported; and
- Adhere to the Safety Management Plan developed by the proponent.

2.3 EMPLOYMENT

The proponent (and all contractors) shall comply with the requirements of the Regulations for Labour, Health and Safety and any amendments to these regulations. The following shall be complied with:

- In liaison with local government, community, stakeholders and relevant authorities the proponent shall ensure that local people have access to information about job opportunities and are considered first for exploration / maintenance contract employment positions;
- The number of job opportunities shall be made known together with the associated skills and qualifications;
- The maximum length of time the job is likely to last for shall be clearly indicated;
- Foreign workers with no proof of permanent legal residence shall not be hired; and
- Every effort shall be made to recruit from the pool of unemployed workers living in the local area.

3 COMMUNICATION AND TRAINING

In order to ensure potential risks and impacts are minimised, it is vital that personnel are appropriately informed and trained on operational procedures that include the above mitigation measures. It is also important that regular communications are maintained with all the stakeholders and made aware of potential impacts and how to minimise or avoid them. This section sets out the framework for communication and training in relation to the EMP.

3.1 COMMUNICATIONS

During exploration, the exploration manager and / or site manager shall communicate any environmental issues to the project team through the following means (as and when required):

- Site induction;
- Audits and site inspections;
- Toolbox talks, including instruction on incident response procedures; and
- Briefings on key project-specific environmental issues.

This EMP shall be distributed to the exploration team including any contractors and personnel working on the exploration site to ensure that the environmental requirements are adequately communicated. Key activities and environmentally sensitive operations shall be briefed to workers and contractors.

During the exploration activities, communications between the management team shall include discussing any complaints received and actions to resolve them, any inspections, audits or non-conformance with this EMP, and any objectives or target achievements.

3.2 ENVIRONMENTAL EMERGENCY AND RESPONSE

Table 2 contains the necessary contact numbers in case of an emergency. All personnel will be made aware of these numbers.

TABLE 2 - EMERGENCY CONTACT DETAILS

TOWN	AMBULANCE	POLICE	FIRE BRIGADE
Otjiwarongo	+ 264 67 30 3734	+264 67 10 111	+264 67 30 4444
Okahandja	+264 62 50 3030	+264 62 10 111	+264 62 50 1051
Omaruru	+264 64 57 0037	+264 64 10 111	+264 64 57 0028

3.3 COMPLAINTS HANDLING AND RECORDING

Any complaints received verbally by any personnel on the project site shall be recorded by the site manager or the receiver, including the name and contact details of the complainant, date and time of the complaint, and the nature of the complaint. The information shall be given to the exploration manager who is overall responsible for the management of complaints and will

provide a written response to the complainant. The site manager shall inform the exploration manager of issues, concerns or complaints. It is the duty of both the site manager and exploration manager to maintain a complaints register that details the name of the complainant, date and time of the complaint and action taken to resolve the issues.

The workforce shall be informed about the complaints register, its location and the person responsible, in order to refer residents or the general public who wish to lodge a complaint. The complainant shall be informed in writing of the results of the investigation and action to be taken to rectify or address the matter(s). Where no action is taken, the reasons why are to be recorded in the register.

The complaints register shall be kept for the duration of the project and will be available for government or public review upon request.

3.4 TRAINING AND AWARENESS

All personnel working on the project shall be competent to perform tasks that have the potential to cause an environmental impact. Competence is defined in terms of appropriate education, training, and experience.

3.4.1 SITE INDUCTION

All personnel involved in the project shall be inducted to the site with a specific environment and social awareness training component. The environment and social awareness training shall ensure that personnel is familiar with the principles of this EMP, the environment and social aspects and impacts associated with their activities, the procedures in place to control these impacts and the consequences of departure from these procedures.

The exploration manager shall ensure a register of completed training is maintained.

The site induction should include, but not limited to the following:

- A general site-specific induction that outlines:
    - What is meant by “environment” and “social”
    - Why the environment needs to be protected and conserved
    - How exploration activities can impact on the environment
    - What can be done to mitigate against such impacts
- The inductee’s role and responsibilities with respect to implementing the EMP;
- The sites environmental rules;
- Details of how to deal with, and who to contact if environmental problems should they occur;
- Basic vegetation clearing principals and species ID sheets;
- Noise control measures for drilling in proximity to residents;
- Focal themes such as compliance, reporting of accidents and incidents, good housekeeping and standard procedures for waste management;

- The potential consequences of non-compliance with this EMP and relevant statutory requirements; and
- The role of responsible people for the project.

