



Environmental & Social Management System

Cyanide Management Framework

Cyanide Management Framework

Effective Date:
01.04.2016

Document Number:
OMAS-ESMS-CY-PLN-001

Rev:
1

TABLE OF CONTENTS

1	INTRODUCTION.....	4
1.1	DOCUMENT NUMBER	4
1.2	PURPOSE.....	4
1.3	APPLICATION.....	4
1.4	COMMENCEMENT	4
1.5	AUTHORITY AND MANAGEMENT	4
2	SCOPE.....	5
2.1	SCOPE OF THIS MANAGEMENT FRAMEWORK.....	5
2.2	OVERLAPS WITH OTHER MANAGEMENT PLANS	5
3	ROLES AND RESPONSIBILITIES.....	6
3.1	KEY ROLES AND RESPONSIBILITIES FOR MANAGEMENT FRAMEWORK IMPLEMENTATION.....	6
3.2	KEY INTERFACES.....	6
4	PROJECT STANDARDS.....	7
4.1	APPLICABLE TURKISH NATIONAL STANDARDS	7
4.2	TURKISH EIA REQUIREMENTS	7
4.3	APPLICABLE INTERNATIONAL STANDARDS AND GUIDELINES	9
4.4	APPLICABLE CENTERRA AND OMAS STANDARDS, POLICIES AND PROCEDURES	11
4.5	OTHER INDUSTRY GUIDELINES WITH WHICH OMAS HAS COMMITTED TO ALIGN WITH.....	12
4.6	SUMMARY OF APPLICABLE PROJECT STANDARDS	12
5	MITIGATION MEASURES AND MANAGEMENT CONTROLS.....	13
5.1	SUMMARY	13
6	IMPLEMENTATION SCHEDULE	17
6.1	REVIEW AND REVISION OF THIS MANAGEMENT FRAMEWORK	17
7	MONITORING	17
7.1	OVERVIEW OF MONITORING REQUIREMENTS	17
7.2	MONITORING REQUIREMENTS WITHIN THE TURKISH EIA.....	17
7.3	KEY MONITORING ACTIVITIES.....	17
7.4	KEY PERFORMANCE INDICATORS	18
8	TRAINING	19
8.1	OVERVIEW	19
8.2	INDUCTION TRAINING	19
8.3	JOB-SPECIFIC TRAINING	19
8.4	OTHER TRAINING REQUIREMENTS.....	19
9	AUDIT AND REPORTING	19
9.1	AUDITING	19
9.2	EXTERNAL AUDITING	19
9.3	RECORD KEEPING	19
10	DOCUMENT CONTROL	20



Cyanide Management Framework

Effective Date: 01.04.2016	Document Number: OMAS-ESMS-CY-PLN-001	Rev: 1
-------------------------------	--	-----------

Tables

Table 1: Key Roles and Responsibilities	6
Table 2: Key Management Controls	14
Table 3: Key Monitoring Measures	18
Table 4: Key Performance Indicators and monitoring measures	18



Cyanide Management Framework

Effective Date:
01.04.2016

Document Number:
OMAS-ESMS-CY-PLN-001

Rev:
1

1 INTRODUCTION

1.1 Document Number

This document is the Cyanide Management Framework for the Öksüt Gold Project. The document reference number for this Management Framework is OMAS-ESMS-CY-PLN-001.

1.2 Purpose

The purpose of this Cyanide Management Framework is to set out the key approaches and commitments of OMAS for the management of cyanide prior to the preparation of a detailed Cyanide Management Plan.

Centerra Gold Inc. is a signatory of the International Cyanide Management Code (ICMC) and OMAS, as a wholly-owned subsidiary, will also operate in compliance with the ICMC. As part of this, OMAS has selected an ICMC signatory cyanide producer, CyPlus GmbH of Germany, to supply and transport cyanide to the Öksüt Project.

OMAS will seek ICMC certification for its operations and for cyanide transport to the mine site (undertaken by CyPlus).

In conjunction with CyPlus, OMAS will prepare a detailed Cyanide Management Plan prior to the first shipment of cyanide to the mine site.

- CyPlus will be responsible for the preparation of all cyanide management plans and procedures (off-site transportation, solids-to-liquids systems) up to the point of hand-over to OMAS at the point when cyanide solution is transferred into the OMAS on-site storage tanks.
- OMAS will be responsible for the preparation of all on-site management and monitoring procedures, emergency response planning and stakeholder engagement.
- OMAS will oversee and supervise the plan development activities undertaken by CyPlus to ensure that they are in accordance with Centerra and OMAS requirements.

