



# Environmental & Social Management System

## Biodiversity Management Plan

<b>Biodiversity Management Plan</b>		
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## **1 INTRODUCTION**

### **1.1 Purpose**

This BMP has been developed by Centerra Gold Inc (Centerra), through its subsidiary, Boroo Gold Company (BGC), for the management of biodiversity aspects of the Project's activities at the Gatsuurt mine site, the mine haulage route and the processing facilities at the Boroo Gold site. This Management Plan is one of a series of Management Plans that outline how Centerra manages the environmental and social aspects of its Gatsuurt operations. The purpose of this Management Plan is to:

- Define the scope of the BMP and set out applicable management interfaces;
- Define roles and responsibilities;
- Outline the applicable Project Standards relevant to this BMP;
- Define Project commitments, operational procedures and guidance relevant to this BMP;
- Define monitoring and reporting procedures, including Key Performance Indicators;
- Defined training requirements; and
- Set out references for supporting materials and information.

### **1.2 Application**

The requirements set out in this BMP apply to all aspects of the Gatsuurt Project including the mine, ore haulage and ore processing and includes the construction, operational and closure phases of the Project. The requirements of this Plan apply to all BGC employees and contractors engaged for the Gatsuurt Project.

This Management Plan is a component of the BGC Health, Safety and Environmental Management System (HSEMS) developed by BGC to provide a framework for the management of environment, social, health and safety aspects of Centerra/BGC operations in Mongolia. Any subsequent changes to the BGC Environmental and Social Management System Framework may result in the changes to this Management Plan.

### **1.3 Commencement**

This Management Plan applies from the commencement of construction at the Gatsuurt Project.

### **1.4 Authority and Management**

This Management Plan is owned by the BGC Director Environment. This Management Plan will be reviewed on a two-yearly basis to determine whether any changes or updates are required to the plan unless a more frequent update is required to reflect changing project design or procedures.

Any requests for changes to this Management Plan must be addressed to the owner of this management plan and will be subject to appropriate review and approval processes as outlined in management of change procedures.

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## 2 SCOPE

### 2.1 Scope of this Management Plan

This BMP applies to all aspects of the Gatsuurt Project including contractor-managed activities. The BMP applies to mining operations at the Gatsuurt mine, transport operations and ore processing at the Boroo Gold Mine. The BMP applies to the construction, operational and closure phases of the Project. The Plan scope include the operation of the tailings management facility at the Boroo Gold Mine where specific risks to wildlife exist but for the installation of effective protection mechanisms, including water treatment and fencing. Transport operations include mine traffic within the Gatsuurt mining area, ore haulage to the Boroo Gold Mine and transport of personnel, fuel and other Project related equipment and consumables to and from the Gatsuurt Mine and the Boroo Gold Mine.

### 2.2 Overlaps with other Management Plans

This Management Plan is part of the overall suite of Management Plans developed for the Gatsuurt Project and as described in the BGC HSEMS.

- Gatsuurt Project Community Traffic Management Plan;
- Gatsuurt Mine Closure Plan;
- BGC Tailings Management Facility Manual;and
- Gatsuurt Mine Surface Water management Plan.

## 3 ROLES AND RESPONSIBILITIES

### 3.1 Key Roles and Responsibilities for Management Plan Implementation

Principal roles and responsibilities for the implementation of this plan are outlined below.

**Table 1: Key Roles and Responsibilities**

<b>Role</b>	<b>Responsibilities</b>
BGC General Director	Ensuring Project compliance with the Project Standards and other requirements set out in this Plan. Approval of this Plan and resources required for implementation.
Director Environment	Overall responsibility for Plan scope and implementation. Development, monitoring and revision of this Plan. Communication of the requirements of the Plan to the senior management team for the Gatsuurt Project. Allocation of resources and responsibilities to the various members of the Environment Department to ensure the effective implementation of this Plan. Review the Plan in accordance with Project requirements and the review frequency stated in this Plan.
Environmental Superintendent	Timely implementation of this Plan, including coordination with implementing organisations and other stakeholders. Development of various procedures, work instructions and programmes that enable the requirements of this plan.

