Emergency Response and Contingency Plan for Sierra Rutile Limited, Sierra Leone

Sierra Rutile Limited

Sierra Rutile Limited

March 2018

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EPA-SL	Environmental Protection Agency of Sierra Leone
ASAP	As soon as possible
CAD	Community Affairs Department
CEO	Chief Executive Officer
COO	Chief Operating Officer
CPR	cardiopulmonary resuscitation
ECO	Emergency Coordinating Officer
EHS	Environmental, Health and Safety
EHS Guideline	Environmental, Health and Safety Guidelines
EIA	Environmental Impact Assessment
EP	Equator Principles
EPA Act	*Environment Protection Agency Act*
EPFIs	Equator Principles Financial Institutions
ERCP	Emergency Response and Contingency Plan
ERT	Emergency Response Team
ESHIA	Environmental, Social and Health Impact Assessment
ESHMP	Environmental, Social and Health Management Plan
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
GIIP	Good International Industry Practice
GOSL	Government of Sierra Leone
HR	Human Resources
HSEC	Health, Safety, Environmental and Community
IFC	International Finance Corporation
MLCPE	Ministry of Lands, Country Planning and the Environment
MSDSs	Material Safety Data Sheet
NMA	National Minerals Agency
PPE	Personal Protective Equipment
PS	Performance Standards
SLEP (MM) Reg. 2013	Environmental and Social Regulations for Mining, 2013
SRK	SRK Consulting (South Africa) (Pty) Limited
SRL	Sierra Rutile Limited
US	United States

1 Introduction and background

Sierra Rutile Limited (SRL) is an existing mining operation located in the Bonthe and Moyamba Districts of the Southern Province of Sierra Leone. The mine has been in operation for over 50 years and produces rutile, ilmenite and zircon rich concentrate.

In 2015, the Environmental Protection Agency of Sierra Leone (EPA-SL) issued a notification to SRL (reference number EPA-SUHA.96/214/a/HNRM), instructing them to undertake an Environmental, Social and Health Impact Assessment (ESHIA) and develop an Environmental, Social and Health Management Plan (ESHMP) for their current and proposed mining activities including the proposed expansion areas within Area 1. This included the Gangama and Lanti deposits and other deposits within SRL's current operations in Sierra Rutile Area 1 (SR Area 1).

SRK Consulting (South Africa) (Pty) Ltd (SRK) was appointed by SRL to undertake the ESHIA / ESHMP process to meet Sierra Leonean legal requirements as well as SRL's corporate policies, which are aligned with Good International Industry Practice (GIIP). The Draft ESHIA / ESHMP Report was submitted to the EPA-SL in March 2018.

As part of the process of implementing the outcomes of the ESHIA / ESHMP, an Emergency Response and Contingency Plan (ERCP) is required to be prepared. This document constitutes the ERCP which is an appendix to the ESHIA / ESHMP Report and will form part of SRL's Health, Safety, Environmental and Community (HSEC) Management System.

1.1 Purpose of this plan

SRL has developed this ERCP to provide employees and managers with specific instructions that will allow them to respond quickly and efficiently to any foreseeable emergencies likely to occur at their operations in Area 1.

This ERCP has been developed using recognized and accepted methods and practices and is an update of the study prepared by Knight Piésold in 2001 and CEMMATS in 2012. This update includes specific responses, protocols, and management contact information based on actual site conditions during the operational phase of the mine. It is assumed that the following measures will be put in place for the successful implementation of this plan:

- Personnel should be competent and understand their roles and responsibilities during emergency response situations;
- Drills and exercises should be conducted on a quarterly basis to assess and improve upon emergency response; and
- The plan should be periodically updated to incorporate lessons learned from previous incidents and exercises.

The ERCP essentially has the goal of protecting people, the environment, property and the operations. This document deals with typical emergency types that characterize the SRL operation which include:

- Fire or explosion;
- Pollution or chemical spills;
- Road traffic accidents;
- Flooding, landslides and rain storm (natural conditions);
- Medical health cases;
- Catastrophic tilting/capsizing/sinking of SRL floating plants; and
- Civil unrest and disturbances.

SRL is committed to operating at the highest standards to protect the health and safety of its workers, the public, and the environment. Therefore, the employees of SRL will develop and maintain the ERCP in compliance with applicable laws and industry standards to ensure a timely and appropriate response to emergencies. This document was developed to provide specific emergency response guidelines for employees and managers of SRL. The plan also identifies who will be responsible for plan implementation and what records and reporting procedures will be required. The ERCP has been developed based on accepted methods and practices.

This ERCP will be implemented as part of the SRL's HSEC management system.

2 Governance framework

This ERCP has been developed in accordance with national and international regulations and guidelines. The regulations and guidelines are discussed in the following sections.

2.1 National standards and guidelines

The following Acts and Regulations are applicable this project and are further discussed in the subsections that follow:

- *Mines and Minerals* Act, *2009*; and
- *The Mines and Minerals Operational Regulations, 2013.*

2.1.1 Mines and Minerals Act, 2009

The key provisions of the Mines and Minerals Act relate to mineral rights and access to surface rights (including compensation for land owners), radioactive materials, protection of the environment, community development, health and safety, and transparency in the extractives industry. The Minister for Mineral Resources and the National Minerals Agency (NMA) are the current relevant authorities for enforcing the Act.

Part XV – Protection of the Environment

General and specific provisions for varying mining activities are provided in Part XV – Protection of the Environment of the Act (§131 – 137). The majority of this part in the Act is applicable for mining licence holders seeking a small or large-scale mining licence. There are however certain sections that apply to all mining licence holders. The relevant sections are as follows:

- §132 (1), which requires the mining licence holder to exercise duty of care to protect the environment and minimise pollution, and states “a holder of a mineral right is subject to all laws of Sierra Leone concerning the protection of the environment” (§132 (2)).

Part XVII - Health and safety

This section of the Mines and Minerals Act provides provisions for holders of mineral right in terms of health and safety (§142 – 147). It addresses workplace health and safety requirements and provisions including a policy for compensation of injured workers.

In addition, *Section 142 (d) states: “Every holder of a mineral right shall ensure that persons who are not employees, but who may be directly affected by the activities at the mine are not exposed to any hazards to their health and safety”.*

2.1.2 *Environmental and Social (Mines and Mining) Regulations, 2013*

The SLEP (MM) Reg. 2013 were drafted under the EPA Act and apply to corporates or individuals applying for, or having been issued exploration or mineral rights under the *Mining and Minerals Act*, *2009*. All persons or industries who undertake or have cause to undertake any extractive industries project will likely be subject to its provisions.

The Regulations raise the standard of environmental management required by mining operations and align favourably with the principles of GIIP. Key international environmental management principles form the basis of the Regulations, including sustainability, access to information, public participation and consultation, the precautionary principle, protection of affected communities, corporate social responsibility, adoption of environmental best practice and the polluter pays principle.

The seventeenth schedule in the SLEP (MM) Reg. 2013 describes the standards for the care and maintenance programme. Section 6 of this schedule describes the requirements for an Emergency Response Action Plan

2.2 International standards and guidelines

The international standards and guidelines as applicable to this project are presented in the subsections that follow.

2.2.1 IFC Performance Standards

The IFC 2012 Performance Standards (PS) are an international benchmark for identifying and managing environmental and social risk, and has been adopted by many organizations as a key component of their environmental and social risk management.

There are eight IFC PS's in total, seven of which are relevant to the SR Area 1 operations, namely:

- PS 1: Assessment and Management of Environmental and Social Risks and Impacts;
- PS 2: Labour and Working Conditions;
- PS 3: Resource Efficiency and Pollution Prevention;
- PS 4: Community Health, Safety and Security;
- PS 5: Land Acquisition and Involuntary Resettlement;
- PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources; and
- PS 8: Cultural Heritage.