1.3 Application

The requirements set out in this Management Framework apply to all OMAS activities throughout the lifecycle of the Öksüt Gold Project, including those carried out by contractors.

This Management Framework is based on the OMAS Environmental & Social Management System Framework (OMAS-ESMS-001), which is owned by the OMAS General Manager. Any subsequent changes to the OMAS Environmental & Social Management System (ESMS) Framework may result in changes to this Management Framework.

1.4 Commencement

This Management Framework applies from 1 April 2016.

1.5 Authority and Management

The OMAS General Manager approved this Management Framework on 1 March 2016.

This Management Framework is owned by the OMAS General Manager. This Management Framework will be reviewed on a minimum of a six monthly basis during construction and commissioning. During steady state operations, this Management Framework will be reviewed on an annual basis to determine

Cyanide Management Framework

Effective Date:
01.04.2016

Document Number:
OMAS-ESMS-CY-PLN-001

Rev:
1

whether any changes or updates are required to the plan unless a more frequent update is required to reflect changing project design or procedures.

Any requests for changes to this Management Framework must be addressed to the owner of this Management Framework and will be subject to appropriate review and approval processes as outlined in the Management of Change (MOC) procedure set out in the ESMS Framework.

2 SCOPE

2.1 Scope of this Management Framework

This Management Framework covers all OMAS activities, including contractor activities, related to the transportation, storage, use and management of cyanide. Contractor management is addressed in the Contractor Management Framework (OMAS-ESMS-CM-PLN-001).

This document outlines OMAS's commitment and approach to avoiding and managing cyanide risks that may arise as a direct or indirect result of the OMAS project.

Key risks identified in the ESIA and addressed by this Management Framework include:

- Spills or accidents during the transportation of cyanide to the mine site (Construction and Operations);
- Spills or accidents during the storage of cyanide at the mine site (Operations);
- Spills of cyanide solution during the use of cyanide-containing leach solution at the mine site (Operations);
- Generation of hydrogen cyanide gas, and potential exposure of the workforce, during the use of cyanide-containing leach solution at the mine site (Operations)
- Contamination of soil, surface water or groundwater resources by cyanide-containing leach solution at the mine site (Construction, Operations, and Closure).

2.2 Overlaps with other Management Plans

This Management Framework is part of the overall suite of Management Plans developed for the OMAS Project and as described in the Environmental and Social Management Framework (OMAS-ESMS-001).

This Management Framework has overlaps and cross-linkages to a number of other Management Plans which have community health safety and security implications, including:

- the Emergency Response Plan (OMAS-ESMS-ERP-PLN-001), particularly in relation to responding to off-site accidents and incidents;
- the Hazardous Materials Management Plan (OMAS-ESMS-HM-PLN-001), particularly in relation to the transport, storage, use and disposal of hazardous materials;
- the Air Emissions Management Plan (OMAS-ESMS-AE-PLN-001), particularly in relation to management of community exposure to dust generated by OMAS activities;
- the Water Resources Management Plan (OMAS-ESMS-WR-PLN-001), particularly in relation to the protection of potable drinking water supplies;
- the Mine Closure Plan (OMAS-ESMS-CP-PLN-001), particularly in relation to protection of local communities from physical hazards remaining once the mine has stopped operating;

Cyanide Management Framework

Effective Date:
01.04.2016

Document Number:
OMAS-ESMS-CY-PLN-001

Rev:
1

- the Stakeholder Engagement Plan (OMAS-ESMS-SEP-PLN-001), particularly in relation to communication with local communities and stakeholders.

3 ROLES AND RESPONSIBILITIES

3.1 Key Roles and Responsibilities for Management Framework Implementation

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

Table 1: Key Roles and Responsibilities

Role	Responsibilities
OMAS General Manager	<ul style="list-style-type: none"> Approval of this Framework and resources required for implementation. Ensure review and up-dating
OMAS Mine Operations Manager	<ul style="list-style-type: none"> Ensure Project compliance with the Project Standards and other requirements set out in this Framework Overall responsibility for Framework scope and implementation. Development, monitoring and revision of this Framework.
OMAS HSE & Training Manager	<ul style="list-style-type: none"> Ensure that relevant activities are undertaken in accordance with this Management Framework and related procedures.
OMAS Director External Relations & Sustainability	<ul style="list-style-type: none"> Timely implementation of this Framework, including coordination with governmental organisations and other stakeholders.
Operational Department Managers and Principal Contractors (CyPlus and other relevant contractors)	<ul style="list-style-type: none"> Ensure that relevant activities are undertaken in accordance with this Management Framework and related Procedures. Ensure that department personnel are fully trained in applicable cyanide safety and management practices. Ensure incident¹ investigations are undertaken and reported.
Workplace Supervisors / Superintendents	<ul style="list-style-type: none"> Provide oversight and conduct routine work area inspections to ensure relevant activities are in accordance with this Management Framework and related Procedures. Report all hazards, non-conformances and incidents.
All employees and contractors	<ul style="list-style-type: none"> Report any activities which are causing unnecessary emissions or potential community risks.