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Role	Responsibilities
	<p>Report and correct actions or incident that indicate a breach of this Plan's requirements.</p> <p>Supervise and manage personnel required for the implementation of this Plan.</p>
Contractors	<p>Ensuring all assets under their control comply with BGC policies and procedures.</p> <p>Supplying certification and/or license in accordance with statutory requirements.</p> <p>Complying with BGC's requirements for environmental management.</p> <p>Reporting of all actual and potential environmental impacts to relevant supervisor or managing body.</p>
Employees	<p>Complying with the obligations outlined in this Management Plan, as well as any other relevant Gatsuurt environmental policies and procedures.</p> <p>Reporting of all actual and potential environmental impacts to relevant supervisor or managing body.</p>

### 3.2 Key Interfaces

Key interfaces in the implementation of this Management Plan (i.e. roles with responsibility for delivering elements of this Management Plan) include:

- General Manager Operations, particularly in relation to mine planning, mine reclamation and closure planning, and provision of resources for the effective implementation of the HSEMS;
- Mine Manager for minimising land disturbance, implementation of mine traffic management, mine reclamation, closure and surface water management;
- BGC Logistics and Transport Manager in regards to the selection and management of transport contractors and the implementation of transport services; and
- BGC Mill Manager for ensuring protection of fauna from tailings facilities and hazardous materials.

## 4 PROJECT STANDARDS

Applicable Standards must be complied with for all Project activities (the "Project Standards").

### 4.1 Applicable Mongolian Legislation

Applicable Mongolian Legislation related to this BMP include:

- Law on Environmental Protection (1995);
- Law on Natural Plants (1995);
- Land Law (2012);
- Forest Law (2012);

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- Water Law (2012);
- Fauna Law (2012);
- Law on Fees for the Use of Natural Resources (2012);
- Subsoil Law (1988);
- Law on Soil Protection and Prevention from Desertification (2012);
- Law on Fees for the Use of Trees and Firewood (1995);
- Law on Fire Prevention (1996).

## **4.2 Applicable Mongolian National Standards**

Applicable Mongolian National Standards (MNS) related to this BMP include:

- General requirements for reclamation of disturbed areas (VCT-17.5.1.19-92);
- Environment and reclamation of disturbed areas MNS 5914:2008;
- Environment and classification of areas disturbed by mining activities MNS 5915:2008;
- Environment and topsoil removal and salvage during earthwork 5916:2008;
- Environment and reclamation of areas disturbed by mining activities. General technical requirements MNS 5917:2008;
- Environment and re-vegetation of areas disturbed by mining activities. General technical requirements MNS 5918:2008;
- Procedures for monitoring transactions of the special environmental protection and reclamation accounts (2014); and
- Procedure for assessment of land characteristics and quality.

## **4.3 DEIA requirements**

Mongolian Detailed Environmental Impact Assessments (DEIAs) have been undertaken for this Project and outline the required environmental management and monitoring requirements. Commitments made in the following DEIAs are applicable to this MP:

- BIOX® Plant DEIA (Nature Friendly LLC, 2010);
- Gatsuurt Haul Road DEIA (Gazar Eco, 2006);
- and
- Boroo Gold Mine DEIA Addendum 2015 (Nature Capital 2015).

## **4.4 Applicable International Standards and Guidelines**

Applicable International Standards that relate to the Gatsuurt Project are those set by the European Bank for Reconstruction and Development (EBRD), specifically:

- EBRD Performance Requirements (2014) (particularly: Performance Requirement 1: Assessment and Management of Environmental and Social Impacts and Issues; Performance Requirement 3: Resource Efficiency and Pollution Prevention and Abatement, and; Performance Requirement 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.