The IFC PS, and the Equator Principles which generally follow the requirements of the IFC, have been adopted for this project. The PS's that relate to emergency response and contingency are PS 1, PS 3 and PS 4. This document aims to address the requirements of these.

PS 1: Assessment and Management of Environmental and Social Risks and Impacts

PS 1 outlines the importance of managing environmental and social performance throughout the life of a project by developing and implementing an effective Environmental and Social Management System (ESMS). One of the key elements of an ESMS is emergency preparedness and response.

PS 3: Resource Efficiency and Pollution Prevention

PS 3 outlines a project-level approach to resource efficiency and pollution prevention and promotes application of technologies and practices where feasible based on commercially available skills and resources to achieve this.

PS 4: Community Health, Safety and Security

PS4 sets out to ensure that adverse impacts on the health and safety of communities affected by a development are anticipated and avoided, both from routine and non-routine circumstances throughout the life of the project.

2.2.2 Environmental Health and Safety Guidelines

The World Bank Group Environmental, Health and Safety Guidelines (EHS Guideline) are technical reference documents with general and industry-specific examples of GIIP, as defined in IFC's PS 3: Resource Efficiency and Pollution Prevention. The IFC uses the EHS Guideline as a technical source of information during project appraisal.

The EHS Guidelines contain the performance levels and measures that are normally acceptable to IFC, and that are generally considered to be achievable in new facilities at reasonable costs by existing technology.

Emergency preparedness and response is addressed in the General EHS Guidelines document under headings Hazardous Material Management, Waste Management and Community Health and Safety.

The EHS guidelines for Community Health and Safety contains a section on Emergency Preparedness and Response. An emergency is an unplanned event when a project operation loses control, or could lose control, of a situation that may result in risks to human health, property, or the environment, either within the facility or in the local community. Emergencies do not normally include safe work practices for frequent upsets or events that are covered by occupational health and safety. All projects should have an Emergency Preparedness and Response Plan that is commensurate with the risks of the facility and that includes the following basic elements:

- Administration (policy, purpose, distribution, definitions, etc)
- Organization of emergency areas (command centers, medical stations, etc)
- Roles and responsibilities
- Communication systems
- Emergency response procedures
- Emergency resources
- Training and updating
- Checklists (role and action list and equipment checklist)
- Business Continuity and Contingency

Further to the measures outlined above, SRL should take cognisance of the 2007 EHS Guidelines for Mining which focus on emergency preparedness and response within the mining industry. There needs to be adequate planning and containment/ mitigation measures in place to deal with emergencies.

2.3 Corporate policies, framework and standards

In addition to complying with international and national Regulations and standards, Iluka, SRL's parent company, has its own of policies, standards, procedures and guidelines. All Group standards and procedures provide auditable criteria, against which compliance can be measured. These structures define commitments, directions and intentions. They provide emphasis, set direction and are equivalent to organisational law; driving decision making within the business. Below is a description of the Iluka framework, policies, standards and procedures.

2.3.1 Iluka Health, Safety, Environment and Community Management System Framework

The HSEC Management System framework defines the requirements, processes and tools to assist with achieving Iluka's sustainability objectives which are:

- High levels of performance aimed at sustainable outcomes;
- Sound governance, planning, control and risk management systems; and
- Positive and enduring legacies with mutually beneficial outcomes.

The HSEC Management System Framework comprises of the following key areas:

- Environment – conducting activities such that adverse impacts on existing and potential environmental values are minimised. This includes the efficient use of resources, in particular energy, water and land, and effective plans for the cessation of operations and rehabilitation of disturbed areas;
- Health – identifying, assessing and monitoring health hazards;
- Safety – managing personal and operational safety risks; and

- Community – engaging our communities and ensure their views form part of our decision-making process.

The system covers the lifecycle of Iluka activities from exploration, planning and project development, through to operation, closure and rehabilitation.

2.3.2 Iluka Health, Safety, Environment and Community Policy 2017

The HSEC Policy provides a declaration on the importance Iluka places on conducting its business safely, without detrimental health effects and with regard to the community and the value of the natural environment. Iluka HSEC Policy commits the Company to operate in a sustainable manner by targeting high levels of performance and pursuing leading practice in the areas of health, safety, environment and community reflecting the Company's values of Commitment, Integrity and Responsibility. The main aspects of the HSEC Policy are to:

- Assess and manage environment, workforce and community risks associated with Iluka's activities;
- Comply with all legislative requirements, which are recognise as the minimum standard to achieve;
- Set clear, achievable and measurable performance targets;
- Seek to continuously improve performance;
- Maintain a HSEC management system covering all areas of the business;
- Provide appropriate training to staff; protect the health and safety of the people by identifying and taking appropriate action to mitigate workplace fatalities, injuries and illnesses;
- Acknowledge the cultures, customs and values of people in communities where we operate;
- Engage early in open, inclusive and meaningful communication and incorporate stakeholder views in the decision-making processes;
- Seek to make a positive difference to the social and economic development of the areas in which the Company operates;
- Develop effective plans for the cessation of operations and rehabilitation of disturbed areas;
- Use resources efficiently, in particular energy, water and land; and
- Maintain a product stewardship approach towards the use of the Company's products.

The HSEC Policy aligns with Iluka's overarching commitment to deliver high levels of health, safety, environment and communities performance while providing a commitment to ensure that health, safety, environment and communities standards reflect the relevant leading practise.

2.3.3 Iluka Group standards

These standards specify uniform mandatory performance requirements that govern decisions and behaviour in support of the Iluka policies. They describe what shall be done. They provide a basis for verifying compliance through audits and assessments. Iluka has 14 group standards, those relevant to OHS and emergency response and contingency are discussed:

- Standard 1: Risk and hazard management: environment, workforce and community risks associated with Iluka operations are assessed and managed. Controls are implemented, communicated and monitored for their suitability and effectiveness. Planned and unplanned changes are managed effectively;
- Standard 3: Training and Awareness: employees and contractors are appropriately trained and are competent to perform work;
- Standard 4: Contractor Management: contractor selection, engagement and management are systematically conducted to ensure alignment and conformance with our policies and objectives. Contractor capability and performance are regularly monitored to identify opportunities for continual improvement;
- Standard 6: Process Safety: a systematic approach to process hazard management is implemented, ensuring necessary preventive controls and defences are installed and maintained

to prevent catastrophic release, fire, and explosion. Process integrity is effectively managed by the application of robust design, engineering, operating and maintenance systems;

- Standard 10: Radiation Management: risks with the potential to result in adverse outcomes during exploration, pre-feasibility, operations and closure are appropriately managed to levels as low as reasonably achievable;
- Standard 11: Workplace Health and Hygiene: employees and contractors are assessed for their fitness to work. Health hazards within Iluka workplaces and the communities in which we operate are identified and effectively managed. Health promotion initiatives are undertaken to actively encourage safe and healthy lifestyles;
- Standard 12: Incident Reporting and Investigation: HSEC near hits and incidents are reported and appropriately investigated to establish root cause and identify contributing factors. Preventive and corrective actions are implemented to prevent recurrence and share learnings;
- Standard 13: Emergency and Crisis Preparedness: identified risks with the potential to result in emergency and crisis situations are appropriately managed. Our capability to respond to such events is developed, documented, maintained and verified; and
- Standard 14: Audit and Assurance: Iluka's management system is effective in managing sustainability performance, has been successfully implemented and progress is measured to drive continual improvement.