3.2 Key Interfaces

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

- OMAS Project Manager, particularly in relation to the safe implementation of on-site activities during construction;

¹ Incidents are defined by reference to the Project finance documents and OMAS ESMS Framework.

Cyanide Management Framework

Effective Date:
01.04.2016

Document Number:
OMAS-ESMS-CY-PLN-001

Rev:
1

- OMAS Mine Operations Manager, particularly in relation to the safe implementation of on-site activities and off-site transportation activities during operation;
- OMAS HSE & Training Manger, particularly in relation to community safety management and worker training;
- OMAS Community Relations Manager, particularly in relation to communication with local communities concerning community health, safety and security issues;
- OMAS Procurement Manager, particularly in relation to selection and audit of appropriately qualified cyanide supplier and local transportation contractor(s).

4 PROJECT STANDARDS

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

- applicable Turkish Standards;
- Turkish EIA requirements;
- other commitments to and requirements of Turkish Government authorities;
- applicable international standards and guidelines;
- applicable Centerra and OMAS standards, policies and procedures;
- other industry guidelines with which OMAS has committed to comply or align with.

4.1 Applicable Turkish National Standards

- Communiqué on Major Accident Prevention Policy Documents (Official Gazette 29435, 4 August 2015).
- Regulation on Mine Waste Management (Official Gazette 29417. 15 July 2015).
- Regulation on Prevention and Effect Control of Major Industrial Accidents (Official Gazette 28867, 30 December 2013).
- Regulation on Occupational Health and Safety Preventative Measures during Working with Chemicals (Official Gazette 5467, 26 December 2013).
- Regulation on Control of Industrial Air Pollution (Official Gazette 27277, 3 July 2009).
- Regulation on the Road Transportation of Hazardous Chemicals (Official Gazette 15742, 22 October 1976).

4.2 Turkish EIA requirements

Section 5.7.2 of the Turkish EIA sets out the following key risk mitigation commitments related to the use and management of cyanide (text in italics is taken directly from the EIA):

- *In order to eliminate any risk posed by HCN gas in the course of operations, pH value of all solutions containing HCN will be kept above 10. Adjustment of the pH of the solution will be done by adding lime. With this practice, the rate of passing of hydrogen cyanide in the liquid to atmosphere will be reduced below 5%. There will be detectors around the units containing hydrogen cyanide (such as leaching tanks, adsorption tanks, heap leach facility, etc.). Detectors will record continuously and in the event of exceeding of the threshold limit value (TLV), an audible alarm system will be activated. The TLV has been established at 10 ppm (11 mg/m³).*

Cyanide Management Framework

Effective Date:
01.04.2016

Document Number:
OMAS-ESMS-CY-PLN-001

Rev:
1

- *ÖMAŞ recognizes the protection of the health and safety of its employees, contractors and the public as vital to the Company's existence and continued development. Centerra Gold Inc. is committed to conducting all of its activities that involve the transportation, handling and use of cyanide at our projects, operations and decommissioning sites in a safe, healthy and responsible manner. ÖMAŞ subscribes to the International Cyanide Management Code to ensure accountability in providing healthy and safe communities and workplaces.*
- **Worker Safety:** *Protect workers' health and safety from exposure to cyanide.*
 - *Identify potential cyanide exposure risks and take measures to eliminate, reduce and control them.*
 - *Operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures.*
 - *Develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.*
- **Emergency Response:** *Protect community health and safety through the development and implementation of emergency response strategies and capabilities.*
 - *Prepare detailed emergency response plans for potential cyanide releases.*
 - *Involve site personnel and other stakeholders in the planning process.*
 - *Designate appropriate personnel and commit necessary equipment and resources for emergency response.*
 - *Develop procedures for internal and external emergency notification and reporting.*
 - *Incorporate into response plans and remediation measures monitoring elements that account for the additional hazards of using cyanide treatment chemicals.*
 - *Periodically evaluate response procedures and capabilities and revise them as needed.*
- **Training:** *Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner.*
 - *Train workers to understand the hazards associated with cyanide use.*
 - *Train appropriate personnel to operate the facility according to systems and procedures that protect human health, the community and the environment.*
 - *Train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide.*
- **Transportation:** *Transport cyanide in a manner that minimizes the potential for accidental releases.*
 - *Select cyanide transport routes to minimize the potential for accidents and releases.*
 - *Ensure that personnel operating cyanide handling and transport equipment can perform their jobs with minimum risk to communities and the environment.*
 - *Ensure that transport equipment is suitable for the cyanide shipment.*
 - *Develop and implement safety programs and procedures for transport of cyanide.*
 - *Follow international standards for transportation of cyanide by sea and air.*
 - *Track cyanide shipments to prevent losses during transport.*
 - *Design, construct and operate cyanide trans-shipping depots and interim storage sites to prevent releases and exposures.*
 - *Store cyanide in a manner that minimizes the potential for accidental releases.*

