

Part III Annex F

# Spill Prevention, Control and Containment Plan

Version 2.0

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## Yara Dallol Potash Project, Danakil Depression, Ethiopia

Document Ref.	Prepared By	Reviewed By	Date Submitted to Yara Dallol BV for Review
0224244_V1.0_SPCCP	Dieter Rodewald	Mike Everett	November 2014
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## LIST OF ACRONYMS

Abbreviation	Full Definition
ANRS	Afar National Regional State
APELL	Awareness and Preparedness for Emergencies at Local Level
CHSSMP	Community Health, Safety and Security Management Plan
ERP	Emergency Response Plan
ES-MS	Environmental and Social Management System
ESIA	Environmental and Social Impact Assessment
IFC	International Finance Corporation
IMCP	Integrated Mine Closure Plan
KPIs	Key Performance Indicators
MSDS	Material Safety Data Sheets
PS	Performance Standard
SOPs	Standard Operation Procedures
SPCCP	Spill Prevention, Control and Containment Plan
UNEP	The United Nations Environment Programme
WAMP	Water Management Plan
WMP	Waste Management Plan

## DEFINITIONS

The following definitions are of relevance within this report:

- **Accident** - an unintended incident which results in injury to persons and/or damage to property, the environment, third party or which leads to production loss.
- **Emergency** - a situation where there is an immediate threat to communities, personnel or the environment.
- **Employees** - full time and part time employees of Yara Dallol BV (i.e. - salaries paid directly to individuals by Yara Dallol BV).
- **Incident** - a sudden unintended work related accident which results in - or has the potential for (near miss) - injury, and/or business interruption, and/or damage to property, the environment or a contractor.
- **Near Miss** - an unintended incident not leading to injury or damages, but which under different circumstances could have become an accident.
- **Site** - refers to the area in which the Yara Dallol Potash Project operates, including processing plant, evaporation ponds, tailings management area, solution mining area, staff living quarters, haul road through to the Port of Tadjoura, Djibouti, the Port of Tadjoura.
- **Yara Synergi Database** - a Yara Dallol BV database for registration of all incidents with injury of people, environmental incidents, incidents with property damage or loss of production and security breaches. Incidents are reported according to definitions and classification given in Yara TOPS 0-01 *"Reporting of Accidents, Near-miss Incidents, Sickleave, Environmental Incidents and Security Breaches"*
- **Contractors** - persons working for external companies (or employed by an employment agency) that are under contract to carryout for the unit, but not being part of the unit's workforce.
- **TOPS 0-01** - an existing Yara Dallol BV procedure titled *"TOPS 0-01 Reporting of Accidents, Near-miss Incidents, Sick Leave, Environmental Incidents and Security Breaches"*
- **TOP 0-02** - an existing Yara Dallol BV procedure titled *" Investigation and Follow-up of Accidents and Near-miss Incidents"*

Yara International is a leading global fertilizer company with sales of fertilizer to about 150 countries globally. As part of Yara International's overall upstream strategy, the company is exploring for suitable raw sources that can be developed and used as a source to Yara International's global fertilizer production and directly as finished product in its product portfolio. To complement these upstream processes, Yara International has recently started a subsidiary company, Yara Dallol BV, which is involved in the exploration and mining development of potash concessions in Ethiopia. These concessions are located in the Danakil Depression, Afar National Regional State (ANRS), Ethiopia. Yara International, through its subsidiary, proposes to develop a potash mine - the Yara Dallol Potash Project (hereafter referred to as the proposed Project) within these concession areas.

As part of the environmental approval process for the Project a suite of environmental and social management plans is needed to address the issues identified in the Environmental and Social Impact Assessment (ESIA). Several management plans have been developed to address impacts identified in the ESIA and are implemented as part of an environmental management system for the proposed Yara Dallol Potash Project.

Several activities associated with the Project (during the construction, operational and decommissioning/closure phases) require specific management to ensure that activities are appropriately controlled to prevent and mitigate unwanted outcomes. This Spill Prevention, Control and Containment Plan (SPCCP) has been developed to address the general requirements for management of unplanned spills of dangerous or hazardous materials during the Project life cycle. These may include spillages related to:

- Hydrocarbons (including diesel, petrol, greases, oils and other lubricants);
- Drilling chemicals;
- Hazardous chemicals (*viz.* paints, etc.); and
- Waste water, including sewage.