4 REPORTING, COMPLIANCE AND ENFORCEMENT

4.1 Environmental Inspections and Compliance Monitoring

4.1.1 Daily compliance monitoring

A copy of this EMP shall be on site throughout the project and shall be available upon request. It is the responsibility of the exploration manager to ensure this EMP is complied with through their daily roles. Daily, weekly, and monthly inspections will be undertaken. Any environmental problems or risks identified shall be reported to the exploration manager and actioned as soon as is reasonably practicable.

4.1.2 Monthly compliance monitoring

Monthly inspections shall be undertaken by the exploration manager to check that the standards and procedures set out in this EMP are being complied with and pollution control measures are in place and working correctly. Any non-conformance shall be recorded, including the following details: a brief description of non-conformance, the reason for the non-conformance, the responsible party, the result (consequence), and the corrective action taken and any necessary follow up measures required.

4.1.3 Reporting

There shall be a requirement to ensure that any incident or non-compliance, including any environmental issue, failure of equipment or accident, is reported to the exploration manager.

4.2 Environmental Permits

Whilst the Water Resources Management Act, No. 11 of 2013 is not enforced, it is best practice to adhere to its stipulations while ensuring compliance with the Water Act, No. 54 of 1956, which is maintained still.

Should water not be sourced directly from a private borehole, a licence to abstract water is required in terms of the Water Act, No. 54 of 1956 and shall operate in accordance with any conditions of the licence.

Since the proponent has taken it upon themselves to discharge effluent via another means the proponent must ensure that all documentation, permits and measures are in place before discharge occurs, including obtaining the relevant effluent discharge permit in terms of the Water Act, No. 54 of 1956 to be applied for at the Ministry of Agriculture, Water and Land Reform.

In order to obtain an effluent wastewater permit, the proponent should have the following information and complete the application form contained in Appendix A:

- Specification of the treatment system (type of technology)
- Description of major activities resulting in effluent generation
- List of contaminants (analysis of effluent samples)
- Effluent quality

- Points of discharge
- Show the present average quantities of incoming water, recycled water, final outflow, and
- Where final effluent discharged.

Some vegetation will be cleared on the EPL to allow exploration activities to commence. It is unlikely that an area greater than 15ha will be cleared, therefore a permit under the Forest Act, No. 12 of 2001 as amended by the Forest Amendment Act, No. 13 of 2005 and its regulations of 2015 is not required.

4.3 NON-COMPLIANCE

4.3.1 NON-COMPLIANCE EVENT

Where it has been identified that works are not compliant with this EMP, the exploration manager shall employ corrective actions so that the works return to being compliant as soon as possible. In instances where the requirements of the EMP are not upheld, a non-conformance and corrective action notice shall be produced. The notice shall be generated during the inspections and the exploration manager shall be responsible for ensuring a corrective action plan is established and implemented to address the identified shortcoming.

A non-compliance event / situation, for example, is considered if:

- There is evidence of a contravention of this EMP and associated indicators or objectives;
- The exploration manager and / or contractor have failed to comply with corrective or other instructions issued by the exploration manager or qualified authority; or
- The exploration manager and / or contractor fail to respond to complaints from the public.

Activities shall be stopped in the event of a non-compliance until corrective action(s) has been completed.

4.4 INCIDENT REPORTING

The exploration manager must ensure that an accident and incident (including minor or near-miss) reporting system is maintained so that all applicable statutory requirements are covered. For any serious incident involving a fatality, or permanent disability, the incident scene must be left untouched until witnessed by a representative of the police. This requirement does not preclude immediate first aid being administered and the location being made safe.

The exploration manager must investigate the cause of all work accidents and significant incidents and must provide the results of the investigation and recommendations on how to prevent a recurrence of such incidents. A formal root-cause investigation process should be followed.

4.4.1 DISCIPLINARY ACTION

This EMP is a legally binding document and non-compliance with it shall result in disciplinary action being taken against the perpetrator(s). Such action may take the form of (but is not limited to):

- Fines / penalties;
- Legal action;
- Monetary penalties imposed by the proponent on the contractor;
- Withdrawal of licence(s); and
- Suspension of work.

The disciplinary action shall be determined according to the nature and extent of the transgression / non-compliance, and penalties are to be weighed against the severity of the incident.

5 ENVIRONMENTAL AND SOCIAL MANAGEMENT

5.1 ENVIRONMENTAL PERFORMANCE MEASUREMENT

This chapter provides a register of environmental risks and issues, which identifies mitigation and monitoring measures, as well as roles responsible. This register will be subject to regular review by the exploration manager and updated when necessary.