Cyanide Management Framework

Effective Date:
01.04.2016

Document Number:
OMAS-ESMS-CY-PLN-001

Rev:
1

- *Protect communities and the environment through the development of emergency response strategies and capabilities.*
- *Prepare detailed emergency response plans for potential cyanide releases.*
- *Designate appropriate response personnel and commit necessary resources for emergency response.*
- *Develop procedures for internal and external emergency notification and reporting.*
- *Develop procedures for remediation of releases that recognize the additional hazards of cyanide treatment chemicals.*
- *Periodically evaluate response procedures and capabilities and revise them as needed.*

4.3 Applicable International Standards and Guidelines

The international standards which OMAS will implement are those set by the European Bank for Reconstruction and Development (EBRD).

EBRD Performance Requirement 4 *Health and Safety* sets out requirements with regard to hazardous materials safety and emergency preparedness and response. OMAS will also align its activities to meet the relevant requirements of EU environmental legislation, specifically:

- Directive 2012/18/EU on the control of major accident hazards involving dangerous substances (the “Seveso Directive”);
- Directive 2006/21/EC on the management of waste from the extractive industries (the “Mining Waste Directive”).

International Cyanide Management Code

Centerra Gold is a signatory to the International Cyanide Management Code and OMAS has committed to complying with the requirements of the ICMC.

Key requirements of the ICMC are summarised in a set of Principles and Standards of Practice as set out below.

Principle	Standard of Practice
1. PRODUCTION Encourage responsible cyanide manufacturing by purchasing from manufacturers who operate in a safe and environmentally protective manner.	1.1 Purchase cyanide from manufacturers employing appropriate practices and procedures to limit exposure of their workforce to cyanide and to prevent releases of cyanide to the environment.
2. TRANSPORTATION Protect communities and the environment during cyanide transport.	2.1 Establish clear lines of responsibility for safety, security, release prevention, training and emergency response in written agreements with producers, distributors and transporters. 2.2 Require that cyanide transporters implement appropriate emergency response plans and capabilities, and employ adequate measures for cyanide management.
3. HANDLING AND STORAGE Protect workers and the environment during cyanide handling and storage.	3.1 Design and construct unloading, storage and mixing facilities consistent with sound, accepted engineering practices and quality control and quality assurance procedures, spill prevention and spill containment measures. 3.2 Operate unloading, storage and mixing facilities using inspections, preventive maintenance and contingency plans to prevent or contain releases and control and respond to worker exposures.
4. OPERATIONS Manage cyanide process solutions	4.1 Implement management and operating systems designed to protect human health and the environment including contingency planning and inspection and

Cyanide Management Framework

Effective Date:
01.04.2016

Document Number:
OMAS-ESMS-CY-PLN-001

Rev:
1

<p>and waste streams to protect human health and the environment.</p>	<p>preventive maintenance procedures.</p> <p>4.2 Introduce management and operating systems to minimize cyanide use, thereby limiting concentrations of cyanide in mill tailings.</p> <p>4.3 Implement a comprehensive water management program to protect against unintentional releases.</p> <p>4.4 Implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.</p> <p>4.5 Implement measures to protect fish and wildlife from direct and indirect discharges of cyanide process solutions to surface water.</p> <p>4.6 Implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of ground water.</p> <p>4.7 Provide spill prevention or containment measures for process tanks and pipelines.</p> <p>4.8 Implement quality control/quality assurance procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications.</p> <p>4.9 Implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and ground water quality.</p>
<p>5. DECOMMISSIONING Protect communities and the environment from cyanide through development and implementation of decommissioning plans for cyanide facilities.</p>	<p>5.1 Plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife and livestock.</p> <p>5.2 Establish an assurance mechanism capable of fully funding cyanide-related decommissioning activities.</p>
<p>6. WORKER SAFETY Protect workers' health and safety from exposure to cyanide.</p>	<p>6.1 Identify potential cyanide exposure scenarios and take measures as necessary to eliminate, reduce and control them.</p> <p>6.2 Operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures.</p> <p>6.3 Develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.</p>
<p>7. EMERGENCY RESPONSE Protect communities and the environment through the development of emergency response strategies and capabilities.</p>	<p>7.1 Prepare detailed emergency response plans for potential cyanide releases.</p> <p>7.2 Involve site personnel and stakeholders in the planning process.</p> <p>7.3 Designate appropriate personnel and commit necessary equipment and resources for emergency response.</p> <p>7.4 Develop procedures for internal and external emergency notification and reporting.</p> <p>7.5 Incorporate into response plans monitoring elements and remediation measures that account for the additional hazards of using cyanide treatment chemicals.</p> <p>7.6 Periodically evaluate response procedures and capabilities and revise them</p>