The following SPCCP presents a procedural framework for reducing the potential for spills, responding to such events and for monitoring operations to confirm that preventative measures are in place and followed. Furthermore, the procedures within include plans for addressing training, resources, responsibilities, communication and all other aspects required to effectively respond to such events.

### **1.1.1**

#### ***Policy Statement***

The development of this SPCCP has been guided by the Yara Dallol BV Health, Environment, Safety, Quality and Product Stewardship Policy, as set out in *Box 1.1*. This Policy is a high-level corporate statement of intent and

establishes the principles to be followed in the management of environmental and health & safety issues.

**Box 1.1**

***Health, Environment, Safety, Quality and Product Stewardship Policy Statement***

**COMPANY COMMITMENT**

Yara Dallol BV's aim is to establish sustainable growth and the creation of shareholder and societal value. Yara Dallol BV affirms to their stakeholders, including employees, customers and the public, it's commitment to continuously improve and reach standards of excellence in Health Environment, Safety, Quality and Product Stewardship through their operations.

**ENVIRONMENTAL POLICY**

Yara Dallol BV will manage their business in a life cycle perspective. In its operations, Yara Dallol BV will contribute to eco-efficiency by continuously improving energy consumption and reducing waste, emissions and discharges. Waste that is generated will be handled and disposed if safely and responsibly.

Yara Dallol BV will design their products and develop product applications to have the minimum adverse effect on the environment throughout their lifecycle.

**HEALTH AND SAFETY**

Injuries and occupational illnesses, as well as safety and environmental incidents, are preventable, and Yara Dallol BV's goal for each of these is zero. Yara Dallol BV will encourage their employees to adopt a healthy, safe life-style for themselves and their families.

Yara Dallol BV will be prepared for emergencies and cooperate with local authorities to establish and improve their emergency preparedness.

**1.1.2**

***Objectives***

Yara Dallol BV has existing procedures that deal with response management to incidents and/or risks associated with the environment, and more specifically with the accidental release of hazardous material, liquid or gas to air, water or ground. In addition to response management, Yara Dallol BV has procedures that set out the actions required for incident reporting, investigation and follow-up (these are described in further detail in *Section 4*). These existing procedures will be documented within the overall Environmental and Social Management System (ES-MS), and will be updated to include detailed spill prevention, control and containment.

The objectives of this SPCCP are as follows:

1. Protect the communities and the environment through the development of spill response and containment strategies and capabilities.
2. Structure a process to identify the sources of potential land contamination associated with construction and operational phases of the Project.

3. Categorise potential spill hazards.
4. Structure a process for rapid and efficient response to and manage hazardous material spills during the construction, operational and decommissioning and closure phases of the Project.
5. Identify and document management measures to prevent, control and mitigate spill events during all phases of the Project and at all operations and facilities associated with the Project.
6. Assign responsibilities for implementing the management measures; and
7. Describe verification, monitoring and reporting measures.

## 1.2 *PURPOSE AND SCOPE*

The construction, operation and decommissioning and closure phases of the Project will include activities that has the potential to result in spills to the environment. The SPCCP is aimed at defining –

- A proactive hazard identification so as to prevent (or lower the likelihood) of spill events; and
- The response process and responsibilities for managing these situations, thus reducing likelihood and severity of inadequate management.

This SPCCP is considered to be a “live” document and will need to be amended periodically in light of operational changes, learning experienced during its implementation and other activities that can affect the risk profiles.

Given that the detailed design of the Project is underway and not complete at this time, this SPCCP presents conceptual measures for spill prevention and control and outlines the framework for developing a more comprehensive SPCCP, which is to be completed prior to various stages of construction, operation and decommissioning/closure. The final SPCCP will require consultation with mine engineers and contractors and will be led by the Yara Dallol BV management team.

## 1.3 *LINKAGE TO OTHER ENVIRONMENTAL AND SOCIAL PLANS*

This SPCCP should be read in the context of the Environmental and Social Management System (ES-MS) (discussed in *Chapter 13 of Part I of the ESIA*), which has been structured to provide a vehicle for the integrated management of the suite of management plans described in *Part III*. These plans have been designed to address a broad range of social and environmental risks.

It is recognised that the ES-MS and associated plans are living tools that will be constantly updated to accommodate changing circumstances.