The exploration manager and / or site manager (if applicable) will use this register to undertake monthly inspections (see next section) to ensure the project is compliant with this EMP.

5.2 OBJECTIVES AND TARGETS

Environmental objectives for the project are as follows:

- Zero pollution incidents;
- Minimal vegetation clearing and earthworks;
- Protect local flora and fauna;
- Minimise the generation of waste; and
- Minimal interruption to farm activities.

5.3 REGISTER OF ENVIRONMENTAL RISKS AND ISSUES

An environmental review of the proposed project has been completed to identify all the commitments and agreements made within the environmental scoping report. From this, a schedule of environmental commitments and risks has been produced (Table 3), which details deliverables including measures identified for the prevention of pollution or damage to the environment during exploration.

Table 3 provides a register of environmental risks and issues, which identifies mitigation and monitoring measures, as well as the responsible person. This register will be subject to regular review by the exploration manager and updated when necessary. The exploration manager will use this register to undertake monthly inspections to ensure the project is compliant with this EMP.

TABLE 3 - ENVIRONMENTAL RISKS AND ISSUES, AND MITIGATION AND MONITORING MEASURES

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
Access and site preparation	– Miscommunication with the farm owners, – Disruption of farm operations (leaving gates open, loss of farming area, interference at waterpoints) – Potential conflict with farm owners and neighbours (suspicious movement, poaching, stock theft, collecting of organisms, veld fires, etc.)	– Ensure documented permission to enter farms is enforced, – Farmers should have access to all farm areas at all times, – Existing water points and feeding area need to be left, unaffected, – Use existing roads for access to avoid new tracks and cut lines, – Restrict movements of people to areas of activity only and restrict activities and movements to daytime hours, – Restrict the making of fires to designated areas, – Compliance with all applicable laws and agreements.	Daily	Exploration Manager and / or Site Manager (or nominated site supervisor)
	Potential damage to heritage (cultural, historical, archaeological or paleontological) sites	– Implement a Chance Find Procedure, – Raise awareness about possible heritage finds, – Report all finds that could be of heritage importance, – In case archaeological / paleontological remains to be uncovered, cease activities and the exploration manager has to assess and demarcate the area, – Exploration manager to visit the site and determine whether work can proceed without damage to findings, mark exclusions boundary and inform ECC with GPS position, – If needed, further investigation have to be requested for a professional assessment and the	Monthly	

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		necessary protocols of the Chance Find Procedure have to be followed, - Specialist will evaluate the significance of the site and identify appropriate action, for example, record and remove; relocate or leave premises (depending on the nature and value of the remains), - Inform the police if the remains are human, - Obtain appropriate clearance or approval from the competent authority, if required, and recover and remove the remains to the National Museum or National Forensic Laboratory as directed.		
General exploration activities	- Potential grievances and complaints, - Social discomfort and anxiety	- Develop and implement an environmental and social operations manual or procedures to work on private farms and implement monitoring programmes thereafter, - Maintain continuous communication with interested and affected parties (I&APs) to identify concerns and mitigation measures, - Compliance with all applicable laws and agreements, - Training and raise awareness to sensitize employees about contentious issues such as stock theft and poaching, as well as veld fires, - Ensure appropriate supervision of all activities, - Accidents and incidents need to be reported to exploration manager and recorded in incident register.	Weekly, monthly	

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
	Residing and nesting organisms can be disturbed, injured or killed by movement of vehicles and equipment	– Restrict movements to areas of activities only, – Use existing tracks and routes only, – Identify rare, endangered, threatened and protected species in advance (e.g. rhinoceros, pangolin and cheetah), – Route new tracks around protected species and sensitive areas, – Restrict movements to daytime hours, – Training and raise awareness to sensitize employees and notify them on avoiding some areas, – No driving off designated access routes i.e. into the bush / off-road, – No animals or birds may be collected, caught, consumed or removed from site.	Weekly	– Exploration Manager, – Site Manager (or nominated site supervisor), – Employees, contractors
	– Residing and nesting organisms can be disturbed as a result of ambient noise from operations and movements of vehicles and equipment – Conflict with farmers and neighbours about ambient noise	– Restrict excessive noise to areas of activities only, – Restrict excessive noise to daytime hours (7 am to 5 pm weekdays and 7 am until 1 pm on Saturday), – No activities between dusk and dawn, – Drill equipment shall be suitably positioned to ensure that noisy equipment is away from receptors, – Residents shall be provided at least two weeks' notice of drilling operations within 1 km of their property, – All equipment to be shut down or throttled back between periods of use, – Respect civic aviation regulations about the use	Daily	