Cyanide Management Framework		
Effective Date: 01.04.2016	Document Number: OMAS-ESMS-CY-PLN-001	Rev: 1

8. TRAINING Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner.	<p>as needed.</p> <p>8.1 Train workers to understand the hazards associated with cyanide use.</p> <p>8.2 Train appropriate personnel to operate the facility according to systems and procedures that protect human health, the community and the environment.</p> <p>8.3 Train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide.</p>
9. DIALOGUE Engage in public consultation and disclosure.	<p>9.1 Provide stakeholders the opportunity to communicate issues of concern.</p> <p>9.2 Initiate dialogue describing cyanide management procedures and responsively address identified concerns.</p> <p>9.3 Make appropriate operational and environmental information regarding cyanide available to stakeholders.</p>

4.4 Applicable Centerra and OMAS Standards, Policies and Procedures

OMAS Sustainability Policy

The OMAS Sustainability Policy (OMAS-HSEC-POL-002) commits OMAS to undertake the following:

- To listen to and engage with host communities in a collaborative, transparent manner to build mutual trust and understanding.
- To work proactively with communities to identify and manage social risks, impacts and obligations.
- To help foster a stable, healthy and safe environment in which to live and work.
- To develop partnerships with host communities, governments, employees, contractors and others to promote sustainable social and economic development.
- To respect the fundamental human rights of all stakeholders with whom we interact.
- To manage grievances in a fair, timely and consistent manner.
- To take into account the special aspirations, needs and concerns of Indigenous Peoples, women, children and vulnerable groups within our sphere of influence.
- To leave a lasting positive legacy by working with local stakeholders to prepare for our eventual departure and the closure of our operations.
- To monitor and continually seek to improve our community relations performance in order to create value for our stakeholders and shareholders alike.

OMAS Health & Safety Policy

The OMAS Health, Safety & Environment Policy (OMAS-HSEC-POL-001) commits OMAS to undertake the following:

- implement and maintain a formal health, safety and environmental management system;
- identify the significant health and safety hazards and risks associated with our activities;
- set objectives and targets so as to improve continually our health, safety and environmental management and performance;

Cyanide Management Framework

Effective Date:
01.04.2016

Document Number:
OMAS-ESMS-CY-PLN-001

Rev:
1

- identify the potential for incidents, and emergency situations and develop, maintain and test emergency response plans which provide for the protection of the environment, the health and safety of our employees, the public, and the communities adjacent to our operations;
- undertake constructive dialogue with the communities located near our operations regarding safety issues;
- handle and dispose of our wastes responsibly to avoid, reduce or control pollution;
- decommission and reclaim our sites in a planned and timely manner;
- conduct regular audits to assess and ensure conformance to this policy;
- engage in constructive communication of this policy with all employees and relevant contractors and suppliers so they are aware of, and able to comply with their health, safety and environmental responsibilities in a manner appropriate to their role in the organization, and to encourage them to make contributions to OMAS's health, safety and environmental management;
- provide employees at all levels with appropriate training so as to allow them to carry out their health, safety and environmental duties and responsibilities;
- ensure the participation of employees in the development and implementation of health, safety and environmental programs and procedures associated with their work places;
- provide adequate and appropriate resources to implement this policy;
- make this policy available to the public.

4.5 Other industry guidelines with which OMAS has committed to align with

UNEP APELL for Mining

The UNEP APELL "Guidance for the Mining Industry in Raising Awareness and Preparedness for Emergencies at Local Level" also provides applicable guidelines for emergency preparedness and response for mining operations. This guidance is focused on environmental and community impacts resulting from mining operations such as tailings dam failure, collapse of waste heaps. This guidance has been taken into account in the Emergency Response Plan.