3 Organizational and management responsibilities

Responsibility for sustainability management, in particular the implementation of the SRL HSEC management system, will be the responsibility of numerous levels and functions in the organisation. As this ERCP is a component of the HSEC management system, and the responsibility for the ERCP will follow the structures outlined in the ESHIA. Ultimate responsibility for the implementation of the ERCP and the safe and environmentally sustainable operation in SR Area 1, is vested in the Chief Executive Officer (CEO) of Sierra Rutile. Operational implementation will be devolved to:

- Chief Operating Officer (COO) of Sierra Rutile,
- Mining and Processing Managers;
- Environmental, Health and Safety (EHS) Manager, who in turn oversees:
  - The Practice Manager (Clinic);
  - Environment and Radiation Superintendent; and
  - Safety Superintendent.

The responsibilities of key management personnel are summarized for each position in this section. The discussion is meant to provide an overview of key responsibilities and is not a complete list of responsibilities for each position.

3.1 Organisational structure

3.1.1 Chief Operating Officer

The COO is the senior executive on site and is responsible for all actions and activities at the mine. The COO is the primary operational decision maker, and works closely with the Mining and Processing Managers and the EHS Manager in responding to emergencies. It is the duty of the COO to coordinate with the CEO, who is responsible for public and government relations actions, as required to assure that the appropriate government authorities and the public are adequately informed of accidents or emergencies that may occur on site.

3.1.2 Mining and Processing Managers

The Mining and Processing Managers are second-in-command in responding to emergency situations, depending on where an incident has occurred (e.g. at a mining face or at one of the processing plants). The Mining and Processing Managers will work closely with the COO to coordinate efforts and limit the hazards to employees, the public and the environment.

3.1.3 Environmental, Health and Safety Manager

The EHS Manager will collaborate strongly with the COO and the Mining and Processing Managers in the event of an emergency. The EHS Manager is responsible for implementing the ERCP and maintaining its currency with site conditions, management changes and improvements in response techniques. He/she is also responsible for the training of first responders in what to do and how to do it, and as such, will be thoroughly familiar with all aspects of the emergency response program. The EHS Manager is responsible for the disposal of materials and wastes that may be accidentally released and the clean-up and proper disposal of spilled materials. He/she is also responsible for the occupational health and safety programs including employee training and special training of the Emergency Response Team (ERT). He/she is responsible for communications with the public, including notification of incidents and disclosure of important information.

Specific responsibilities of the EHS Manager include the following:

- Prepare a list of emergency contacts;
- Maintain the inventory of emergency response equipment and supplies;
- Arrange for the replacement of used or obsolete emergency supplies and equipment;
- Organize and train the ERT;
- Oversee first response programs;
- Inspect and maintain fire extinguishers;
- Maintain records on emergencies or fatalities;
- Maintain records on spills, leaks, or ruptures;
- Oversee spill clean-up and disposal programs;
- Report to regulatory agencies and stakeholders;
- The EHS Manager through the Corporate Affairs and Human Resource Managers interact with the public to:
  - Provide information to the public on project hazards and response programs;
  - Brief the public and employees' relatives on emergencies; and
  - Arrange for accommodation for family members in the event of extreme emergencies.

3.1.4 Safety Advisors

Safety Advisors will undertake inspections / audits of safety requirements by employees and sub-contractors; sampling and data capture in accordance with safety monitoring program and analysis of results; assistance with the preparation of reporting and permit applications.

3.1.5 Site Managers

Safety management at SRL is considered to be a line management function. Site Managers are responsible for health and safety of employees, day-to-day operations, and attainment of zero incidents, fatalities and job-related illness, as well as identification of unsafe situations. The Site Managers will further ensure that the HSEC Management System is in place as a framework for auditing against, will ensure procedures for updating of policy are in place and will ensure management representation on a Joint Health and Safety Committee.

3.2 Emergency Response Team

The EHS Manager is responsible to recruit and train an ERT. The ERT is comprised of site employees from all Departments with the requisite specialty training to provide support in the case of an emergency. The EHS Manager is responsible for the selection of qualified candidates in appropriate numbers to facilitate the response programs required by the plan. Training of the ERT will be ongoing so that members will be able to respond to on-site emergencies. Training has been conducted in the use of self-contained breathing apparatus in the event that a fire or explosion renders the work atmosphere unsuitable for entry. Refresher training will be conducted as necessary. Critical training areas identified for the ERT have been based on key risk issue pertinent to SRL operations. These include the following:

- Respond to emergencies involving fires or explosions;
- Respond to emergencies involving injuries or fatalities;
- Specialised workplace recues such as rescue form height, from confined spaces and water rescues;
- Train staff on site safety and emergency response procedures;
- First aid training;
- Control and mitigate spills or other accidental releases; and
- Assist with evacuation procedures in responding to all emergencies, including emergencies involving employees, community members and the general public.

3.3 Manager responsibilities

On-site managers will each be responsible for identifying potential safety issues and for coordinating the response to emergencies in their work areas. They will be responsible to notify the appropriate personnel in the event of an emergency. Managers will help monitor for accidental spills and releases that may occur at facilities under their supervision. Managers will also be responsible for documenting and reporting all incidents including accidental spill releases in areas under their direct supervision.

3.4 Contact list

The EHS Manager is responsible for preparing a list of contacts for inclusion in this plan. The contact list will be updated as often as is necessary. An emergency contact list will also be included in the Visitors' Induction Hand-out for mine site visitors. Emergency contact information will be inserted in the front of this plan so that they are readily accessible in the case of an emergency. Emergency contacts will also be posted in prominent places in the mine facility. The emergency contact information will include names and detailed contact information for the following:

- SRL personnel in key management positions, including medical professionals;
- The ERT(s);
- Contractors with response equipment that may be needed to supplement the mine fleet in the event of an emergency;
- Local community leaders including Chiefdom Authorities; and
- Appropriate Sierra Leone government authorities.

3.5 Mine layout and emergency facility locations

Along with the contact list discussed above, the EHS Manager will prepare a map which shows the current layout of the mine, plants and support facilities for inclusion in this plan. Detailed plans of evacuation routes in each area will be developed and clearly posted in each operational area.

The SRL clinic is manned by two medical doctors and qualified and experienced nurses. The clinic is

available to respond to on-site medical emergencies and serves as a trauma centre in the case of an emergency. The locations of preliminary emergency response including the locations of emergency contact lists, equipment, first aid stations, and other pertinent response facilities will be publicised to staff in all Departments. Training will be ongoing for drivers of vehicles and light mobile equipment to familiarize them with the locations of emergency response and medical care facilities.

4 Potential sources of risk

Typical examples of risks which might be generated by SRL's internal activities during construction, operations and closure provided below have been drawn from similar projects dealing with risks in the industry.

All Phases:

- **Non-compliance with measures resulting in incidents**: Incidents could result from such actions as failure to comply with safe behaviour, safety labelling, as well as not wearing Personal Protective Equipment (PPE); work equipment failure; manual load handling.

Construction:

- **Traffic:** Traffic associated with construction vehicles, either due to collisions or accidental leaks, spills and incidents from chemicals or hydrocarbons resulting in soil and water pollution; and
- **Construction activities**: Construction accidents such as falls from a height and electrocution, as well as spillages and contamination of soil and water resources. There could also be accidents from community members accessing the construction site.

Operations:

- **Mining:** Contributors to risk associated with surface mining include: collapse of pit walls with potential health and safety risks to employees; geotechnical instability, resulting in collapse or flooding of the mine pits resulting in risks to health and safety of workers;
- **Material transport to and from site and on-site**: Differential speeds between heavy vehicles, light vehicles, pedestrians and cyclists could result in traffic accidents. In turn, accidents could result in hazardous materials spillages.
- **Handling, storage, use and disposal of hydrocarbons, chemicals and waste:** Contributors to potential risks associated with chemical management could cover inappropriate storage, mixing of chemicals and inappropriate handling. Inappropriate management of chemicals could result in fires and/or explosions affecting health and safety of employees and communities, as well as pollution of the environment;
- **Loading of final product:** Incidents during loading include mechanical hazards from moving machinery; fire in the packing material; exposure to noise; exposure to hot material;
- **Community drownings:** Incidents related to community drownings in mine ponds;
- **Tailings storage facilities**: Structures could fail such as due to long length of slope and steep slope angles. Accidents would result in injury or loss of life of employees or community members. Contributors to risk of failure could be inadequate management, inadequate drainage and control of the hydrological regime, lack of appreciation of mechanisms triggering failure. A further instance could be failure to detect unsatisfactory foundation conditions; and
- **Failure of dams**: Failure of water impoundment / attenuation / pollution control dams resulting in health and safety risks to both employees and downstream community, as well as potential environmental impacts.

Decommissioning:

- **Tailings storage facilities**: Structures could fail such as due to long length of slope and steep slope angles. Accidents could result in injury or loss of life of employees. Contributors to risk of failure could be inadequate management, inadequate drainage and control of the hydrological regime, lack of appreciation of mechanisms triggering failure. A further instance could be failure to detect unsatisfactory foundation/geological conditions; and
- **Failure of dams**: Failure of ponds / impoundments resulting in health and safety risks to both employees and downstream communities, as well as potential environmental impacts.

Examples of environmental and social risks which could potentially be generated by external factors and/or 3rd parties requiring emergency response from SRL are presented below.

3rd Party Risks:

- **Other developments:** Emergencies generated by other projects / adjacent land uses, such as other mining operations in the area in the future. These could affect the surround communities. A coordinated response would be required which if not implemented, could potentially affect SRL operations;
- **Security risks:** Potential sources of risk include possible illegal trespass into the active mining areas, riots, military crises, political instability and hostage situations. These potential risks indicate the possible need for large-scale evacuations and emergency response by SRL with appropriate security support;
- **Aviation:** Inadequate airport facilities and capacity to handle an emergency and large-scale evacuation could pose a risk. The limited availability of emergency flights to and from SR Area 1 poses further potential risk; and
- **Limitations of local capacity to manage and respond to emergencies:** Lack of local training and infrastructure for emergency response such as ambulances or firefighting equipment could result in the responsibility being placed on SRL to respond to all emergencies.

Major natural occurrences resulting in emergencies:

- **Major rain events on site or flooding from upstream:** Flooding of the SR Area 1 has the potential to affect the safety of employees and communities, and could result in overtopping / failure of the ponds / impoundments and associated infrastructure. This could increase the severity of downstream flooding resulting in health and safety risks; and
- **Fire from surrounding areas:** There is the potential for risk of fire spreading to the site, particularly during the dry season when extensive slashing and burning is undertaken by community members. Lack of firefighting equipment in surrounding areas could result in the responsibility being placed on SRL to respond to all fire related emergencies.

5 Communications

Effective communication systems are critical to successful emergency response.

5.1 Internal communications

The internal communication system is used to alert workers to danger, convey safety information, and maintain site control. Radios or mobile telephones are used when work teams are working away from the main communication system. The internal system consists of alarms or short signals that can easily be conveyed by audible signals. Training on the internal communication system will be provided to all employees as part of their employee orientation program.

5.2 Communications during an emergency

During an emergency, the dispatch station at the Plant Site and Mobimbi should be contacted immediately. Information should be transmitted from the dispatch station and the security stations to the rest of the mine site. Both the Plant Site and Mobimbi security gates are manned 24 hours a day by on-site personnel. The main security stations are equipped to handle all radio and telecommunications calls in the case of an emergency. The site is also equipped with a satellite phone that is capable of direct international communication. In the case of an emergency a prompt notification of appropriate individuals should be done immediately. Such individuals to be notified, as appropriate may include, but are not limited to:

- CEO;
- COO;
- Operations Manager;
- EHS Manager;
- Security Contract Manager;
- Chief Medical Officer;
- ERT;
- Other Managers;
- SRL Executive Management;
- Sierra Leone governmental agencies;
- Community Leaders; and
- Family Members.

In the event that there is a need for the timely and rapid notification of local communities, the first responder will immediately contact the EHS Manager who will immediately contact the COO and the key management team. This will trigger the appropriate emergency notification system that has been developed by the EHS Manager (Section 3.1.3 above). An announcement will also be made over all radio channels stating which channel will be designated as the channel for this emergency, and stating that non-emergency communications on this channel will be discontinued. This reporting scheme will be code dated to keep control of copies and to assure that up to date revisions are in place.

5.3 Communications with the public

The EHS Manager will be responsible for all site and local communications with the public. As required, meetings will be held to disseminate information related to on-site emergencies. Local residents, community leaders, other stakeholders, and non- governmental agencies will be contacted as appropriate and invited to attend these meetings. The EHS Manager will coordinate with the COO to brief the CEO on the incident and advise on what information should be released to the public,

government officials and other interested stakeholders. The CEO or his designate will be responsible to inform the appropriate parties at the national level.

In providing information to the public, the EHS Manager, the COO and the CEO will provide information on the following:

- Description of the event;
- Identification of the population that might be affected;
- Description of any injuries and disposition of those involved in the accident;
- Identification of any existing hazard;
- Description of precautions taken to limit future risks;
- Identification of water source contaminated (if any);
- Description of mitigation measures that are proposed or have been taken to correct the problem; and
- Contact information.

SRL will also establish waiting and briefing areas for family / relatives of those involved in serious accidents. Food and a sitting / sleeping area will also be provided to members of the family and relatives as appropriate.

6 SRL response to emergencies

SRL's response to emergencies is dictated by the category of the emergency.

6.1 Categories of emergencies and emergency response responsibilities

Emergency situations will be classified as Level 1, Level 2 or Level 3 based on the severity as determined by EHS Manager. These levels and associated responses are presented below.

Level 1 (shift response)

A Level 1 emergency is a situation that can be handled by SRL personnel on shift under the direction of the Supervisor in charge. The Shift Supervisor on duty will coordinate the emergency response for level 1 emergency such as minor spills, electrical sparks / fires, sudden uncontrolled release of energy forms etc.

Level 2 (in-field response)

A Level 2 emergency is a situation that extends beyond the control, scope and capabilities of the Supervisor in charge, and requires assistance from others within the field plus the senior site Management. This level of emergency will automatically activate the SRL ERT.

Level 3 (external response)

A Level 3 emergency is an incident that has major economic, governmental, public welfare or safety impact outside SRL. In the event of a Level 3 emergency the Emergency Coordinating Officer (ECO), who is likely to be a senior police officer or a senior fire officer depending on the circumstances, would be mobilized. The CEO will coordinate response efforts with the government and external agencies to determine appropriate action and utilize available resources.

6.2 ERT support

Additional specialist support may be required to meet specific response needs. Department Managers should ensure that:

- There is a site-specific emergency evacuation plan;

- An emergency assembly point is demarcated, maintained and ready for occupation in case of an emergency; and
- Within the work site and department there is always emergency equipment (firefighting equipment, first aid equipment, etc.) in good condition.

6.3 General emergency response procedures

The following general guidelines pertain to the general treatment of an emergency:

- Assess the size and severity of the emergency;
- Avoid danger to yourself, others, and the environment;
- Prevent further loss of material or damage to equipment, if this can be done safely; and
- Report the emergency to the dispatcher at the site, who will contact medical, safety and senior management at the SRL site.

In general, upon notification of an emergency, all executive team members will report immediately to their designated posts unless informed differently upon receiving the initial call. On arrival, they will:

- Review all the available information to have a clear and complete understanding of what is involved in the incident and the actions taken so far;
- Confirm that all persons have been evacuated to a place of safety and confirm that no persons are unaccounted for;
- Confirm isolation or shutdown procedures are being undertaken as required;
- Deploy manpower, equipment and facilities as needed;
- Determine and implement the control requirements;
- Implement other SRL emergency policies and procedures as needed;
- Assist the EHS Manager with any additional information, ideas, or in any other way requested; and
- Remain at their designated posts until released from assigned post or duties.

In addition to these general procedures, more detailed procedures have been developed for a number of different types of emergencies. It is noted, however, that common sense and good decision-making will still be required in responding to any emergency. Emergency response procedures for specific emergencies are provided in the following sections. Table 6-1 outlines the procedures that will be used for the different kinds of emergencies that will occur in SRL operational areas:

Table 6-1: Procedures for various emergency

1) General response to Emergency		
Note: An emergency drill will be conducted on a quarterly basis. This emergency drill will vary for the various emergency situations.		Departmental Manager
a)	In all emergencies the first point of contact must be the Security Control Room, which will ask prompting questions and advise of the appropriate action to be taken.	All
b)	The Security Control Room will be responsible for co- coordinating responses to the reported emergency as per specific identified emergencies.	Supervisors, Control Room
c)	If and when necessary, assistance will be provided by local authorities and / or other companies as per emergency telephone list.	Emergency Services
2) Fire		
a)	The discoverer will attempt to extinguish the fire (as per training and only if it is safe to do so). If he/she cannot extinguish the fire within 60 seconds he/she will retreat and notify Area Supervisor / manager. The Area Supervisor will notify the Senior Health and Safety Supervisor who will alert the ERT.	Discoverer
b)	Immediately notify Security Control Room and answer all the questions asked	Discoverer

	thereafter Security Control Room will advise what to do.	
c)	The Security Control Room will call emergency services and escort them to the area where the fire is.	Control Room
d)	Stay calm.	All
e)	Close all windows and doors but DO NOT LOCK.	All
f)	DO NOT try to collect personal belongings.	All
g)	All personnel will report to the assembly point designated for the area they are in, at the time and WAIT for further instructions and roll call.	All
h)	The most senior person present at the time for the designated area will be responsible for listing all personnel present at the designated assembly point.	Senior personnel
i)	Apply first aid where applicable.	All
j)	Once the list is compiled the senior persons for the designated assembly point must verify that everybody on the list is counted.	Senior personnel
k)	Any person/s not accounted for on the list, must be reported to the ERT via the Security Control Room.	Senior personnel / Control Room
3) Pollution and / or Chemical Spillage		
i. Spillage in Bunded Areas		
a)	All chemical spillages shall be reported to Security Control Room. Security will notify the EHS Manager, who will render assistance	Control Room
b)	At bonded fuel / oil / chemical storage areas, where a leak has resulted in an accumulation of spilt material within a bund, the spillage shall be pumped into hazardous materials containment drums, which shall be removed for treatment and/or disposal as may be appropriate.	Department Managers
c)	The remaining contaminated material in the bund shall be cleaned out with an absorbent material.	Department Managers
d)	The contaminated absorbent material will be disposed of in a hazardous waste bin / skip.	Department Managers
e)	Periodically the spill residues need to be cleaned with an appropriate degreaser.	Department Managers
ii. Spillage on Soil		
a)	The area of spillage needs to be contained, as soon as possible. Absorbent material should be applied to the area urgently to soak up as much as possible of the spilt material.	Department Managers
b)	The contaminated absorbent material needs to be collected and disposed of. The contaminate soil should be handled as follows: - If the spill was contained and the contaminated area is small, the contaminated soil should be scraped off and be treated or disposed of as hazardous waste; and - If the spill occurred over a big area and wasn't contained or cleaned soon after the spill, it is recommended that bio- remediation is done on the contaminated soil. Alternatively, the soil should be removed until no more contaminated soil is visible and treated or disposed of as hazardous waste.	Department Managers
4) Flooding		
a)	The discoverer shall report to the Security Control room, immediately.	Discoverer
b)	Security Control will inform managers of affected areas, the environmental & safety departments.	Control Room
c)	The affected Managers or designate will notify immediate downstream users / community members, and the environmental coordinator or environmental officer to take stream water samples	Department Managers
d)	Should the rainfall monitoring indicate that regional flooding can be expected, the affected managers will co-ordinate the appropriate action plan which may include:	Department Managers

	- Evacuation of people; - Movement of machines to safe areas; - Monitoring of dam / stream levels and qualities; and / or - Excavate emergency cut-off trenches.	
5) Civil Disturbance Situation (e.g. armed attacks, hostage situations, labour unrest)		
a)	Immediately notify the security control room.	Observer
b)	The Security Control Room will inform Human Resources (HR), Community Affairs Department (CAD) and EHS Department.	Control Room
c)	In case of labour or community unrest, the security control room will inform the managers, HR personnel and Safety personnel.	Control Room
d)	In case of an armed attack the security control room will notify as soon as possible (ASAP).	Control Room
e)	In case of a hostage situation the operation control room will notify ASAP.	Control Room
f)	Await the arrival of the responsible emergency response personnel for instructions on how to manage the situation.	Control Room

6.4 Emergency response checklist

A set of checklist items that need to be addressed as part of any emergency response has been developed for the SRL site based on guidelines developed by the United States (US) Mine, Safety, and Health Administration[1]. These checklists will be used by SRL personnel in the case of mine emergency, and are organized according to the following categories:

- Notification;
- Shutdown operation;
- Security and site monitoring;
- Security Control Room (i.e. as a command centre);
- Communications;
- Medical arrangements;
- Acquisition of equipment, materials, and services; and
- Information.

These checklists have been included in Appendix A.

6.5 Accidental spills or releases

A chemical inventory and map showing storage locations will be prepared to identify all storage tanks located at the SRL site. The inventory will include the following information:

- Location of storage tanks;
- Type / make of the tank;
- Tank storage capacity;
- Compatibility charts; and
- Product contained in the tank.

All above-ground storage tanks will be equipped with spill prevention equipment. Above-ground tank equipment will have adequate secondary containment. Inspections will be performed as part of the area foreman's shift reports. Such inspection will occur on at least a monthly basis to evaluate the integrity of tanks, piping, and containment structures.

Below-ground storage tanks will also be designed to limit the potential for accidental spills. All

[1] Source: Critical Item Checklist for Mine Emergencies - https://arlweb.msha.gov/techsupp/pshtcweb/checklist.htm (accessed March 2018).

below-ground tanks will be equipped with overfill/spill buckets on the fill line, annual leak testing on all non-consumptive tanks, and regular reconciliation of volumes in both consumptive and non-consumptive tanks.

6.5.1 Fuel and bulk oil storage facilities

The Financial Manager is responsible for the fuel and oil storage facilities. The Financial Manager will assign personnel to inspect the fuel and oil storage facilities as part of their normal duties of dispensing and tracking fuel consumption. Above ground storage tanks will be visually inspected for leaks, damage, or unusual conditions. The Financial Manager will keep an inventory of inputs and outputs to each tank, and will reconcile the balance on a monthly basis to detect significant losses.

Response procedures

In the event that a leak, spill, tank rupture, or other accident associated with the fuel and oil storage areas, the following procedures will be implemented:

- Avoid danger to yourself and others (i.e., stop working, shut off power sources and any moving machinery and equipment, extinguish smoking materials or other spark or flame-making devices, alert others in the area of danger);
- Stay upwind of the emergency scene;
- Identify the product that has been spilled, as well as immediate potential hazards (such as possible contact of the spilled material with equipment or other chemicals, or entry into a waterway);
- If possible to do safely, prevent spill from entering waterways;
- Assess spill quantity and characteristics;
- Notify the Security Control Room with as much information as possible; and
- Arrange for a safe and timely clean-up of spilled material by contacting the EHS Manager and the appropriate Mining or Processing Manager.

Reporting procedures

The EHS Manager is responsible for keeping the following records associated with spills, leaks, ruptures, or other upsets in the fuel storage system or bulk oil storage system. Such records shall document:

- Person or people involved;
- Date, time, and location of discharge;
- Description of the situation and site conditions;
- Identification and estimated volume of discharged solution;
- Actions used to control the extent and severity of the discharge;
- Final deposition of discharged solutions;
- Documentation of clean-up actions taken and final disposition of contaminated material; and
- Description of environmental effects from the discharge.

All records of spills will be documented according to Spill Reporting Procedures (Appendix B) using the Spill Report Form (Appendix C). Completed forms will be submitted to the EHS Manager for filing. Records will be periodically reviewed to verify that proper corrective actions have been taken, including remediation of contaminated areas and replacement, repair, or maintenance to storage systems.

6.5.2 Chemicals, reagents or hazardous materials

A number of chemicals, reagents, and hazardous materials will be stored or generated on site. A standalone Chemical Management Plan has been produced which is also an appendix to the March 2018 ESHIA / ESHMP Report and will form part of SRL's HSEC Management System.

6.5.3 Spill clean-up equipment

The following emergency spill equipment should be kept in a cabinet or other accessible area:

- Absorbents;
- pH paper;
- Tools (including screwdriver, crescent wrench, pliers, and knife);
- Large plastic bags;
- Floor and hand broom;
- Dust pan;
- Mop, bucket, and wringer;
- Mercury clean-up kits or sulfur flour;
- Shovels;
- Neutralizer for acids and bases;
- Empty open-top drums;
- Overpack drums;
- Labels and permanent ink markers; and
- Caution tape.

This equipment should only be used for emergencies and should not be used for any other purposes. When these materials become depleted, they will be restocked as soon as possible.

6.6 Fire and explosions

Bulk fire protection will be provided from the plant water distribution system at the dredge and wet concentrator plants. This system will be connected to a hydrant distribution system for firefighting in the plant and administration area. Firefighting equipment will be maintained on site. In high-risk areas such as control rooms, laboratories, and mineral processing areas, and in mobile equipment, chemical fire extinguishers will be located in convenient locations.

The Chief Engineer will be responsible for keeping fire suppression equipment in good working condition. The EHS Manager will be responsible for inspecting and ensuring that chemical fire extinguishers are properly charged and are in good working condition.

The incidence of fires or explosions is expected to be rare. However, smoke detection equipment should be considered in high-risk facilities and areas heavily used by personnel such as common areas, offices, and residential areas. Suitably trained employees will be required to perform periodic inspections of high-risk areas and equipment to ensure that potential hazards are corrected.

6.6.1 Preparedness

The Senior Health and Safety Supervisor, under the supervision of the EHS Manager, will organize and train an ERT to respond to fires, explosions, accidents, and injuries. The ERT will act as first responders and will be trained in first aid, fire rescue, evacuation, and working in closed and/or oxygen deficient space. The fire rescue training will include annual training sessions comprised of the following:

- Activating the fire suppression system;
- Performing drills to put out fires; and
- Responding to practice rescue scenarios.

6.6.2 Response procedure

In the event of a major fire or explosion, the following procedures should be followed:

- Assess the location and severity of the situation;
- Extinguish the fire if it can be accomplished without being exposed to potential hazards;
- Activate the emergency warning system;
- Restrict access to the area;
- Do not take health or safety risks by entering unstable or fire areas;
- Notify the EHS Manager and ERT according to established protocols; and
- Assist in extinguishing the fire and securing the area only under the direction of the ERT.

The emergency response procedure will be implemented upon detection of a fire. Firefighting equipment and an emergency response vehicle equipped with firefighting equipment (provided by SRL) will be dispatched to the area immediately.

Fire and explosions can cause oxygen deficient atmospheres. These events can also generate poisonous gas as part of the combustion process. Training programs will be performed to educate employees of the dangers associated with entry into a burning area. Also, hazards associated with other structures, such as fuel tanks and chemicals may cause additional unexpected fires or explosions.

6.7 Accidental spills or releases from barges or boats

SRL owns barges that will be used to transport materials to and from the site using the network of streams and rivers that provide access to the site. Contractors who ship materials to and/or from the site will be responsible for developing their own emergency response and contingency procedures as part of their contractual agreements. Emergency response procedures for accidental spills or releases on barges include procedures for both preventative / preparatory measures and action procedures. Preventative measures include the provision of safety equipment, development of chemical inventories, performance of inspections, provision of training, development of contingency plans, and maintenance of records.

Barges and boats will be maintained in good working condition. All boats will be equipped with a sufficient number of life preservers that is enough for every passenger on board. Boats will also be equipped with a bilge pump to facilitate bailing of water. Inventories of all hazardous materials, including their respective Safety Data Sheets (SDSs), will be kept on file at the mine site. Documentation of proper first aid and emergency medical treatments will also be maintained. The MSDSs and emergency medical treatment information will accompany materials during shipping and handling so that they are available for the barge crew.

Barges and canals associated with the transport of hazardous materials will be subjected to the following regular inspections:

- Tanks containing hazardous materials will be inspected weekly for leaks and overall soundness;
- The integrity of shipping containers will be evaluated at least once a year by an engineer;
- Tank inventories will be taken daily using a sounding stick and conversion table;
- Valves, gaskets, flanges will be visually inspected weekly and monitored for leaks or stains;
- Spill prevention equipment will be inventoried monthly or after use and a list of items needing replacement will be submitted to purchasing; and
- Canal water at the point of exit will be visually monitored daily for evidence of leaks (e.g., films and discoloration).

Spill prevention briefings for operations personnel will occur monthly. Employees will be informed of where spill response equipment is kept and how it is to be deployed, where the list of contact names is kept and notification procedures, and spill response procedures.

6.7.1 Response procedures

Personnel operating the barges will be trained in emergency responses. Personnel will be properly instructed in the operation and maintenance of all equipment used to prevent oil and hazardous material discharges, as well as the applicable spill prevention regulations. PPE should be adequate to respond to a worst-case scenario with the most hazardous chemical. Barges will be equipped with radios so that communication to the site is available in the event of an emergency.

A contingency plan will be developed to determine likely scenarios of where accidents are most likely to occur. Scenarios will be evaluated for the potential risk of failure, leakage detection, maximum release, notification and response time, and potential pathways to sensitive ecosystems. For each scenario, a plan will be developed to determine the most effective way of responding to the spill. A decision tree should be developed to help evaluate response measures.

Spill containment materials and personal protective equipment will be kept on the barges for use in the event of an emergency. Procedures for using, inspecting, testing, and maintaining the emergency response equipment will be developed once spill containment equipment is acquired.

Containment equipment may include the following:

- Floating booms;
- Pneumatic barriers;
- Absorbent pads;
- Pumps; and
- Impermeable holding ponds

Equipment should be adequate for controlling the entire volume of material spilled. The need to capture and treat contaminated birds, mammals, or other organisms will be evaluated on a case-by-case basis. In the event that treatment is required, wildlife will be captured and to the extent practical treated by a trained wildlife specialist or veterinarian. The contingency plan will focus on reducing potential risks to human health and the environment by controlling spills in a timely manner. The ERT will be immediately dispatched to the spill location. Where practical, actions will be taken by the barge crew to contain the spill using berms, barriers, absorbent pads, on other control devices. However, first responses to emergencies on barges and ships will most likely be handled by the crew themselves. As such, these employees will be issued special training in responding to emergency water situations.

- The spill containment contingency plan will include the following steps and guidelines;
- The spill should be approached with caution. The area should be evacuated and isolated except for the response team;
- Identify hazards. Evaluate all available information and consult the recommended guide to reduce immediate risks; and
- Situation Assessment. The following items should be considered:
    - Is the emergency related to a fire, spill, or leak?
    - What are the weather conditions?
    - At what location within the canal or river is the barge?
    - Who/what is at risk - people, property or the environment?
    - What actions should be taken: Is an evacuation necessary?
    - Is diking or blocking of the canal or river necessary?
    - How manoeuvrable is the barge?
    - Will moving the barge increase the risk of further spills?
    - Is there risk of the barge sinking?
    - What resources (human and equipment) are required?

The emergency response will include the following:

- Locate chemicals;

- Equipment deployment;
- Chemical removal;
- Temporary storage of removed chemicals; and
- Mechanical recovery for disposal or re-processing.

6.7.2 Reporting procedures

Spill information should be made available immediately to other relevant personnel and group. The following information will be provided:

- Location of spill, land and water;
- Source of spill;
- Time of spill;
- Estimated volume of spill;
- Nature and potential danger of spilled material;
- Anticipated movement of spilled material;
- Responsible party name, address, phone number;
- Action already taken; and
- Weather conditions at spill site.

A preventative measure will be the tracking spill histories. Records will include a description of any observed spill and the corrective action taken. A follow-up report will also be generated to make recommendations on future preventative measures. The follow-up report will be integrated into operation and emergency response plans.

6.8 Flooding

Based on the location of the mine, there exists some potential risk of flooding and structural damage to mine site facilities and communities downstream. To limit potential for flooding, the following procedures should be implemented prior to the beginning of the wet season:

- Maximize storage capacity in the dredge ponds, lagoons, and other water supply and retention areas; and
- Ensure that all spillways, culverts, dewatering structures and drainage ditches are free of obstructions and are structurally intact.

After heavy rainfall events, a site-wide inspection should be conducted to identify and mitigate any structural impacts to embankments, dams, and storm water diversion channels. An emergency notification system will be developed to alert downstream residents in the event that there is any evidence that would suggest an elevated risk of flooding due to such things as heavy rainfalls or embankment structural concerns. Such a notification system would include public consultation to inform residents of response protocols and a notification network of neighbour to neighbour contacts so that all residents can be advised in a rapid and efficient manner. Residents will be advised on what is the quickest route from their homes in order to get to safe ground. The EHS Manager will be responsible to develop this notification system.

6.9 Medical emergencies

The ERT will respond to fires, explosions, and medical emergencies. The team will be prepared to perform emergency first aid treatments, including cardiopulmonary resuscitation (CPR) as required. The ERT will be trained as first responders in the disciplines of first aid, CPR, fire rescue, evacuation, and in working in closed or oxygen deficient spaces. The Team will also be trained in transferring accident victims to local medical facilities.

6.9.1 Response procedures

In the event of a medical emergency or fatality, the following procedures should be followed:

- Do not take health or safety risks by entering a dangerous or unstable area;
- Assess the location and severity of the situation;
- Address life threatening issues such as lack of pulse, blocked air passages, or severe bleeding using basic first aid techniques;
- Notify the Senior Medical Officer, the EHS Manager, and the ERTs according to established protocols; and
- Assist in securing the situation and transporting the victim under the direction of the Senior Medical Officer and the ERT.

Emergency response procedures will be implemented immediately upon the detection of an accident or fatality. First responders will notify the dispatch operator who will immediately dispatch an SRL emergency response vehicle equipped with first aid equipment to the scene of the accident.

6.9.2 Notification and reporting

The EHS Manager is responsible for keeping the following records:

- Person or people involved;
- Date, time, and location of accident;
- Description of the situation and site conditions;
- Measures taken to prevent its reoccurrence;
- Actions used to control the extent and severity of the problem; and
- Final disposition of the patient.

The EHS Manager is responsible for data management, record keeping, and reporting to the appropriate regulatory authorities and stakeholders.

6.10 Social unrest

SRL has developed a Public Consultation and Disclosure Plan that includes procedures for dissemination of information to the public, stakeholders, and non-government organizations. The plan also includes a mechanism for grievances, so that public concerns related to the project can be addressed through a formal grievance process.

Despite this proactive approach, social unrest at the mine could occur for a number of reasons outside of SRL's control. Subversive activities by workers or non-workers could develop and may result in violent or non-violent protests, attacks on mine personnel, property damage, or even hostage taking. A comprehensive security and human rights risk assessment shall be undertaken to identify possible scenario's and mitigation / control measures.

The Contract Security Manager oversees an on-site security team that will be used to maintain the security of the mine site. This team will also work closely with local government authorities (police, military) to maintain the security of the mine area. In addition, a response program to address these issues, in cooperation with the Sierra Leonean government, will be developed for the SRL site.

This plan shall also outline how employee's and community's human rights are to be protected during these types of events, including:

- That the forces deployed to a situation are appropriate, competent and proportional to the threat;
- That the rights of individuals are not violated while exercising the right to exercise freedom of association and peaceful assembly, the right to engage in collective bargaining, or other recognised human rights;
- Clear rules regarding powers of arrest are in place;

- That the use of force will be applied only if absolutely necessary;
- That the force applied shall be proportional to the threat; and
- That medical assistance be available to all injured persons;

In the event of a confrontation with mine employees or personnel, the Contract Security Manager will be immediately contacted. The security team will, under the direction of the Contract Security Manager, implement response protocols based on pre-determined plans. These plans and protocols are not outlined here in order to maintain confidentiality and assure that such response protocols can be undertaken without counter-plans having been developed that would undermine the effectiveness of the response.

7 Transportation

The majority of materials are shipped to the mine from Freetown. Most travel to and from Sierra Leone is also provided through Freetown. Available medical facilities located between the mine site and Freetown will be identified. Local routes to and from medical facilities will be maintained so that they are accessible year-round.

7.1 Transportation vessels

All land transportation vehicles will be equipped with a first aid kit and fire extinguisher. Transportation vehicles will also be equipped with a radio system or cellular phone that has an appropriate range to request assistance, if required. Mobile land vehicles will be maintained in good working condition and will be equipped with functional seat belts. Boats will also be maintained in good working condition. All boats will be equipped with a sufficient number of life preservers that is enough for every passenger on board. Boats will also be equipped with a bilge pump to facilitate bailing of water.

7.2 Transportation accidents

Personnel and materials will be transported to and from several locations to the SRL site. As transportation incidents could occur at a number of locations, the specific emergency response will vary depending on location. In general, any transportation incident should be reported to the nearest dispatch. The first responder should report as many specifics about the incident as possible to the dispatcher.

In the event that an accident or unsafe condition is encountered during transportation, drivers will be instructed on plausible scenarios that may be encountered and what to do in those instances. Personnel should stay a safe distance from vehicles in the event of a fire.

7.3 Transport of hazardous materials

All chemicals, reagents, other hazardous materials, and materials contaminated by hazardous materials will be transported to their destination in designated shipping containers. The materials will ultimately be stored in an appropriate storage facility that is designed for safe storage of hazardous materials and wastes. All suppliers of hazardous materials will be required to have their own emergency response procedures in place as part of their contractual agreements. Supply contractors will be required to provide the following information:

- Environmental liability insurance, if available;
- Evidence of employee and driver training in safety and emergency response;
- Appropriate plans for spill prevention, control, and clean-up for equipment and vehicles;
- Sensitivity maps to identify environmentally sensitive areas or areas with potential social or public safety issues along drive routes;

- Contingency plans for responding to plausible emergencies, including response equipment and third-party contacts to respond to emergencies; and
- Prior to finalizing contracts with potential suppliers, supplier's emergency response and contingency plans will be reviewed in compliance with corporate, local, national, and international standards.

8 Additional emergency response procedures

8.1 Hazard recognition

Employees will undergo formal safety training and task training by experienced personnel. This training will teach employees techniques in hazard identification and recognition. The training will also identify potential hazards associated with the mine site and their occupations. Following training, employees will be responsible for identifying potential hazards as part of their normal job requirements. Rapid recognition of potentially hazardous situations can avert an emergency. Weekly safety meetings will be held among all staff to discuss a broad range of health and safety topics, but will periodically address the following:

- Specific tasks to be performed;
- Time constraints;
- Hazards that may be encountered, including their effects, how to recognize symptoms, and other danger signals; and
- Emergency procedures.

Each safety meeting will discuss a specific topic or issue. The meetings will also serve as a reminder of potential occupational hazards. By limiting discussions to a focused topic, the meetings are expected to require less than 15 minutes.

8.2 Emergency response training

The Senior Safety Advisor will coordinate emergency response training. The ERT will participate in annual training at the mine site to ensure that all members are trained in equipment use and emergency response methods. The ERT members will be trained in transportation of hazardous materials, fire-fighting, spill control and mitigation, first aid, and personnel rescue techniques. On site emergency personnel, who have roles in addition to their ordinary duties, will have a thorough understanding of emergency response procedures. Training will be directly related to their specific emergency response roles, and will include:

- Emergency chain-of-command;
- Communication methods and signals;
- How to call for help;
- Emergency equipment and its use;
- Emergency evacuation while wearing protective equipment;
- Removing injured personnel from enclosed spaces; and
- Offsite support and how to use it.

Emergency personnel will receive training in first aid and CPR and will practice hands-on rescue techniques on at least an annual basis. Training will also include recognizing and treating chemical and physical injuries and heat stress.

8.3 Employee and contractor training

The ERT, under the responsible charge of the EHS Manager, will provide safety and emergency response training to all staff. The training will identify site-specific hazards and hazards associated

with mines in general. The training will also review standard operating procedures, use of protective equipment, signalling an emergency (the alarm to be used, how to summon help, what information to give and who to give it to), evacuation routes and refuges, reporting protocol when an alarm sounds, and other general safety procedures. Emergency response training will also be provided to train staff on emergency response procedures, chains of command, and responsibilities of key individuals.

Safety, emergency response, and first aid training will be provided at the time of hire. All staff will also be required to attend annual refresher courses. Contractors that perform any work on site will be required to show evidence of appropriate health, safety and emergency response training. SRL will develop an orientation program to advise contractors and site visitors on basic health, safety and emergency procedures such as emergency signals and evacuation routes.

8.4 Emergency resources finance and emergency funds

Considering the quantity, response time, capability, limitations, and cost of emergency response resources, for both site-specific emergencies, and community or regional emergencies, a mechanism will be provided for funding emergency activities.

8.5 Business continuity

For the period immediately following emergency responses, business continuity and contingency measures will need to be implemented. These will include:

- Identifying replacement supplies or facilities to allow business continuity following an emergency. For example, alternate sources of water, electricity, and fuel are commonly sought;
- Using redundant or duplicate supply systems as part of facility operations to increase the likelihood of business continuity; and

  Maintaining back-ups of critical information in a secure location to expedite the return to normal operations following an emergency.

9 Conclusion

SRL will ensure that all of the emergency response measures outlined in the ERCP are adhered to. An on-site and verification audit program will be put in place to define scheduling, conducting, and documenting of internal and external audits regarding handling of emergency procedures. Audit findings will be classified in accordance with the corporate rating procedure. The EHS Manager will review final review audit findings and ensure that all non-conformances are dealt with expeditiously. Systems will be put in place to:

- Avoid recurrence of non-conformances;
- Ensure timeous actions;
- Perform follow ups with site management to ensure that non-conformances are corrected and recommendations are implemented within required timeframes;
- Report any areas of non-compliance to corrective actions to the COO; and
- Ensure methodical record-keeping.

Appendices

Appendix A: Emergency Response Checklist

The Mine Safety and Health Administration (MSHA) prepared critical item checklists to be completed during a mine emergency. SRL personnel will complete these checklists during a mine emergency.

Notification

1) Activate notification procedures for emergency contacts;
2) Notify key mine officials;
3) Notify key agency officials;
4) Notify fire/rescue officials;
5) Notify neighboring residents;
6) Notify family members;
7) Notify support medical personnel.

Shutdown Operation

1) Assemble employees.
2) Debrief witnesses.
3) Account for all persons known to be at mine.
4) Assign employees to tasks.

Security and Site Monitoring

1) Establish security – all access roads and routes;
2) Establish check-in/check-out system for all authorized persons;
3) Assign site monitors and shift rotation schedule;
4) Establish parking and staging areas.

Command Center

1) Follow mine emergency plan
2) Setup a mine emergency command system
3) Staff emergency organization
4) Delegate authority and assign duties
5) Give appropriate orders
6) Brief arriving personnel
7) Review all mine maps, and coordinate reference points to all maps
8) Make extra copies of all maps
9) Follow appropriate safety precautions
10) Request/dispatch additional persons to area as required
11) Take appropriate safety precautions
12) Establish a shift rotation schedule for command personnel

Communications

1) Relay information to the command center;
2) Establish external communications;
3) Monitor and log all communications.

Medical Arrangements

1) Arrange for ambulance and medical services;
2) Setup temporary morgue (if required).

Acquisition of Equipment, Materials, and Services

1) List all equipment on mine and on the surface;
2) Locate and check onsite equipment for possible use;
3) Arrange for heavy equipment, if required;
4) Arrange for portable radios;
5) Provide transportation for equipment;
6) Obtain personal protective equipment;
7) Establish waiting and briefing area for family/relatives (provide food and sitting/sleeping area).

Information

1) Appoint a spokesperson for all entities;
2) Brief family members on a regular schedule;
3) Brief local residents on a regular schedule.

Appendix B: Spill Reporting Procedures

To report a spill, call the dispatcher and provide the following information:

1) Person and/or department responsible;
2) Contact phone number;
3) Substance spilled;
4) Location of spill;
5) Approximate amount spilled;
6) Possible cause of the spill;
7) Clean-up activities under way;
8) A follow-up written report will be required to document the spill event; and
9) If you need help in cleaning up the spill, contact the Environmental, Health and Safety Manager for assistance.

Appendix C: Spill Report Form

Date: _____ Time: _____

Name and Contact Number:

_____

Supervisor and Contact Number:

_____

Department:

_____

Nature of Incident:

_____

_____

_____

Was Medical Attention Required?

_____

If so, describe

_____

_____

_____

_____

Identity of Released Chemical (or its components):

_____

Medium or Media into which Release Occurred:

__ Air __ Land __ Sewer __ Building or Room Other

_____

Duration of Event or Release:

_____

Estimated Quantity of Material Released:

_____

_____

_____

Description of Incident:

_____

Any Actions taken to Clean-Up Release:

_____

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