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		of a drone		
	– Physical disturbances (nuisance dust, noise, fumes and emissions, vehicular movements) – Loss of amenity and Sense of Place – Safety and public health impacts	– Use existing tracks where possible, – No driving off designated access routes into the bush / off-road, – Position heavy equipment in such a way that it is out of sight from human receptors, – Restrict speed of vehicles (<30 km/h), – Restrict excessive noise to daytime hours and areas of activity only, – All equipment to be shut down or throttled back between periods of use, – Barriers or fences shall be used if drilling occurs in, locations that may affect residents or livestock, – Residents need to be informed at least two weeks in advance that drilling operations are within 1km of their property, – Maintain good housekeeping, – Apply dust suppression where possible, – Maintain continual communication with I&APs to identify concerns and mitigation measures – Vehicles and machinery are to be regularly serviced according to the manufacturers' specifications and kept in good working order so as to minimise exhaust emissions.	– Complaints register – Daily observations – Weekly inspections	
	Dust and emissions	– All vehicles and machinery / equipment to be shut down or throttled back between periods of use, – Use existing access roads and tracks where possible,	Daily	

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		- Apply dust suppression where possible, - Restrict speed of vehicles (<30 km/h), - Specific activities that may generate dust and impact on residents shall be avoided during high wind events.		
	- Loss of soil quality due to mixing of earth matter, trampling, compaction and pollution, - Enhanced soil erosion	- Where possible, plan access routes, drill pads and camps outside of existing drainage lines, - Where necessary, install diversions to curb possible erosion, - Restore drainage lines when disturbed, - Where necessary, topsoil should be stockpiled separately, and re-spread during rehabilitation, - Limit the possibility of compaction and creating of a hard subsurface, - Limit the possibility of trampling, - During drilling oil absorbent matting should be placed under and around the rig, - Equipment must be in a good condition to ensure that accidental oil spills do not occur and contaminate soil, - In the event of spills and leaks, polluted soils must be collected and disposed of at an approved site, - Limit the possibility of mixing mineral waste with topsoil.	Weekly	
	Groundwater contamination	- Good housekeeping, - Ensure drill pads and spill kits are in place, - Consider alternative sites when the water table is too high, - Waste water shall be contained,	Weekly	

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		– Where possible, water from existing water sources shall be used.		
Vegetation clearance for access routes, drill pads and temporary contractor camps	– Loss of plant species – Loss of habitat – Create landscape scars – Enhance erosion – Loss of Sense of Place	– Use existing roads for access to avoid new tracks and cut lines, – Minimise clearance areas through proper planning of the exploration activities, – Route new tracks around established and protected trees, and clumps of vegetation, – Identify rare, endangered, threatened and protected species, – During toolbox talks and induction, highlight to workers so that the removal of significant plants are avoided, – Where possible rescue and relocate plants of significance, – Promote revegetation of cleared areas upon completion of exploration activities.	Daily	– Employees, contractors – Site Manager (or nominated site supervisor)
	Alien plants and weeds can accidentally be introduced	– All project equipment arriving on site from an area outside of the project or coming from an area of known weed infestations (not present on the project site) should have an internal weed and seed inspection completed prior to equipment being used, – Ensure contractors receive induction on spread of alien weed, – Ensure the potential introduction and spread of alien plants is prevented,	Monthly	Site Manager (or nominated site supervisor)

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		– Ensure the correct removal of alien invasive vegetation and prevent the establishment and spread of alien invasive plants, – Eradicate weeds and alien species as soon as they appear, – Make workers aware about alien species and weeds.		
Fuel handling and storage, maintenance on equipment, machinery and vehicles **Inadequate control or accidental releases of hazardous substances on site**	– Soil contamination – Water contamination – Enhance accidental veld fires	**Storage** – Label chemicals appropriately, – Chemicals with different hazard symbols should not be stored together - clear guidance on the compatibility of different chemicals can be obtained from the Materials Safety Data Sheets (MSDS) which should be readily available, – Store chemicals in a dedicated, enclosed, and secure facility with a roof and paved / concrete floor, – Consider feasibility of substitution of hazardous chemicals with less hazardous alternatives, – Storage and handling of fuels and chemicals shall be in compliance with relevant legislation and regulations, – Fuels, lubricants, and chemicals are to be stored within appropriately sized, impermeable secondary containment, bunds or trays with a	– Daily observations – Weekly inspections	– Employees, contractors – Site Manager (or nominated site supervisor)