4.6 Summary of Applicable Project Standards

OMAS will comply with the more stringent of national standards and applicable lender standards, with the more stringent standards representing the Project Standards. The Project will also align with the Voluntary Principles as part of the Project Standards.

Applicable Project Standards are summarised below.

Standard	Scope
Turkish regulatory requirements (see Sections 4.1 and 4.2)	<ul style="list-style-type: none"> • Management and control of risks related to transport, storage and use of cyanide
EBRD Performance Requirement 4: Health and Safety	<ul style="list-style-type: none"> • Risk assessment, mitigation and management related to community health, safety and security
International Cyanide Management Code (see Section 4.3)	<ul style="list-style-type: none"> • Cyanide transport, storage and use. Emergency response planning.

Cyanide Management Framework

Effective Date:
01.04.2016

Document Number:
OMAS-ESMS-CY-PLN-001

Rev:
1

5 MITIGATION MEASURES AND MANAGEMENT CONTROLS

5.1 Summary

This Management Framework may be supported by additional procedures and guidelines, which present more details on specific aspects of the day-to-day management activities at OMAS.

The table below presents the key management controls and other commitments that OMAS will implement.

Cyanide Management Framework

Effective Date: 01.04.2016	Document Number: OMAS-ESMS-CY-PLN-001	Rev: 1
-------------------------------	--	-----------

Table 2: Key Management Controls

ID	Applicability/ Activity	Control Description	Responsible Parties	Means of Verification
CY1	Cyanide Purchasing	<ul style="list-style-type: none"> OMAS will purchase cyanide from an ICMC signatory manufacturer (IMCC SOP 1.1) 	OMAS Procurement Manager	Contract in place with ICMC signatory manufacturer
CY2	Cyanide Transportation	<ul style="list-style-type: none"> OMAS will require a transportation management plan to be developed by its appointed cyanide supplier that sets out clear lines of responsibility for safety, security, release prevention, training and emergency response along the entire supply chain from production, through transportation and to delivery at the mine site (ICMC SOP 2.1) OMAS will require the appointed cyanide supplier to develop appropriate emergency response plans and capabilities, and employ adequate measures for cyanide management along the supply chain (ICMC SOP 2.2) 	Cyanide supplier	Cyanide transportation management plan, including emergency response plans along supply chain
CY3	Handling and Storage	<ul style="list-style-type: none"> OMAS will design and construct unloading, storage and mixing facilities consistent with sound, accepted engineering practices and quality control and quality assurance procedures, spill prevention and spill containment measures (ICMC SOP 3.1) OMAS will develop standard operating procedures to operate unloading, storage and mixing facilities using inspections, preventive maintenance and contingency plans to prevent or contain releases and control and respond to worker exposures (ICMC SOP 3.2) 	OMAS Project Manager OMAS Mine Operations Manager	CyPlus SLS system and dissolution facility installed Cyanide management standard operating procedures in place
CY4	Operations Management	<ul style="list-style-type: none"> OMAS will develop and implement management and operating systems designed to protect human health and the environment including contingency planning and inspection and preventive maintenance procedures (ICMC SOP 4.1) OMAS will develop and implement management and operating systems to use cyanide as efficiently as possible to reduce cyanide use (ICMC SOP 4.2) OMAS will develop and implement a comprehensive process water management programme to minimise the likelihood and magnitude of unintentional releases (ICMC SOP 4.3) 	OMAS Mine Operations Manager	Cyanide management standard operating procedures in place

Cyanide Management Framework

Effective Date:
01.04.2016

Document Number:
OMAS-ESMS-CY-PLN-001

Rev:
1

ID	Applicability/ Activity	Control Description	Responsible Parties	Means of Verification
		<ul style="list-style-type: none"> OMAS will implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions (ICMC SOP 4.4) OMAS will implement measures to protect fish and wildlife from direct and indirect discharges of cyanide process solutions to surface water (ICMC SOP 4.5) OMAS will implement measures to manage seepage from cyanide facilities (specifically the HLP, PLS) to protect ground water quality (ICMC SOP 4.6) OMAS will provide spill prevention and/or secondary containment measures for process tanks and pipelines containing cyanide (ICMC SOP 4.7) OMAS will implement quality control/quality assurance procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications (ICMC SOP 4.8) OMAS will implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface water and groundwater quality (ICMC SOP 4.9) 		
CY5	Decommissioning	<ul style="list-style-type: none"> OMAS will ensure that decommissioning planning takes account of the need for effective decommissioning of cyanide facilities to protect human health, wildlife and livestock (ICMC SOP 5.1) <p>OMAS will ensure that closure planning includes an assurance mechanism capable of fully funding cyanide-related decommissioning activities (ICMC SOP 5.2)</p>	OMAS Project Manager	Closure Plan includes decommissioning of cyanide facilities
CY6	Worker Safety	<ul style="list-style-type: none"> OMAS will identify potential cyanide exposure scenarios and take measures as necessary to eliminate, reduce and control such risks (ICMC SOP 6.1) OMAS will operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures (ICMC SOP 6.2) OMAS will develop and implement emergency response plans and procedures to respond to worker exposure to cyanide (ICMC SOP 6.3) 	OMAS HSE & Training Manager	Worker health & safety system and standard operating procedures in place
CY7	Emergency Response	<ul style="list-style-type: none"> OMAS will prepare detailed emergency response plans for potential cyanide release scenarios (ICMC SOP 7.1) 	OMAS HSE & Training Manager	Cyanide emergency response plans in

Cyanide Management Framework

Effective Date:
01.04.2016

Document Number:
OMAS-ESMS-CY-PLN-001

Rev:
1

ID	Applicability/ Activity	Control Description	Responsible Parties	Means of Verification
		<ul style="list-style-type: none"> OMAS will involve site personnel and stakeholders in the planning process(ICMC SOP 7.2) OMAS will designate appropriate personnel and commit necessary equipment and resources for emergency response(ICMC SOP 7.3) OMAS will develop procedures for internal and external emergency notification and reporting(ICMC SOP 7.4) OMAS will incorporate into response plans monitoring elements and remediation measures that account for the additional hazards of using cyanide treatment chemicals(ICMC SOP 7.5) OMAS will periodically evaluate response procedures and capabilities and revise them as needed (ICMC SOP 7.6) 		place as part of detailed Cyanide Management Plan
CY8	Worker Training	<ul style="list-style-type: none"> OMAS will train workers to understand the hazards associated with cyanide use (ICMC SOP 8.1) OMAS will train appropriate personnel to operate the facility according to systems and procedures that protect human health, the community and the environment (ICMC SOP 8.2) OMAS will train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide (ICMC SOP 8.3) 	OMAS HSE & Training Manager	Worker training plan in place
CY9	Stakeholder Engagement	<ul style="list-style-type: none"> OMAS will provide stakeholders the opportunity to communicate issues of concern (ICMC SOP 9.1) OMAS will initiate dialogue with stakeholders describing cyanide management procedures and responsively address identified concerns (ICMC SOP 9.2) OMAS will make appropriate operational and environmental information regarding cyanide available to stakeholders (ICMC SOP 9.3) 	OMAS Director External Relations & Sustainability	Stakeholder engagement plans in place as part of detailed Cyanide Management Plan

Cyanide Management Framework		
Effective Date: 01.04.2016	Document Number: OMAS-ESMS-CY-PLN-001	Rev: 1

6 IMPLEMENTATION SCHEDULE

6.1 Review and Revision of this Management Framework

This Management Framework will be developed during the construction phase in conjunction with the selected cyanide supplier into a detailed Cyanide Management Plan, compliant with the ICMC, which will cover transportation, storage, management and use and emergency response. OMAS will prepare the detailed Cyanide Management Plan prior to the first shipment of cyanide to the mine site.

Once the detailed Cyanide Management Plan has been prepared, it will be reviewed on a minimum of a six monthly basis during construction and commissioning. During steady state operations, the Cyanide Management Plan will be reviewed on an annual basis and any necessary revisions made to reflect the changing circumstances or operational needs of OMAS. Revision of the Cyanide Management Plan will be the responsibility of the OMAS General Manager, who is custodian of this Plan.

If material changes to operating procedures are required (as identified through the Management of Change procedure contained within the OMAS ESMS Framework) this Framework may be updated on an “as required” basis.

Any revisions to this Management Framework will be uploaded to the OMAS Document Control Centre to ensure that all OMAS staff has access to the latest version of this Management Framework.

7 MONITORING

7.1 Overview of Monitoring Requirements

The monitoring measures that are to be implemented during the operations phase to assess compliance with Project Standards (see *Section 4: Project Standards*) are described in the section.

In the event that monitoring identified non-conformance with Project Standards, these will be investigated and appropriate corrective actions identified (see Component 12 Non-conformance incident and action management of the OMAS ESMS Framework).

7.2 Monitoring Requirements within the Turkish EIA

Monitoring requirements related to cyanide as set out in the Turkish EIA are included in the following management plans:

- Air Emissions Management Plan (OMAS-ESMS-AE-PLN-001);
- Water Resources Management Plan (OMAS-ESMS-WR-PLN-001).

7.3 Key Monitoring Activities

Key monitoring activities will focus on ensuring that the requirements of the detailed Cyanide Management Plan are being effectively implemented.

Monitoring measures will be defined in the detailed Cyanide Management Plan but will include the following monitoring measures set out in the Turkish EIA.

Cyanide Management Framework

Effective Date: 01.04.2016	Document Number: OMAS-ESMS-CY-PLN-001	Rev: 1
-------------------------------	--	-----------

Table 3: Key Monitoring Measures

ID	Topic/Aspects	Methods	Periodicity	Location
CYm01	Worker Safety	<ul style="list-style-type: none"> Continuous monitoring of Hydrogen Cyanide atmospheric concentration. Threshold limit value is 10ppm (11mg/m³) 	Continuous	All working areas where Cyanide is stored and used
CYm02	Environmental Levels (on-site and off-site)	<ul style="list-style-type: none"> Groundwater and surface water quality monitoring, including Cyanide concentrations, as set out in the Water Resources Management Plan (OMAS-ESMS-WR-PLN-001) 	Periodic	As defined in Water Resources Management Plan
CYm03	Environmental Levels (on-site and off-site)	<ul style="list-style-type: none"> Total Cyanide (TCN) and weak acid dissoluble Cyanide (WADCN) will be monitored in the HLF monitoring wells and at downstream locations, as set out in the Water Resources Management Plan (OMAS-ESMS-WR-PLN-001) 	Periodic	As defined in Water Resources Management Plan
CYm04	Atmospheric Emissions	<ul style="list-style-type: none"> Atmospheric emissions from the ADR plant will be continuously monitored and HCN concentrations will be maintained below the limit value of 5 m/Nm³ as defined in the SKHKKY Regulation. As set out in the Air Emissions Management Plan (OMAS-ESMS-AE-PLN-001) 	Continuously	Exhaust vent of ADR plant.

7.4 Key Performance Indicators

The table below summarises the key performance indicators and associated key monitoring actions that will be used to assess the progress and effectiveness of proposed mitigation strategies.

Table 4: Key Performance Indicators and monitoring measures

ID	KPI	Target
CY-KPI 01	Total number of non-compliances with cyanide management and monitoring measures identified in <i>Table 2</i> and <i>Table 3</i> of this Plan (and the subsequent detailed Cyanide Management Plan).	Minimise and target zero per annum.
CY-KPI 02	Number of community complaints from local communities related to cyanide management as recorded in the grievance management system.	Minimise and continued improvement in number of cyanide management related complaints.
CY-KPI 03	Number of reported cyanide incidents	Minimise and target zero per annum.

Cyanide Management Framework

Effective Date:
01.04.2016

Document Number:
OMAS-ESMS-CY-PLN-001

Rev:
1

8 TRAINING

8.1 Overview

All necessary training is provided as part of induction training (to provide general awareness) and job-specific training as necessary.

8.2 Induction Training

All employees of OMAS and Contractors working at Öksüt will be provided with general induction, site specific induction and a broad range of health, safety and environmental awareness training.

Appropriate Personal Protective Equipment (PPE) will be made available to personnel if required. All relevant personnel will be trained in the use and maintenance of protective equipment.

8.3 Job-Specific Training

Additional specialist training is to be provided to workers who may be exposed to cyanide solutions as part of their working activities, or who work in areas where cyanide is used (specifically, HLF, ADR plant and reagent storage and handling).

8.4 Other Training Requirements

General aspects of environmental management will be included in induction training to be provided to all employees.

9 AUDIT AND REPORTING

9.1 Auditing

Daily inspections will be carried out by operational area superintendents / supervisors covering a broad range of operational aspects, including cyanide management issues as appropriate to activities inside and outside the fence line.

Any incidents identified during these inspections will be reported to the incident management system (Component 10 of the ESMS).

Conformance will be monitored in accordance with Component 11 of the ESMS (Monitoring and Evaluation).

All incidents and non-conformances will be reported as per the requirements of the OMAS ESMS as described in the ESMS Framework Document (OMAS-ESMS-001).

9.2 External Auditing

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

Independent audits will also be undertaken in accordance with ICMC.

9.3 Record Keeping

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

Cyanide Management Framework

Effective Date: 01.04.2016	Document Number: OMAS-ESMS-CY-PLN-001	Rev: 1
-------------------------------	--	-----------

10 DOCUMENT CONTROL

File Name	Cyanide Management Framework
Document Number	OMAS-ESMS-CY-PLN-001
Approval Date	1 st March 2016
Version Number	1