Specifically, this plan ties in closely with the Community Health, Safety and Security Management Plan (CHSSMP), (*Annex J in Part III*), the Waste Management Plan (WMP) (*Annex G in Part III*), the Integrated Mine Closure Plan (IMCP) (*Annex E in Part III*), the Water Management Plan (WAMP) (*Annex H in Part III*) and the Emergency Response Plan (ERP) (*Annex D in Volume III*). This is discussed in further detail below -

Management Plan	Overlap of this Plan with Content of Other Plans
<b>SOCIAL PLANS</b>	
Community Health, Safety and Security Management Plan (CHSSMP)	Undesired events and exposure to hazards has the potential to impact on individual's health and safety if onsite risks are not managed suitably.
<b>ENVIRONMENTAL PLANS</b>	
Waste Management Plan (WMP)	Management of all waste streams (including contaminated materials) produced by Yara Dallol BV must be in place to ensure protection to the communities and the environment.
Integrated Mine Closure Plan (IMCP)	The IMCP has reference with respect to evaluating and remedying potential contamination at the closure phase of the proposed Project.
Water Management Plan (WAMP)	The protection of water resources and monitoring of these with respect to contamination has reference.
<b>OCCUPATIONAL HEALTH, SAFETY AND RISK PLANS</b>	
Emergency Response Plan (ERP)	The ERP has reference with respect to the development of emergency response processes to ensure that health and safety of workers and protection of the receiving environment and communities is ensured.

In addition to the above, this SPCCP links with Yara Dallol BV's existing TOPS 0-01 and TOPS 0-02 procedures. Yara Dallol BV's TOPS 0-01 procedure describes the requirements for registration and reporting of incidents and near misses associated with accidental release of hazardous material, liquid or gas to air, water or ground. The TOPS 0-02 procedure describes the requirements for investigation and follow-up of environmental incidents and near miss incidents.

This SPCCP has been developed so as to compliment and makes reference to the requirements set out in these two procedures.



A summary of the legal requirements and standards relevant to the SPCCP are presented below.

## 2.1 NATIONAL LEGISLATION AND POLICY

The following Ethiopian regulation informed the development of this SPCCP:

### 2.1.1 *Prevention of Industrial Pollution Council of Ministries Regulation (159/2008)*

This regulation is directed to industry and in particular “factories”. The regulation does not provide a clear definition of “factories”; however, certain sections of the regulation can be deemed applicable to the proposed Yara Dallol Potash Project. These sections include the need for emergency response systems and the need for monitoring of environmental safety.

## 2.2 INTERNATIONAL FINANCE CORPORATION (IFC) PERFORMANCE STANDARDS

The following IFC Performance Standards are applicable to this SPCCP:

### 2.2.1 *Performance Standard 3 (Resource Efficiency and Pollution Prevention)*

IFC Performance Standard (PS) 3 aims to avoid or minimise adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities. Furthermore, the standard promotes more sustainable use of resources, including energy and water and aims to reduce project-related greenhouse gas emissions.

### 2.2.2 *Performance Standard 4 (Community Health, Safety and Security)*

IFC PS 4 aims to avoid adverse impacts on the health and safety of affected community during the project life from both routine and non-routine circumstances. Furthermore, the standard ensures that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimises risks to the affected communities.

The United Nations Environment Programme (UNEP) and Awareness and Preparedness for Emergencies at Local Level (APELL) requires that all projects will have an Emergency Preparedness and Response Plan that is commensurate with the potential risks of the facility and that includes the following basic elements:

- Administration (policy, purpose, distribution, definitions, etc.).

- General Facility information including location, primary and alternate emergency response coordinator, physical description of facilities, surrounding and underlying geology and groundwater, description of operations and processes, wastewater systems, facility outfalls, protection of surface waters and personnel responsible for the development of the contingency plan for the facility.
- Organization of emergency areas (command centers, medical stations, etc.).
- Roles and responsibilities.
- Communication systems (such as a notification flow chart).
- Emergency response procedures to be used as guidelines to follow when a spill, fire, explosion, or other catastrophic event causes a release of oil or other hazardous materials to the environment.
- Emergency response procedures to be used as guidelines to follow when there are spills in diked or containment areas, spills in un-diked areas, spills to on-site lakes/lagoons, spills on soil, spills to receiving riverbeds, unplanned releases of compressed gases, and releases from oil-filled electrical equipment.
- The identification and location of emergency response equipment, and emergency response contractors, as well as descriptions of the appropriate containment equipment to prevent spills from reaching water bodies.
- Emergency resources.
- Facility Evacuation Plan and diagrams.
- Training and updating requirements for facility operational and emergency response personnel.
- Checklists (role and action list and equipment checklist including an inventory of hazardous substances, wastes, oils, and industrial gases that have a potential for spills or accidental releases into the environment).