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		capacity not less than 110% of the total volume of products stored. **Fire risk** – Restrict movements of people to areas of activities only – Train people and raise awareness about veld fires and firefighting – No open fires are allowed outside of designated areas, – Ensure proper cooking facilities at fly camps, – No cigarette butts are allowed to be discarded, but contained and disposed of at an appropriate facility, – Proper fire hazard identification signage to be placed in areas that store flammable material (i.e. hydrocarbons and gas bottles), – Control and reduce the potential risk of fire by segregating and safe storage of materials, – Avoid potential sources of ignition by prohibiting smoking in and around facilities, and – Firefighting equipment and fire breaks should always be at designated areas and should be maintained regularly. **Spills** – Spill kits with the following items as a minimum		

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		should be made available on site ○ Absorbent materials, ○ Shovels, ○ Heavy-duty plastic bags, ○ Protective clothing (e.g. gloves and overalls), – Major servicing of equipment shall be undertaken offsite or in appropriately equipped workshops, – For small repairs and required maintenance activities all reasonable precautions to avoid oil and fuel spills must be taken (e.g. spill trays, impervious sheets), – Provision of adequate and frequent training on spill management, spill response and refueling must be provided to all onsite staff, – No refueling is to take place within 50 meters of boreholes, surface water or streams. – Vehicles and machinery are to be regularly serviced to minimise oil and fuel leaks, – All major petroleum product spills (spill of more than 200 litres per spill) should be reported to the Ministry of Mines and Energy (MME) on Form PP/11 titled “Reporting of major petroleum product spill’, attached as Appendix B.		

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		The following points therefore apply to all areas on the site: - Assess the situation for potential hazards, - Do not come into contact with the spilled substance until it has been characterised and necessary personal protective equipment (PPE) is provided, - Isolate the area as required. **The following measures are to be implemented in response to a spill:** - Spills are to be stopped at source as soon as possible (e.g. close valve or upright drum), - Spilt material is to be contained to the smallest area possible using a combination of absorbent material, earthen bunds or other containment methods, - Spilt material is to be recovered as soon as possible using appropriate equipment. In most cases, it will be necessary to excavate the underlying soils until clean soils are encountered, - All contaminated materials recovered subsequent to a spill, including soils, absorbent pads and sawdust, are to be disposed to appropriately licensed facilities, - A written Incident report must be submitted to		

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		the general manager.		
Generation of waste	– Soil contamination – Water contamination – Nuisance (visual impacts, litter) – Ecological risks	– Good housekeeping, – Training and awareness through toolbox talks and induction, – Implement a Standard Operational Procedure on waste management, from cradle to grave for all kinds of waste possible on-site (e.g. hydrocarbons, domestic, waste water), – Implement a culture of correct waste collection, waste segregation and waste disposal, complimentary to the waste hierarchy – avoid, re-use, recycle, – Avoid hazardous waste on site, – Wastewater discharges will be contained – no disposal of waste water.	Daily and weekly	– Employees, contractors – Site Manager (or nominated site supervisor)
Water use	– Soil contamination – Ground- and surface water contamination – Nuisance (visual and odour)	– Minimise the consumption of water throughout the operations of the project, – Visual monitoring and photographic record of any surface and / or groundwater intersected, – Recycle wastewater where possible, – Install devices to prevent spills and overfills, e.g. shutoff devices for large volume tanks (e.g. > than 2000 L),	Daily inspection of operations	– Exploration Manager, – Site Manager (or nominated supervisor)

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		– Install an impermeable hardstand in areas of high-risk contamination to prevent ground infiltration by pollutants, – Segregation of wastewater (domestic and industrial effluent), – Wastewater and effluent should be contained, as far as possible – During operations, monitoring of wastewater discharges should be conducted on a regular basis (quarterly)		
Heritage	Disruption of heritage sites	In case of discovering or unearthing heritage sites, particularly paleontological or archaeological finds, the following measures (Chance Find Procedure) shall be applied: – Work to cease, area to be demarcated with appropriate tape by the site supervisor, and the Site Manager to be informed – Site Manager to visit the site and determine whether work can proceed without damage to findings, mark exclusions boundary and inform ECC with the GPS position if possible – If work cannot proceed without damage to findings, Site Manager to inform the Exploration Manager / Proponent who will get in touch with ECC and a specialist who will provide advice – Specialist to evaluate the significance of the site / find and identify appropriate action, for example, record and remove; relocate or leave	– Daily inspection	– Exploration Manager – Site Manager (or nominated supervisor)

ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	RESPONSIBILITY
		in situ (depending on the nature and value of the remains) – Inform the police if the remains are human, and – Obtain appropriate clearance or approval from the competent authority, if required, and recover and remove the remains to the National Museum or National Forensic Laboratory as direct.		
Job creation, skills development and business opportunities	Beneficial socio-economic impacts on a local and regional scale	– Maximise local employment and local business opportunities – Enhance the use of local labour and local skills as far as reasonably possible – Ensure that goods and services are sourced from the local and regional economy as far as reasonably possible.	Monthly	Exploration Manager

6 IMPLEMENTATION OF THE EMP

Exploration work will be carried out in compliance with the relevant requirements of the Minerals (Prospecting and Mining) Act, No. 33 of 1992. No significant impacts are anticipated for the activities that have been identified and management and mitigation measures are in place for potential risks.

This EMP:

A. Has been prepared pursuant to a contract with the proponent;

B. Has been prepared on the basis of information provided to ECC up to July 2020;

C. Is for the sole use of the proponent, for the sole purpose of an EMP;

D. Must not be used (1) by any person other than the proponent or (2) for a purpose other than an EMP; and

E. Must not be copied without the prior written permission of ECC.

ECC has prepared the EMP on the basis of information provided by the proponent, specialist reports and the environmental scoping report.

APPENDIX A: APPLICATION FOR A WASTEWATER DISCHARGE LICENCE

DEPARTMENT OF WATER AFFAIRS & FORESTRY

FAX:	(061) 208 7160	PRIVATE BAG 13184
TEL:	(061) 208 7111	WINDHOEK
REFERENCE NO:		NAMIBIA

APPLICATION FOR A WASTEWATER DISCHARGE LICENCE, IN TERMS OF PART XIV OF THE WATER RESOURCES MANAGEMENT ACT, 2004

(Act No. 24 of 2004 - as published in the Government Gazette of the Republic of Namibia, No. 3357, of 23 December 2004, Government Notice No. 284)

A. GENERAL INSTRUCTIONS

1. Applications must be submitted in duplicate to:

   The Permanent Secretary
   Attn.: Law Administration
   Ministry of Agriculture, Water and Forestry
   Private Bag 13184
   WINDHOEK

2. Application Fee (to accompany this document): N$_____

3. The various sections have to be completed as follows:
   - **Section B & C** - All applicants
   - **Section D** - Complete only the part relevant to technology employed in your works.
   - **Section E** - All applicants (compulsory!)

4. Only the relevant Sections that have been filled in need to be submitted with this application.

5. A separate application needs to be filled in for each different plant/works.

NAME OF TREATMENT PLANT/WORKS: _____

PLACE: _____ **GPS Coordinates:** _____
(e.g. town, settlement)

1

B. GENERAL INFORMATION

1. Name of applicant: _____

2. Address - Contact Person: _____
   - Postal: _____
   - Physical: _____
   - Tel No.: _____
   - Fax No.: _____
   - E-mail: _____

3. Region in which plant is situated: _____

4. Constituency in which plant falls: _____

5. Type of establishment:
   (e.g. school, town, industry) _____

6. Source of water supply:
   (e.g. borehole, river, sea) _____

7. Total water consumption: _____ m^3/day ADWF*

   (*ADWF = Average Dry Weather Flow) _____ m^3/day ADWF*

   - Consumption based on the average usage over a 12-month period. _____ m^3/day ADWF*
   - List different sources separately _____ m^3/day ADWF*

8. Application:

   - Prepared by: Name : _____ Position: _____

     (e.g. Consultant) Signature: _____ Date: _____

   - Responsible Executive: Name : _____ Position: _____

     Signature: _____ Date: _____

2

C. TECHNICAL DETAILS - GENERAL

Answers to the following information must be contained in this application either from the questionnaire or as an attachment thereto (see also details in Appendix A):

NAME OF TREATMENT PLANT/WORKS: _____

1. Type of effluent (please also refer to Section D for classifications): _____

2. Site of works:

2.1 Submit a site plan indicating the exact location (or intended location) of the works. This plan should indicate (as a minimum):

2.1.1 General location of the works with regards to settlements, main roads, boreholes, rivers etc.

2.1.2 Layout plan of property showing all existing and proposed water pipes and effluent and drainage lines in distinctive colours.

2.1.3 Topographical plan/area photograph/contour plans showing the property and effluent treatment plant in relation to residential areas, rivers, pans, dams, lakes and boreholes.

2.1.4 Contour plans indicating the exact location of the effluent treatment works and point of discharge of final effluent in relation to watercourses that drain the area.