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In addition the Project refers to the 2012 environmental and social standards of the International Finance Corporation;

- Performance Standard 1 - Assessment and Management of Environmental and Social Risks and Impacts;
  - Performance Standard 3 - Resource Efficiency and Pollution Prevention;
  - Performance Standard 6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources;
  - Guideline 1.3 – Wastewater and Ambient Water Quality;
  - Guideline 1.4 – Water Conservation;
  - Guideline 1.6 – Waste Management;
  - Guideline 1.7 – Noise;
  - Guideline 1.8 – Contaminated Land.
- Other international standards applied by the Project include the International Cyanide Management Institute (ICMI) Code of Practice for Gold Mining Operations. Specifically, Centerra, through Centerra Gold, is a signatory to the Code of Practice that includes standards of practice for management of cyanide process solutions and waste streams to protect human health and the environment. The standard of practice requires Centerra to:
    - Implement management and operating systems designed to protect human health and the environment including contingency planning and inspection and preventive maintenance procedures;
    - Introduce management and operating systems to minimize cyanide use, thereby limiting concentrations of cyanide in mill tailings
    - Implement a comprehensive water management program to protect against unintentional releases.
    - Implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.
    - Implement measures to protect fish and wildlife from direct and indirect discharges of cyanide process solutions to surface water.
    - Implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of ground water.
    - Provide spill prevention or containment measures for process tanks and pipelines.
    - Implement quality control/quality assurance procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications.
    - Implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and ground water quality.

#### **4.5 Applicable Centerra Standards**

This Management Plan is developed within the Centerra corporate policies that include policies for worker health and safety, environmental protection and sustainable development

## **5 MITIGATION MEASURES AND MANAGEMENT CONTROLS**

### **5.1 Summary**

This document outlines Centerra's commitment and approach to mitigating Biodiversity risks that may arise as a direct or indirect result of the Gatsuurt project.



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### 5.1.1 Existing Conditions

#### **Flora**

The Gatsuurt survey area is located at the interface of the Mongol-Daurian and the Khentei botanical-geographic regions, and consequently exhibits a high species diversity within forest-steppe plant community types. Terrain ranges from lower elevation, gentle slopes supporting forb-dominated meadows and mesic, mixed forest community types, to very steep, drier slopes supporting variations of the mixed forest and pine-dominated community types. A willow-birch riparian community type is located on the Gatsuurt River above the existing placer disturbance. Disturbed soils on the old placer mining deposits and along local roads support a ruderal community type comprised of early successional plant species.

#### **Fauna**

Wildlife inhabiting the Gatsuurt survey area includes small numbers of large mammals such as Siberian roe deer (*Capreolus pygargus*), small and medium-sized mammals, and a variety of resident and migrant birds. Species composition is expected to vary seasonally, and other species in addition to those recorded during previous field survey are expected to occur in the area. The greatest species diversity would be expected to occur in the spring and summer months, when migratory breeding birds arrive to nest in the area. The Project is not located within any listed specially protected areas and there are no animal species that are listed in the Red Book of Mongolia or under any IUCN classifications.

### 5.1.2 General Approach to Management of Biodiversity

The intent of this management plan is to ensure that the management of biodiversity at the Gatsuurt Project is conducted according to best practice methodologies to avoid the potential for the loss or degradation of identified biodiversity values and to implement sustainable mine reclamation and closure strategies at the cessation of mining operations.

This will be achieved through the following key biodiversity management guidelines:

- Avoidance, where possible, of direct disturbance of significant habitats;
- Minimising vegetation clearing and soil disturbance to the lowest reasonable level achievable;
- Minimising wildlife strike from Project related vehicles;
- Treating mine tailings to ensure water on the TMF is compliant with State permit conditions and not harmful to birds and other wildlife;
- Preventing access by wildlife to mine open pits, water treatment ponds and hazardous materials storage areas;
- Management of domestic wastes to minimise attraction of wildlife;
- Prohibiting hunting and collection of plants or firewood by mine employees and contractors when at work and when accommodated at mine operated facilities; and
- Implementing mine closure and reclamation plans.

This Management Plan is also supported by the plans and procedures detailed below, which present more detail on specific aspects of the day-to-day biodiversity management activities at Gatsuurt. Other Procedures may be developed, as required, to support the Biodiversity Management Plan in addition to the following procedures.