With respect to this SPCCP, Yara Dallol BV has the responsibility to ensure that adequate measures are developed and implemented by parties, including third parties, to prevent, control and contain spills associated with their activities.

Moreover, Yara Dallol BV have the responsibility for defining, communicating and monitoring the requirements of contracting third parties and suppliers operating under their control with respect to spill management.

The roles and responsibilities within Yara Dallol BV for the implementation of the SPCCP are presented in *Table 3.1*.

**Table 3.1** *Responsible Parties and Roles and Responsibilities*

Responsible Parties	Roles and Responsibilities
<b>Dallol General Manager</b>	<ul style="list-style-type: none"> <li>• Review monthly and annual spill reporting</li> <li>• Review spill response drill outcomes and work with Health and Safety Manager and Environmental and Social Manager to identify necessary improvements</li> <li>• Appoint an Emergency Response Coordinator tasked with responding to spills in order to minimize disparate utilization of resources</li> </ul>
<b>Emergency Response Coordinator</b>	<ul style="list-style-type: none"> <li>• Respond to spills so as to minimise disparate utilization of resources</li> </ul>
<b>Evacuation Officer</b>	<ul style="list-style-type: none"> <li>• Ensure they are easily recognizable to their colleagues/visitors and the emergency services by wearing the orange high vis vest or coat during any evacuation</li> <li>• Responsible for all occupants' safety during evacuation and to ensure the safety of the building before re-entering after drill, unless his role is passed onto the Emergency Response Coordinator</li> <li>• Keep an updated list of employees and visitors on site and carry the name list with them during evacuation</li> <li>• Ensure all occupants have evacuated the area where the incident has taken place (including people in rest rooms, meeting rooms, etc.)</li> <li>• To be fully trained in the provision of first aid</li> <li>• Ensure first-aid is given to evacuees if needed</li> </ul>

Responsible Parties	Roles and Responsibilities
<b>Health and Safety Manager</b>	<ul style="list-style-type: none"> <li>• Distribution of the SPCCP to all parties with responsibilities in implementing the plan (including contractors)</li> <li>• Review monthly spill report</li> <li>• Review quarterly report of accidents/incidents and reviews of contractor practices</li> <li>• Plan spill response drills with Dallol General Manager and Contractor Managers</li> <li>• Develop Spill Response Training</li> <li>• Lead any reviews or investigations into reported spills</li> <li>• Review all contracts prior to signing and confirm these contain requirements to meet Yara Dallol BV spill response standards</li> <li>• Receive all notifications of spills and ensure proper response is being followed including reporting and review</li> </ul>
<b>Environmental and Social Manager</b>	<ul style="list-style-type: none"> <li>• Support the Health and Safety Manager as required in spill response planning and in development of training and management plans to ensure environmental concerns are addressed</li> <li>• Provide regular spill reporting</li> </ul>
<b>Health &amp; Safety Support Staff</b>	<ul style="list-style-type: none"> <li>• Schedule monthly inspections and audits and resolve issues identified</li> <li>• Support the Health and Safety Manager in planning Spill Response drills</li> <li>• Schedule spill response training sessions for relevant staff</li> <li>• Prepare monthly spill report</li> </ul>
<b>Project Manager</b>	<ul style="list-style-type: none"> <li>• Together with the Health &amp; Safety Manager and Environmental and Social Manager is responsible for staffing, planning and day-to-day execution of the management measures described under this SPCCP during the construction phase of this Project.</li> <li>• As needed, this individual will develop and propose staff plans and contractual language to ensure that these measures are implemented by Yara Dallol BV staff and contractors throughout the construction phase of the Project.</li> </ul>
<b>Operations Manager</b>	<ul style="list-style-type: none"> <li>• Together with the Health &amp; Safety Manager and Environmental and Social Manager is responsible for staffing, planning and day-to-day execution of the management measures described under this SPCCP during the operational phase of this Project.</li> <li>• As needed, this individual will develop and propose staff plans and contractual language to ensure that these measures are implemented by Yara Dallol BV staff and contractors throughout the operational phase of the Project.</li> </ul>
<b>Contractor (Construction and Operations)</b>	<ul style="list-style-type: none"> <li>• Responsible for following the procedures and requirements indicated in construction and operational sections of this SPCCP.</li> </ul>
<b>All persons</b>	<ul style="list-style-type: none"> <li>• All persons employed by Yara Dallol BV or under service contract for Yara Dallol BV (e.g. contractor, transporter etc.), who discover or cause an incident are responsible for immediate reporting of the incident to his/her supervisor.</li> </ul>

## 4 *SPILL MANAGEMENT DURING THE CONSTRUCTION, OPERATION AND DECOMMISSIONING/CLOSURE PHASES*

### 4.1 *SPILL HAZARD IDENTIFICATION*

Yara Dallol BV will maintain a register of spill hazards associated with all activities during all phases (construction, operation and decommissioning/closure) of the Project.

All contractors will undertake spill hazard identification studies to identify spill hazards associated with their operations/activities and pass these on to Yara Dallol BV.

The spill hazard identification study will include –

- Approximate storage volumes for all hazardous materials/chemicals;
- Identification of storage and transfer locations for the various hazardous materials/chemicals; and
- The environmental and social risks associated with each hazardous material/chemical. These are to be obtained from each material / chemical's Material Safety Data Sheet (MSDS), which must be delivered with each hazardous material / chemical assignment.

Moreover, the study will include an up-to-date plan or map of the Project site and the locations of all managed chemical products.

Part of the process of developing the detailed spill hazard identification will be to assess the risk of spills. Risk will be evaluated based on –

- The likelihood of a spill occurring during handling and transfer methods;
- The presence of secondary containment;
- The state of the hazardous material/chemical product (solid/liquid);
- The preventative measures designed and in-place so as to prevent/contain spill events; and
- The potential impacts of a spill based on –
  - The toxicity of the hazardous material/chemical (obtained from the MSD sheets);
  - The potential for a spill to reach surface- and groundwater sources;
  - The potential volumes available for spills; and
  - The potential of a spill to affect human health.

Chemicals with a higher risk-rating will be evaluated so as to identify measures to reduce the risk through effective contaminant.

#### 4.2 *PRELIMINARY LIST OF HAZARDOUS CHEMICALS*

A preliminary list of potentially hazardous materials/chemicals that will be used during all phases of the Project include –

- Waste water, including sewage;
- Paints (*viz.* antirust, primer, auto lacquer, synthetic, enamel, metal, spray, floor and wall paints);
- Degreasers;
- Hydraulic, transmission and engine oil (new and used);
- Assorted lubricants;
- Refrigerants;
- Petrol;
- Diesel oil;
- Aerofroth 70 frother;
- Flotigam S;
- Chemicals used for the treatment of water (*viz.* sulphuric acid, bisulphite, antiscalant and chlorine);
- Drilling chemicals;
- Amine oil (product de-dusting agent); and
- Hydrogen peroxide (used for drilling).

MSD sheets associated with each of these hazardous materials / chemicals should be made available with each consignment, and MSDS sheets for all such hazardous materials / chemicals should be clearly displayed in each hazardous materials / chemicals store. The measures to be taken in case of a spill for each, should be included in the risk register (explained in *Section 4.1*).

#### 4.3 *SPILL PREVENTION MEASURES*

The following proactive measures will be adopted so as to prevent the likelihood of spill event:

- Training of Yara Dallol BV Staff and contractors regarding proper methods for transporting, transferring and handling substances that have the potential impact to human health or the environment.
- Institution of a preventative maintenance program including inspection schedules to confirm and maintain the mechanical integrity and operability of pressure tanks, piping systems, relief and vent valves systems, containment infrastructure, shutdown systems, controls, pumps and associated process equipment.

- Implementation of Standard Operation Procedures (SOPs) for handling materials including refuelling vehicles, the use of diesel as oil blankets, the use of diesel tanks, the use and handling of processing chemicals, and managing secondary containment areas.
- Provision of secondary containment, drip trays or other overflow and drop containment measures, for hazardous materials containers at connection points or other possible overflow points. Identification and provision of all equipment necessary to handle, transfer or transport materials properly.
- Use of transfer equipment that is compatible with and suitable for the characteristics of the materials transferred and designed to ensure safe transfer.
- Use of dripless hose connections for vehicle tank and fixed connections with storage tanks.
- Installation of gauges on tanks to measure volume inside.
- Review of all potential pollutants characteristics prior to introduction to site and establishment of proper storage, handling and transportation procedures and spill risk analysis.
- Material Safety Data Sheets (MSDS) for all contaminants on-site will be readily available. These will include human health effects of chemicals handled and will be included in the required chemical environmental and safety training for all employees handling or otherwise exposed to the contaminants. All appropriate personal protective equipment, handling and response procedures will also be identified in the MSDS or otherwise recommended by the suppliers/manufacturers and will be incorporated into a Spill Prevention Control and Containment Plan and followed by the Project staff.
- The Project will retain a qualified third-party to review and audit chemical storage and distribution systems, including appropriate testing every five years.
- Bulk transfers of chemicals during delivery will be observed by Yara Dallol BV personnel trained in preliminary hazard analysis methods.
- SOPs for chemical transportation, unloading, transfer, storage, handling, use and disposal shall be developed, kept current, effectively implemented by trained personnel.

#### 4.4

#### SPILL CONTROL AND COUNTERMEASURES

The following spill control and countermeasures will be followed in the event of a spill incident:

- Maintenance of updated emergency contact information list at all spill response kits locations.
- Maintenance of spill route maps (perceived overland flow path [flow gradient] and likely contamination point [i.e. surface water features, potable boreholes etc.] of a given contaminant substance) at potential spill locations.
- Document availability of all spill response equipment that is capable of handling a large spill.
- Document availability of specific personal protective equipment and the necessary training needed to respond to different potential spills.
- Maintenance of spill response kits on all Project fuel and lubrication sites and vehicles.
- Maintenance of spill response guidelines at all spill response kit locations.
- Maintenance of an up-to-date plan of the Project site showing the location of all contaminants, spill response kits and other response equipment.
- Maintenance of an updated table of all contaminants on-site and recommended spill response procedures.
- Development, implementation and regular training and testing of a facility-wide Spill Response Plan.
- First-aid training for all relevant mine personnel.
- All spills will be reported to appropriate management personnel.

#### 4.5

#### ***SPILL RESPONSE SUB-PLANS***

Site-specific spill response sub-plans will be developed by Yara Dallol BV. These sub-plans will be developed and implemented for areas where large volumes of hazardous chemicals are stored (for example - the tank farm in the footprint of the processing plant, workshop and vehicle repair area and blanket oil storage areas at the well fields in North Musley). These sub-plans will address:

- Roles in the event of a spill including: spill coordinator (the person on the ground at the spill site, who is responsible for immediate actions taken to contain the spill, respond to immediate dangers, notify necessary responders) and the rest of the mine site and personnel.
- Spill response equipment to be kept on site to contain spills.



- Internal and external notification procedures.
- A communication system that will be followed during the spill, first response and clean-up and communication infrastructure required i.e. radios, telephone systems etc.
- Facility evacuation routes and procedures.
- Post-event activities such as clean-up and disposal, incident investigation, employee re-entry and restoration of spill-response equipment.
- Reporting requirements at the time of the spill and after the spill.

#### 4.6

#### TRANSPORTATION OF HAZARDOUS MATERIALS AND CHEMICALS

The transportation of certain substances (*viz.* diesel) presents the potential for spills due to traffic accidents or other accidents or incidents en-route to or from the Project site. Precautions that will be followed include:

- Contractors will use transportation vehicles and tanks suitable for the materials and transportation routes used. These vehicles and tanks will be maintained in adequate condition to insure proper handling and safety of chemicals.
- Contracts involving chemical transportation will require compliance with applicable laws as well as Yara Dallol BV policies and procedures and will require responsible management of chemicals including emergency response and spill clean-up.
- Truck drivers will be required to notify the site of their departure time and arrival time and maintain a log of travel.
- All vehicles will be equipped with spill response kits appropriate to the materials being transported. The contractor will be required to maintain these in good condition and working order.
- Drivers will be trained in spill and emergency response and will have a means of communicating with the site, their administrative offices and emergency personnel for the entire transportation route.
- Up-to-date emergency contact information and monitoring sheets and manifests documenting the volume, phase and characteristics of the chemical being transported will be carried with each shipment.

**SPILL EMERGENCY PROCEDURES**

In the event of a hazardous spill onsite, the following emergency procedures must be implemented:

- The Emergency Response Coordinator must be notified.
- Personnel in the immediate vicinity of the hazardous spill, including the designated Evacuation personnel must be immediately notified.
- The risk of explosion (if known) must be communicated to the Dallol General Manager and Health and Safety Manager onsite.
- Vehicle ignition or any power supply where the hazardous spill occurred must be immediately switched off.
- If possible, all drains and valves in the vicinity of the hazardous spill must be closed.
- The application and use of hazardous spill kits must be used **ONLY** by those trained to do so.
- The appropriate hazardous spill response and clean-up contractor must be notified and all contaminated material as a result of the spill must be suitably disposed of off-site.

In addition to the above, the Yara Dallol BV procedure relating to the reporting of incidents (TOPS 0-01) provides a classification of environmental incidents into 5 categories of severity, namely –

- **Major Severity 1** –
  - Accidental release of hazardous material, liquid or gas to air, water or ground with serious long terms environmental impacts.
  - International Media Coverage.
  - Clean-up cost or legal penalty of more than 10 million Euros (or 15 million USD).
- **Major Severity 2** –
  - Release with serious short term environmental impacts.
  - National media coverage.
  - Clean-up cost or legal penalty in the range of 1 to 10 million Euros (or 15 million USD).
- **Major Severity 3** –
  - Release with the potential for short term local impact.
  - Local media coverage.

- Permit breach with the potential for legal charges.
- **Major Severity 4** -
  - Release with no apparent environmental impact.
  - Permit breach without legal charges.
- **Major Severity 5** -
  - Minor release without environmental impacts or negative publicity.

As per Yara Dallol BV's existing procedure (TOPS 0-01), the following incidents (as set out above) must be reported without delay by the Dallol General Manager to the Yara International Head Office -

- All environmental incidents in severity class 1, 2 and 3; and
- All environmental incidents with a potential for severity class 1 and 2.

All spill incidents will be registered by using Yara's Synergi database. Details of this process are provided in the TOPS 0-01 procedure. Moreover, all spill incidents will be investigated for identification of causes and preventative actions. All investigations must be organised and carried out in accordance with Yara Dallol BV's procedure on investigation and follow-up of environmental spill incidents and near miss incidents (as detailed in TOPS 0-02).

The actions resulting from any formal or informal investigations will be used to update this SPCCP.

## 4.8

### *TRAINING*

Chemical environmental and safety, spill response and first aid training will be delivered to all relevant employees. Training will be provided within one month of an employee's start-date. Chemical environmental and safety and first aid training will be provided by certified instructors. Spill response training will be provided by a competent persons and environmental, health and safety staff as necessary. Key personnel will be identified to receive preliminary hazard analysis training. The training will be conducted on a regular basis. The frequency and timing of training is at the discretion of the Dallol General Manager, Health and Safety Manager and Environmental and Social Manager, but is recommended to take place at least once a month.

The Health and Safety Manager shall distribute the SPCCP (together with the ERP and associated Emergency Evacuation Plan) to all parties in charge of ensuring the plans implementation. All relevant information in the SPCCP (and the ERP and associated Emergency Evacuation Plan) will be communicated to employees and contractors. This information will include

information on potential spill risks/threats for areas where large volumes of hazardous chemicals are stored, appropriate first person response to spill incidents and notification procedures.

## 5 *COSTS FOR SPILL PREVENTION, CONTROL AND CONTAINMENT*

### 5.1 *CONSTRUCTION AND OPERATIONAL PHASE*

Costs for implementation of preventative and containment measures will be borne by Yara Dallol BV for work carried out by Yara Dallol BV; however, costs for implementation of preventative and containment measures will be borne by contracting third parties where responsibility for hazards is allocated to such parties.

The cost for auditing and verification of contracting third party performance will be included in operational budgets by Yara Dallol BV.

### 5.2 *DECOMMISSIONING AND CLOSURE PHASE*

The costs associated with decommissioning and closure, as well as any post-closure, is covered by the amount accrued annually for the life of the Yara Dallol Potash Project.

Effective implementation of the plan and underlying operational procedures will ensure only insignificant contamination is present at closure.

### 6.1 VERIFICATION, MONITORING AND REPORTING PLAN

All high risk spill hazards will be monitored on a frequency to be determined in the appropriate management procedures for the identified hazards. Yara Dallol BV will include such monitoring into their auditing programs as developed as part of the Yara Dallol Potash Project ES-MS.

Yara Dallol BV will monitor (on an on-going basis) contractor performance against this SPCCP.

Monitoring will include:

- Bi-weekly inspections;
- Quarterly reporting by contractors regarding preventative maintenance programs;
- Spill reporting at the time of the incident and monthly spill reporting developed by Health and Safety department;
- Bi-annual spill response drills; and
- Annual reporting on training.

During bi-weekly inspections any missing response equipment, personal protection equipment, or documentation will be replaced or improved as necessary.

Quarterly reporting will identify any upcoming required preventative maintenance required as well as what preventative maintenance performed over the quarter. The Health and Safety Manager will track any outstanding maintenance and require the contractor to complete it in a timely fashion.

The spill response drills and spill reporting will provide information regarding required revisions to training, the spill response plan or other aspects of the SPCCP. Each spill reported will be reviewed by Health and Safety Manager and actions identified where possible to improve the site's overall planning. Updates/revisions will be made on a bi-annual basis or sooner if the deficiency identified is considered urgent. On a bi-annual (twice annually) basis the Key Performance Indicators will compared against past-performance and analyzed for trends to determine if there are areas the can be improved.

## 6.2

### *KEY PERFORMANCE INDICATORS*

The following Key Performance Indicators (KPIs) are suggestions and can be measured and used to evaluate the Project's performance with respect to its stated objectives and commitments:

- Monthly and annual volumes of materials transported and handled by the Project that could result in harm to human health or the environment in the event of an accident or spill;
- Monthly and annual number and volume of accidental small releases to the natural environment (including soils and water);
- Annual and monthly number of major spills occurring at the site of the Project;
- Number of hydrocarbon releases;
- Number of chemical releases;
- Number of other releases;
- Number of employees trained in spill response (compared to number of employees working with or around contaminants);
- Number of employees trained in first aid (compared to number of site personnel);
- Number of employees trained in the safe and environmentally sustainable handling of chemicals on-site (compared to number of employees working with or around contaminants); and
- Response time and methods used in drills.

## 6.3

### *COSTS FOR VERIFICATION AND MONITORING*

Costs for verification and monitoring of performance by Yara Dallol BV will be included in the operating cost of the Yara Dallol Potash Project.

Table 7.1 Complete Project Lifecycle

Impact	Objective	Mitigation/Management Measures	Monitoring Plan	Responsibility
Potential negative impacts to environment, workforce and community from spills	Development and implementation of a suitable SPCCP	Review the SPCCP to confirm specific procedures are in place to address prevent, control and mitigate spill events during all phases of the Project and at all operations and facilities associated with the Project	Annual review	<ul style="list-style-type: none"> <li>Dallol General Manager</li> <li>Health and Safety Manager</li> <li>Environmental and Social Manager</li> </ul>
	Update the SPCCP	Review of the SPCCP in the event of a change in process within the mining or support operations	Review of the SPCCP in the event of a change in process within the mining or support operations	<ul style="list-style-type: none"> <li>Health and Safety Manager</li> </ul>
	Manage the SPCCP processes	Maintenance of spill event contact information, location of contaminants, appropriate response procedures and location of response equipment	Annual review of processes	<ul style="list-style-type: none"> <li>Health and Safety Manager</li> <li>Environmental and Social Manager</li> </ul>
	Manage the SPCCP processes	Maintenance of spill response equipment	Annual inspection of equipment	<ul style="list-style-type: none"> <li>Health and Safety Manager</li> <li>Health and Safety Support Staff</li> </ul>
	Provide SPCCP relevant training	Provide spill response training to all employees and contractors, including first aid training	<p>Document training</p> <p>Annual review of candidates</p>	<ul style="list-style-type: none"> <li>Health and Safety Manager</li> <li>Health and Safety Support Staff</li> </ul>



Impact	Objective	Mitigation/Management Measures	Monitoring Plan	Responsibility
	Provide SPCCP relevant training	Provide all personnel involved in mineral processing and process chemical management appropriate training on how to recognise and respond to situations which can result in releases to the environment	Document training Annual review of candidates	<ul style="list-style-type: none"> <li>• Health and Safety Manager</li> <li>• Environmental and Social Manager</li> <li>• Health and Safety Support Staff</li> </ul>
	Inspect chemical and fuel storage facilities	Carryout inspections and assess integrity of all formal facilities used to store chemicals and fuels	Annual inspection of storage facilities	<ul style="list-style-type: none"> <li>• Health and Safety Manager</li> <li>• Health and Safety Support Staff</li> </ul>
	Oversee chemical transfer activities	Inspection of all chemical transfers taking place on site	As and when chemicals and/or fuel are delivered/removed from site	<ul style="list-style-type: none"> <li>• Health and Safety Support Staff</li> </ul>
	Report of spills	Carryout the appropriate internal and external reporting	Review of all spill reports	<ul style="list-style-type: none"> <li>• Health and Safety Manager</li> <li>• Environmental and Social Manager</li> <li>• Health and Safety Support Staff</li> </ul>