2.1.5 Give the following information:

2.1.5.1 Distance to nearest inhabitants: _____m

2.1.5.2 Distance to nearest water abstraction point (e.g. river, borehole): _____m

2.1.5.3 Distance to nearest watercourse (e.g. dry river) and specify: _____m

2.1.5.4 Wind direction (main/normal) _____

2.2 Submit overall details of works:

2.2.1 Type of effluent treatment system and a brief description of its method of operation. (If domestic effluents are dealt with by the local authority please enclose a letter from the authority confirming this agreement).

2.2.2 Flow diagram/mass balances to show the present average quantities of incoming water, recycled water, final outflow, seepage and evaporation losses (all in m^3/day).

2.2.3 Layout orientation drawing indicating all major treatment units and fence around works.

2.2.4 Complete flow diagram and key design parameters to include:

2.2.4.1 Dimensions and design capacities of each unit process;

2.2.4.2 Process Flow Diagram(s) and major instrumentation employed, e.g. water meters;

2.2.4.3 Loadings on the system (e.g. hydraulic, COD, BOD, nitrogen, phosphate);

2.2.5 Indicate allowances that have been made for future expansion and increased loads (if any).

2.2.6 Methods of sludge disposal or recirculation.

2.2.7 Disinfection of the final effluent (indicate dosing type, method, retention period and optimum disinfectant level in final effluent).

3. Monitoring boreholes for monitoring groundwater pollution over time must be available within 500 m of the point of final effluent discharge.

4. Please note: Additional information is required for new treatment plants (e.g. an environmental impact assessment) - details can be obtained from the Department of Water Affairs and Forestry.

5. All relevant information must be included with this application. **It is a criminal offence to deliberately withhold vital information relevant to this application.** Where applicants are found to be in contravention with this requirement, they may/will be prosecuted.

3

D. TECHNICAL DETAILS - SPECIFIC

Applicants should only complete sections relevant to their specific effluent (please tick relevant box):

☐	D-1: Domestic Effluent - Includes wastewater collected in towns (excluding industrial effluent!), villages, schools, lodges, administration buildings.
☐	D-2: Industrial Effluent - Includes wastewater generated by any industry, factory, etc.
☐	D-3: Mining Effluent - Includes wastewater accumulated or collected due to mining operations (e.g. Acid mine wastewater)
☐	D-4: Combination/mix of various effluents (list major effluent streams on page 11)

Final Effluent Reuse

The pressure on Namibia's existing fresh-water supplies can, to a great extent, be eased by the sensible reuse of effluents for a variety of purposes including dust control, agriculture and industrial processes. Therefore, reuse of effluent after suitable treatment is encouraged.

The allowable reuse of an effluent is dependent upon its quality as well as many local circumstances and hence each application in this category needs careful and individual scrutiny, which should be undertaken by a specialist in this field and must be supported by an environmental impact assessment study.

A separate licence for effluent reuse is required and more details in this regards can be obtained from the Department of Water Affairs and Forestry.

D-2. INDUSTRIAL EFFLUENTS

Plant Name: .....

2.1	Describe industry and major activities resulting in effluent generation		
2.2	Capacity / Flowrates :		
	Design - Average daily flow		m^3/d
	- Peak hourly flow		m^3/h
	Actual (if in operation) - Average daily flow		m^3/d
	- Peak hourly flow		m^3/h
	If ponds are employed, state total surface area		m^2
2.3	List only major contaminants (also attach full analysis of typical effluent sample)		
2.4	Type of treatment employed (give short overview of process):		
2.5	List major treatment chemicals* employed in the unit process(es):		
2.6	Final effluent quality after treatment (put envisaged final quality for a new plant):		
2.7	Sludge generation:		
	- Volume generated		m^3/d
	- Mass		kg/d (dry solid)
	- Method of disposal		
	- Place of disposal		
	- Major constituents		
	- If sludge ponds, state frequency of cleaning		
2.8	Do you employ cleaner production principles (CPP)? Yes/No If "yes", elaborate:		
2.9	Is the following documentation included (give reason if not)? ▪ Water (and waste) management plan: Yes/No ▪ Decommissioning plan: Yes/No		

* For the chemicals employed, proper mass balances should be included that show chemical usage, movement and discharge within the factory/process(es). All safety aspects related to handling, storage and disposal of chemicals on site must be followed at all times.

D-4. COMBINATION OF VARIOUS EFFLUENTS

Plant Name: .....