- Traffic Management Plan will include speed limits for Project related vehicles, signage of areas used for wildlife crossings;
- Water Management Plan includes management of surface and groundwater at Gatsuurt such that downstream water supplies accessed by wildlife and aquatic ecosystems are protected. The Water Management Plan includes measures to divert surface water around mining facilities such that diverted surface water is not influenced by mine activities; and, to collect, treat and discharge all mine impacted water to ensure downstream water quality is maintained within accepted standards.

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- BGC Tailings Management Facility Manual includes measures for protection of wildlife at the Boroo Gold Mine facility including measures to ensure water quality concentrations of cyanide and arsenic are below statutory limits and recognised thresholds for protection of birds and other wildlife and measures to ensure the TMF is fenced to reduce the likelihood of animals entering the facility.
- The Gatsuurt Mine Closure and Reclamation Plan is included in the Gatsuurt Mine EIA Report and Project Feasibility Study. The Plan includes specific objectives for mine reclamation and management following the cessation of mining at Gatsuurt and the completion of ore processing at Boroo. These objectives are relevant to biodiversity management and include:
  - Reduce or eliminate potential environmental impacts such as ARD or mining related groundwater impacts;
  - Return the site to a condition which will support land uses similar to those which existed prior to the onset of mining activities. These land uses include livestock forage production and wildlife habitat;
  - Control infiltration, erosion, sedimentation, and related degradation of existing drainages in an effort to minimize off-site impacts; and
  - Employ reclamation practices using proven methods which do not require ongoing maintenance.

With these objectives in mind, reclamation activities are designed to:

- Stabilize the disturbed areas to a safe condition; and
- Protect both disturbed and undisturbed areas from unnecessary and undue degradation.

In undertaking the mine closure and reclamation at the Gatsuurt mine, Centerra will restore a significant portion of the previously disturbed alluvial mining area within the Gatsuurt River valley.

Reclamation at Gatsuurt and Boroo will include barriers to minimise access by wildlife to open pits and water storage ponds; reclamation of tailings management facility; removal, treatment or remediation of sources of contamination and restoration of wildlife habitat where feasible.

### **5.1.3 Biodiversity Management Planning**

The key potential impacts to biodiversity as a result of the Project's development identified in impact assessment studies include:

- Direct habitat loss, including forest, from vegetation clearing required for mine open pits, waste landforms, mine roads and ancillary facilities;
- Indirect habitat loss from ARD impacted soil and water during operations and post closure;
- Increased hunting and collection as a result of improved access at Gatsuurt and increased human population in the areas a result of Project operations;
- Wildlife deaths as a result of vehicle strike along the Project haul road; and
- Wildlife interaction with potentially contaminated water at the mine and at the Boroo TMF.

Although some medium and high quality habitat will be removed from site area, large areas of the Gatsuurt valley, where the proposed mine facilities are to be located, have been previously disturbed by historical mining activities and are currently un-vegetated with exposed mine workings (reworked subsoils). The magnitude of the impact to terrestrial biological resources is further reduced given the availability of large expanses of similar vegetation nearby and the planned implementation of a site closure and rehabilitation plan following operations. The implementation of the mine closure and reclamation plan also allows for the rehabilitation of previously

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disturbed areas that otherwise may not have been rehabilitated, providing the opportunity to achieve a positive impact to biodiversity within the Project area.

Speed limits on the haul road will be limited in order to reduce the potential for wildlife mortality as a result of vehicle strikes. Drivers shall also be made aware of their environmental requirements through a training and awareness program.

The management of the TMF discharge to ensure concentrations of arsenic and cyanide present in the treated mine tailings are below regulatory limits will ensure impacts to bird life are minimised. BGC, through Centerra, is a signatory to the International Cyanide Management Code (the Code), which is considered international best practice with regards to cyanide management. The Code sets limits on the levels of cyanide allowed to be present in TMF water solutions in order to minimise impacts to wildlife. Additionally, the Government of Mongolia has set water quality limits on the TMF water that are substantially more stringent than the Code requirements. As a result, impacts to bird life that may utilise the TMF area are considered highly unlikely.

#### **5.1.4 Assessment of Issues and Impacts**

The impact assessment process adequately characterised baseline conditions in the Project area. It considered loss of habitat, degradation, hydrological changes and pollution. The EIA process concluded that there will be no significant impacts on biodiversity with the implementation of effective controls, specifically water treatment at Gatsuurt. There is no critical habitat triggering species (as defined in PR6) identified within the Gatsuurt Project area.

#### **5.1.5 Invasive Species**

The introduction of invasive species is not considered to be a Project risk. BGC will promote consistent monitoring, evaluating and reporting of weeds and implement weed control mechanisms as required.

#### **5.1.6 Reinstatement and Rehabilitation**

The primary objective of rehabilitation of the post-mining disturbance will be to create a stable final landform supportive of the post mining land use. A Preliminary Mine Closure and Reclamation Plan has been developed for the Gatsuurt Mine for the Gatsuurt Mine Environmental Impact Assessment and the statutory Detailed Environmental Impact Assessment. A detailed mine closure and reclamation plan will be completed 3 years prior to cessation of mining at Gatsuurt and will provide a prescriptive approach for restoration of disturbed areas and ongoing protection of biodiversity through landform stability, prevention of contamination and maintenance of surface water quality.

One of the key reclamation programs at closure will be the rehabilitation of the Gatsuurt river course and riparian areas. The current Gatsuurt valley that has been subject to alluvial and placer mine operations contains unsorted boulders, cobble and gravels. The original Gatsuurt River course has been significantly altered through small scale alluvial mining.

The geomorphic design of the Gatsuurt valley will be used to construct the Gatsuurt River at the grade, width and depth that fits that valley's geomorphic character, and will therefore approximate the original valley course. This final valley course will also undergo aquatic rehabilitation with a succession of aquatic vegetation and macroinvertebrates. This combination of aquatic media will support the higher level aquatic species including a diverse assortment of fish species.

The shoreline of the reclaimed river course will be planted with an assortment of riparian species, such as willows, sedges and rushes. Therefore the Gatsuurt River reclamation program will produce an aquatic and riparian system that fits the valley and provides similar biodiversity values as existed prior to the alluvial/placer mine projects that originally impacted these resources.

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### 5.1.7 Biodiversity Offsets

The impact assessment completed for Gatsuurt has not identified any significant residual impacts to biodiversity that require offsets. However, the loss of forest area due to land disturbance is proposed to be offset through a program to be developed in consultation with key stakeholders in accordance with the Mongolian Environmental Impact Assessment guidelines. The offset program requires approval from local and national governments and must include engagement with local stakeholders. The offsetting of forest areas is likely to include options for improved management and protection of existing forest areas at Gatsuurt, rehabilitation of Gatsuurt forest areas impacted by non-mining related activities and supporting programs that encourage community based forest management at Gatsuurt.

### 5.1.8 Incidents and Non-Conformances

All incidents and non-conformances related to flora and fauna aspects are to be documented and recorded. As a minimum the report will include the following details:

- The date, time and nature of the event;
- Identification of the likely cause of the event;
- Description of the immediate actions undertaken;
- Description of follow up actions where required.

The outcomes of such investigations will be recorded and implemented.

## 5.2 Plan Goals and Objectives

The overarching goals of the Gatsuurt approach to Biodiversity are to:

- Avoid where possible or minimise disturbance of vegetation and soils from mining development, transport and ore processing activities;
- Maintain biodiversity and ecological processes to the extent possible and practical by implementing effective biodiversity control strategies for mine transport operations, surface water discharges and tailings disposal; and
- Mitigate biodiversity impacts from mine development through implementing effective mine closure and reclamation strategies post mining; and
- Ensure all Project activities are undertaken in compliance in accordance with the requirements of applicable Mongolian biodiversity laws as well as EBRD Performance Requirement 6.

These objectives will be pursued through implementation of this Management Plan, and will be measured and evaluated through the key performance indicators detailed in Section 7.2 below.

## 5.3 Key Stakeholders

Key stakeholders of relevance to this management plan include:

Stakeholder	Area of interest/interaction
Mongolian Ministry for Environment, Green development and Tourism.	Forest clearing permits; biodiversity offset planning; protection of priority species and critical habitat; approval of environmental management plans

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<b>Stakeholder</b>	<b>Area of interest/interaction</b>
Aimag (provincial) and soum (local) Government	Monitoring implementation of environment plans and compliance with DEIA commitments.

#### **5.4 Management Controls**

Based upon the identified impacts and opportunities presented above, the following control measures will be put in place during the construction and operations phase of Gatsuurt. These control measures will be implemented through the Gatsuurt Biodiversity programme run by the Environmental Department.

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**Table 2 Key Management Controls**

<b>ID</b>	<b>Topic/ Aspect</b>	<b>Applicability / Activity</b>	<b>Control Description</b>	<b>Responsible Parties</b>	<b>Means of verification</b>
BIO01	Waste management	Mining; Processing; Worker Accommodation; Transport	Appropriate management of waste streams to prevent fauna attraction and interaction. Prevention of feeding fauna. Appropriate disposal of all chemical waste.	Environment Department Operational Departments Principal Contractors	Internal audit and inspection programme
BIO02	Fauna exclusion	Mining and Processing	Ponded water structures fenced to prevent access by fauna including livestock. Education of local herders of the risk to livestock health.	Environment Department Operational Departments	Internal audit and inspection programme
BIO03	Fauna Protection	Processing	Maintain Cyanide and Arsenic concentrations in TSF below statutory limits and in accordance with ICMI Cyanide Code.	Processing Department Environment Department Operational Departments	TSF pond water quality Monitoring
BIO04	Clearing	Mining	Delineate mine vegetation clearing areas and restrict equipment and vehicle movement beyond boundaries. Restriction of personnel movement outside of the Project area.	Mining Department Environment Departments Principal Contractors	Internal audit and inspection programme
BIO05	Clearing	Mining Transport	Initiate land disturbance permit system to ensure all land clearing/disturbance is appropriately assessed.	Environment Department	Records of land disturbance approval and assessment
BIO06	Hunting and collection	All	Banning of hunting collection/poaching, including firewood collection, for all Boroo employees and contractors while at work or accommodated at Boroo mine-operated camp.	Environment Department	Incident reports
BIO07	Traffic collisions	Transport	Implementation of speed limits for all roads. Restriction of driving activities during periods	Environment Department	Vehicle speed checks

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<b>ID</b>	<b>Topic/ Aspect</b>	<b>Applicability / Activity</b>	<b>Control Description</b>	<b>Responsible Parties</b>	<b>Means of verification</b>
			of peak fauna activity e.g. dawn/dusk. Sign posting and speed limits for known fauna corridors. Communication to workforce of High activity/fauna strikes etc.	Mine Haulage Contractor Mining Department	Incidents of wildlife strike.
BIO09	Loss of Forest Areas	Mining	Develop offset program for forest areas in consultation with local and national Governments in accordance with EIA Guidelines. Program to be developed for Government approval prior to operations.	Environment Department External Relations	Approved offset program in place.

## **6 IMPLEMENTATION SCHEDULE**

### **6.1 Review and Revision of this Management Plan**

This Management Plan will be reviewed on an annual basis and any necessary revisions made to reflect the changing circumstances or operational needs of Gatsuurt. Revision of this Management Plan will be the responsibility of the BGC Environment Director who is custodian of this Plan.

If material changes to operating procedures are required (as identified through change management procedures contained within the Gatsuurt health, safety and environment (HSE) and community relations (CR) Management System), this Management Plan may be updated on an “as required” basis.

Any revisions to this Management Plan will be uploaded to the Gatsuurt document management system in order to ensure that all Gatsuurt staff has access to the latest version of this Management Plan.

## **7 MONITORING**

### **7.1 Overview of Monitoring Requirements**

The key monitoring tasks for biodiversity management include monitoring the effectiveness of impact controls outlined in this plan. The monitoring will focus on the effectiveness of land disturbance controls implemented during mining; maintenance of the TMF pond water quality within statutory limits to avoid impacts to wildlife; and, monitoring the effectiveness of traffic management controls designed to minimise wildlife strikes. In addition, the monitoring of ARD and surface water management, as described in the relevant plans, will allow the potential for impacts from the discharge of surface water to be identified and acted upon as necessary.

Monitoring of the state of key biodiversity features will provide further evidence of the effectiveness of controls and identify any unforeseen impacts that may occur as a result of Project implementation. This monitoring will be further defined prior to commencement but will include:

- Assessment of vegetation/forest health in the vicinity of the Gatsuurt mine to identify possible impacts from increased illegal logging, impacts from changes to hydrological regimes or from mine dust emissions.

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- Assessment of the condition of aquatic ecology downstream of the Gatsuurt mine to identify any potential impacts from surface water diversions and the discharge of treated mine water; and
- Assessment of pastureland condition in the areas surrounding the Gatsuurt mine to identify potential for impacts from mine dust, changes to hydrological regimes and possible increased grazing.

Due to the nature of the Gatsuurt Mine, the mine closure and reclamation activities will be largely completed towards the end of the mining phase and the monitoring associated with mine closure and reclamation will be fully described in the detailed Mine Closure and Reclamation Plan developed 3 years prior to the cessation of mining and Gatsuurt.

In the event that monitoring identified non-conformance with Project Standards, these will be investigated and appropriate corrective actions identified.

## **7.2 Key Monitoring Activities**

Key monitoring activities will focus on biodiversity management and mitigation measures and identified biodiversity indicators to enable assessment of whether project activities are having negative impacts. In the event that any monitoring results identify a non-conformance with the Project Standards, these will be recorded as incidents, investigated and corrective actions identified.

Key monitoring measures are set out below.



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**Table 3: Key Monitoring Measures**

<b>ID</b>	<b>Topic/Aspects</b>	<b>Methods</b>	<b>Periodicity</b>	<b>Location</b>
BIOM01	Vegetation	Condition of forest and riparian vegetation surrounding Gatsuurt Mine: Monitoring plots - vegetation condition; canopy; cover; diversity.	Annual	Control location and areas within 1km distance of mining activities.
BIOM02	Aquatic habitat	Species diversity, abundance and occurrence at selected sample locations.	Annual	Control location and plots downstream of Gatsuurt Mine
BIOM03	Pasture	Pasture condition using accepted indices.	Annual	Control and sites within 1km of Gatsuurt operations.
BIOM04	Land Clearing/Disturbance	Monitor land disturbance against permitted clearing area.	Annual	Gatsuurt operations and access road
BIOM05	Wildlife Strikes	Maintain records of all incidents of wildlife mortality from mine vehicle collisions.	Continuous	All
BIOM06	Wildlife Mortality TSF, open pits and Water ponds	Maintain records of all wildlife mortality events that occur on mine open water ponds, TSF, mine open pits and mine water treatment system.	Continuous	All

## **8 TRAINING**

All employees of Gatsuurt and Contractors to Gatsuurt are provided with basic training on environmental awareness and site rules through the employee and contractor induction programs. Additional training is to be provided to Environment Department personnel involved in biodiversity monitoring and to transport operators in regards to the safe use of vehicles including means to avoid collisions with livestock and wildlife.

## **9 AUDIT AND REPORTING**

### **9.1 Internal Auditing**

Regular site inspections (at least weekly) will be carried out by operational supervisors at the Gatsuurt Mine, along the transport corridor and at the Boroo Gold Mine processing facilities and TSF that will cover a broad range of HSE issues including the identification of readily observable impacts to wildlife, dust control, loss of containment, failures to water treatment system, unplanned discharge and unauthorised land disturbance.

Any incidents identified during these inspections will be reported to the incident management system.

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Conformance will be monitored via an annual internal audit program in accordance with the BGC HSEMS. This will be undertaken to assess broad compliance with requirements of the management system (including ESIA and management plans).

## **9.2 External Auditing**

Conformance with this plan will be subject to periodic assessment as part of the Centerra audit programme and by Project Lenders.

## **9.3 Record Keeping**

Records of audits, inspections and incidents will be managed in accordance with Gatsuurt procedures.