4.1	Describe major activities resulting in effluent generation (e.g. type of industry):				
4.2	Capacity / Flowrates of different streams (major only)	1	2	3	
	Type (e.g. domestic, industrial, mining, others)				
	Design - Average daily flow				m^3/d
	- Peak hourly flow				m^3/h
	Actual (if in operation) - Average daily flow				m^3/d
	- Peak hourly flow				m^3/h
4.3	List only major contaminants (also attach full analysis of typical effluent sample)				
4.4	Type of treatment employed (give short overview of process)				
4.5	List major treatment chemicals employed in the unit process(es):				
4.6	Final effluent quality after treatment (put envisaged final quality for a new plant)				
4.7	Sludge generation:				
	- Volume generated				m^3/d
	- Mass				kg/d (dry solid)
	- Method of disposal				
	- Place of disposal				
	- Major constituents				
	- If sludge ponds, state frequency of cleaning				

E. FINAL EFFLUENT DISPOSAL

1.4.1	Where is the final effluent discharged to? (E.g. French drain, pumped out by Local Authority, dry river course, perennial river, etc.)	
1.4.2	IF soakaway, state: - Type of soil - Suitability/porosity of soil - Size of soakaway area - Include topography and plan of soakaway area	
1.4.3	Is there any post-treatment applied? (e.g. disinfection, filtration)	
1.4.4	Is the final effluent re-used? (Yes/No)	
	If "Yes", complete:	
	- Do you have a reuse licence?	
	- Amount of water that will be re-used:	m^3/d
	- For what application:	
	- Type of irrigation used (if applicable):	
	- What crops are grown:	
	- Area of land that will be irrigated:	ha
1.4.5	Name (if any) downstream users (downstream of discharge point).	
1.4.6	Past records of complaints or objections by people living close to works:	

Reuse:
A reuse licence is required – details can be obtained from the Department of Water Affairs and Forestry.

Irrigation:

The crops allowed to be irrigated are dependent upon effluent quality (details will be supplied on request by the Department of Water Affairs and Forestry).

APPENDIX B - REPORTING OF MAJOR PETROLEUM PRODUCT SPILL

FORM PP/11

FORM PP/11

MINISTRY OF MINES AND ENERGY

PETROLEUM PRODUCTS AND ENERGY ACT, 1990
PETROLEUM PRODUCTS REGULATIONS (2000)

REPORTING OF MAJOR PETROLEUM PRODUCT SPILL

(Regulation 49(1))

(Please note that where form is completed by hand it must be completed in capital letters)

1. Name of licence/certificate-holder/person .....
.....
*(*Delete whichever is not applicable)*

2. Postal address .....
.....

3. Physical address .....
.....

4. Telephone Number (including code) .....

5. Facsimile Number (including code) .....

6. Licence/certificate* number and date of issue, if applicable .....
.....
*(*Delete whichever is not applicable)*

7. Date of petroleum product spill .....

8. Location of petroleum product spill .....
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9. Reasons for petroleum product spill .....
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10. Type of petroleum product involved in petroleum product spill .....
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11. Quantity of the petroleum product spill .....
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12. Indicate whether the petroleum product has or will have any negative effect on the environment and the safety and health of person or the property of persons .....
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13. Provide full details of all remedial actions taken to minimise risks associated with petroleum product spills and all cleaning-up operations taken in connection therewith .....
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DECLARATION

I, ..., hereby declare that the information submitted by me in this application is true and correct.

....
Signature *Place* *Date*

APPENDIX C - COMPLAINTS REGISTER TEMPLATE

NAME	CONTACT DETAILS	DATE AND LOCATION OF COMPLIANT	NATURE OF COMPLIANT	ACTION TAKEN TO RESOLVE	NOMINATED PERSON TO RESOLVE ISSUE *(Signature)*	DATE OF RESOLUTION/ CLOSED OUT COMPLAINT

APPENDIX D - MONTHLY INTERNAL COMPLIANCE CERTIFICATE

FOR THE PERIOD …… TO ……

MANAGEMENT REPRESENTATIVE:	SIGN:
SHE COORDINATOR:	SIGN:

Date of Submission: _____

Key activities on site during the month: _____

_____

_____

_____

NON-CONFORMANCE:

Area of activity: _____

_____

_____

Reason: _____

_____

_____

Responsible party: _____

_____

Results: _____

_____

_____

_____

_____

Correction action taken: _____

Intended follow-up: _____

GOOD PERFORMANCE:

Description of activity or action in which the area/person went beyond compliance towards responsible care for the environment:

ADDITIONAL COMMENTS: