



# Propane Dehydrogenation and Polypropylene Plant ESIA

Volume IV: ESMP and ESAP

October 2014

CB&I





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# Issue and revision record

<b>Revision</b>	<b>Date</b>	<b>Originator</b>	<b>Checker</b>	<b>Approver</b>	<b>Description</b>	<b>Standard</b>
A	July 2014	C Mills	L Morton	L Morton	Draft	
B	August 2014	C Mills	L Morton	L Morton	Disclosure Draft	
C	September 2014	C Mills	L Morton	L Morton	Disclosure Draft with budgets included	
D	October 2014	C Mills	L Morton	L Morton	Final	

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# 1 Introduction

## 1.1 Overview

The primary objective of an Environmental and Social Management Plan (ESMP) is to safeguard the environment, site staff and the local population from site activity which may cause harm or nuisance. This ESMP for the Project is intended to provide a framework to ensure transparent and effective monitoring, prevention, minimisation, mitigation, compensation and off-setting measures to address the environmental and social impacts associated with the Project. The mitigation measures described within this ESMP will be applied to the Propane Dehydrogenation (PDH) plant and the Polypropylene (PP) plant hereafter referred to as 'the Project'.

The management plan, which also covers monitoring, will therefore form the basis of the environmental and social protection measures implemented by KPI and Engineering, Procurement and Construction (EPC) contractor or Engineering, Procurement and Construction Management (EPCM) contractor. that will be employed. The implementation of the ESMP ensures that environmental, health and safety (EHS) and social performance is in accordance with international standards (including the Equator Principles, International Finance Corporation (IFC) Performance Standards, relevant IFC sector EHS guidelines, Japan Bank for International Corporations Guidelines for Environmental and Social Considerations, European Bank of Reconstruction and Development (EBRD) Performance Requirements and OECD common approaches) and best practice.

Where relevant this volume consolidates the mitigation requirements identified in the international ESIA process (presented in Volume II of the ESIA).

Responsibilities for implementation of identified mitigation or management actions are outlined in the ESMP and fall to either KPI or, depending on the final construction arrangements that are selected, the EPC contractor or EPCM contractor (hereafter referred to as EPC(M) contractor). Where responsibilities fall to the EPC(M) contractor, these should be implemented via a dedicated Construction Environmental Management Plan (CEMP) as part of their own Environmental, Health and Safety Management System (preferably accredited to ISO 14001:2004 or equivalent). It will be the responsibility of the EPC(M) contractor to implement the CEMP and monitor the implementation by any construction sub-contractor that may be employed. KPI will monitor, audit and assess the compliance of the EPC(M) contractor implementation of the CEMP during the construction phase and ensure that corrective actions are taken when necessary to maintain environmental and social performance in line with international standards.

KPI will be responsible for ensuring the Project complies with mitigation measures outlined within this document for the operational phase via its proposed environmental management system.

## 1.2 Background Information

The environmental management requirements presented in this document have been based on the findings of the following:

- Site visit and data collected from the Mott MacDonald site visit in April 2014
- The international ESIA prepared by Mott MacDonald (2014)
- The National EIA (OVOS) managed by Sinopec

- The Project Documentation (Stadiya Project) managed by Sinopec
- Front End Engineering Design (FEED) documents prepared by Sinopec
- Additional engineering documents prepared by CB&I.

## 1.3 Structure of ESMP and ESAP

Section 2 of this ESMP presents the various mitigation measures as identified through the ESIA process. For each mitigation measure, relevant standards are identified together with monitoring measures and key performance indicators. For each mitigation activity, an implementation route or sub-plan has been identified.

Section 3 provides further outline on the various implementation plans to be implemented as part of the ESMP by the EPC(M) contractor and monitored by KPI. The various implementation sub-plans are intended to ensure that the various mitigation measures / activities identified through the ESIA process are incorporated by the Project in a structured way with clear lines of responsibility and indicative budget identification / allocation.

Section 4 of this ESMP outlines the various institutional arrangements to be put in place by the project to enable the implementation of the ESMP and its various sub-plans. Where relevant, various capacity building measures have been identified to ensure that the various institutional arrangements are appropriate and qualified for the allocated tasks.

Section 5 of the ESMP provides an overview of monitoring and reporting requirements associated with the activities and commitments contained within the ESMP documentation. The monitoring and reporting requirements include a “management of change” capacity to the ESMP reflecting that it is intended to be a live document subject to regular review and update as the project evolves.

Section 6 of the ESMP identifies the overall indicative budget for implementation of the ESMP through construction and into operation. The budget as identified is subject to revision / change depending on evolution of various detailed plans but is considered to be broadly indicative of the level of commitment by the Project to mitigate environmental and social impacts identified through the ESIA process.

Appendix A constitutes the Environmental and Social Action Plan (ESAP) for the Project. It identifies the actions required, the basis of the requirement, the timing of the action, and the criteria to be used for determining whether the goal of the action has been successfully achieved.

## 2 Summary of Mitigation Measures

### 2.1 Overview

The mitigation measures as identified through the ESIA process are summarised in the following sub-sections split between the construction phase and the operations phase of the Project. The sub-sections are further split into specific discipline tables. Furthermore, relevant monitoring or key performance indicators are identified for each aspect of mitigation and an implementation route or sub-plan is identified. Specific sub-plans are detailed in the Section 3 of this ESMP.

### 2.2 KPI's Role

KPI will have the overall responsibility for the compliance of the Project during the construction and operational phases with the mitigation measures outlined within this ESMP. The EPC(M) contractor will be required to meet the specific requirements outline within this ESMP for the construction phase and this will be implemented through the use of contract clauses within agreements between KPI and the EPC(M) contractor.

KPI will monitor the EPC(M) contractor performance on a regular basis and will undertake the following throughout the duration of the construction period:

- Review contractor documents against the requirements of this ESMP;
- Undertake regular audits;
- Continuously check records;
- Set up a contractor reporting structure; and
- Conduct regular meetings where Environment Health and Safety (EHS) is an agenda item.

KPI will manage the EPC(M) contractor through a number of contract clauses. Clauses to be inserted in the EPC(M) contractor agreements will ensure compliance with this ESMP, KPI's existing policy and appropriate international requirements.

Prior to the construction phase KPI will review and approve the EPC(M) contractor CEMP(s) to ensure compliance with this ESMP. During the construction phase KPI will closely monitor all reports received from the EPC(M) contractor to monitor compliance.

Mitigation measures described for the operational phase will be implemented by KPI using the proposed system described in this document.

### 2.3 EPC(M) contractor Role

It will be the responsibility of the EPC(M) contractor to implement the construction phase mitigation measures outlined within this document through a dedicated CEMP and to ensure compliance of any construction sub-contractor(s) in meeting the requirements within it. The EPC(M) contractor will be required to undertake regular monitoring and inspections of the construction sub-contractor(s) and the Project site and will be required to keep up to date records as prescribed in this ESMP and report regularly to KPI.

## 2.4 Lenders Environmental and Social Consultant

The Lenders Environmental and Social Consultant (LESC) will periodically undertake checks during the construction and operational phase to ensure compliance of the Project with this ESMP. KPI and the EPC(M) contractor will be required make available all records of monitoring and meetings during any construction monitoring visits that the LESC may undertake.

## 2.5 Construction Mitigation Measures Summary

### 2.5.1 Introduction

The following sub-sections address individual project construction activities identifying specific mitigation and monitoring measures associated with environmental and social aspects where relevant and as required.

In a number of cases the assessment has indicated that the specific impacts during construction are expected to be sufficiently low such that no specific requirements for mitigation have been identified. However, good housekeeping practices in relation to these aspects will be implemented during construction.

Table 2.1 sets out the structure of construction related mitigation activities as presented over the following sub-sections.

Table 2.1: Construction ESMP Structure

Sub-Section	Discipline
2.5.2	Social Management
2.5.3	Air Quality Management
2.5.4	Ground Conditions Management
2.5.5	Water Resources and Water Quality Management
2.5.6	Ecology and Biodiversity Management
2.5.7	Materials and Waste Management
2.5.8	Transport Management
2.5.9	Noise and Vibration Management
2.5.10	Greenhouse Gas Management
2.5.11	Archaeology and Cultural Heritage Management

## 2.5.2 Social Management

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring/KPI	Responsibility /Implementation
C1	Equal opportunities in local employment benefits	Recruitment	<ul style="list-style-type: none"> <li>Recruitment Policy</li> <li>Contract clauses for EPC(M) contractor to hire people from Affected Communities</li> </ul>	Kazakhstan Labour Code IFC PS2 EBRD PR2	Disclosed Recruitment Policy in site office/KPI recruitment office, Atyrau Akimat, via village Akim and on project website. Review of contract extracts.	EPC(M) contractor to align with KPI Recruitment Policy through CEMP.
C2	Promote development and benefits for local people	Information disclosure on recruitment and supply chain opportunities	<ul style="list-style-type: none"> <li>Regular bulletins with descriptions of employment and supply chain opportunities to local people and businesses, including information about required skill levels, indicative timeframes for recruitment and likely duration of contracts.</li> <li>Bulletins to be disclosed in employment centres, newspapers and via village Akim, and Recruitment Policy to be referred to in job adverts.</li> </ul>	IFC PS1 EBRD PR1	Copies of bulletins, newspaper clippings, photos of posted bulletins.	EPC(M) contractor Recruitment/ Human Resources.
C3	Promote development and benefits for local people	Training programme and transportation	<ul style="list-style-type: none"> <li>Provide basic skills training including health and safety training, assistance with what to expect in the recruitment process, specific task familiarisation and money management skills for jobseekers from Affected Communities (ACs) particularly Karabatan Station.</li> <li>Inclusion of women.</li> <li>Provide transport for workers from Karabatan Station to the Project workplace.</li> </ul>	IFC PS1 EBRD PR1	Training attendance lists with trainees' origin recorded. Lists of numbers of people from ACs recruited on the Project, type of work, duration of employment and reasons for end of employment if applicable. Interviews with workers.	KPI Recruitment/ Human Resources. EPC(M) contractor CEMP
C4	Managing possible influx of workers and population changes	Potential recruitment of workforce from outside of Project wider area of influence	<ul style="list-style-type: none"> <li>Further assessment if a large foreign workforce is likely to be applied</li> <li>Code of Conduct for all workers included as part of the employment contract</li> <li>Cultural awareness training for workers</li> <li>Cultural awareness events for communities.</li> <li>HIV/AIDS and STI awareness and</li> </ul>	IFC PS4 EBRD PR4	Assessment report and actions. Code of Conduct included in workers' employment contracts. Records, meeting minutes and photos kept of training and events. Interviews with workers.	KPI Recruitment/ Human Resources.

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring/KPI	Responsibility /Implementation
			prevention briefings			
C5	Fair treatment, non-discrimination and equal opportunity of workers	Labour management	<ul style="list-style-type: none"> <li>Update of KPI's Corporate Human Resources (HR) Policy to reflect IFC/EBRD requirements.</li> <li>Individual contracts of employment for all workers, detailing workers' rights and conditions related to hours of work, wages, overtime, compensation and benefits such as maternity or annual leave. Update contracts when material changes occur.</li> <li>Develop a Project HR Policy in line with the requirements of IFC PS2 and EBRD PR2.</li> <li>Require, through contract clauses, the EPC(M) contractor to manage the Project workforce in accordance with the Project Human Resources Policy and their individual contracts of employment.</li> <li>Monitoring of labour rights and workforce profile.</li> <li>Quarterly external labour audits.</li> <li>Hold toolbox talks on safety, labour issues and the labour grievance mechanism twice a year during the construction phase.</li> <li>Supply chain review for issues of child or forced labour and OHS risks. Quarterly review updates and action on any issues identified.</li> </ul>	Kazakhstan Labour Code IFC PS2 EBRD PR2 and 4	<p>External monitoring visits quarterly during construction to verify implementation of policies and plans.</p> <p>Corporate HR Policy.</p> <p>Personnel files to contain confidential information as per Kazakhstan requirements for each worker and certificates and qualifications, internal and external training, leave records, record of past abuse/criminal record for security workers.</p> <p>Records of all employees and their pre-project status including their employment status (previously un/employed, underemployed, employed in informal sector, skilled, unskilled etc), home village/town, ethnicity, gender, age, start and end date of employment.</p> <p>Payroll and timesheet records to be maintained and sub-contractor(s)' payroll system monitored by EPC(M) contractor</p> <p>Project HR Policy.</p> <p>Contract clauses and inclusion of HR Policy and Worker Code of Conduct in tender documents.</p> <p>Records of toolbox talks.</p> <p>Document supply chain reviews, issues identified and actions taken.</p>	<p>KPI Corporate HR Policy.</p> <p>EPC(M) contractor and KPI HR Departments to issue individual contracts.</p> <p>KPI Project Human Resource Policy.</p> <p>Contractor Toolbox talks.</p> <p>Supply chain review by KPI.</p>
C6	Resolution of workplace concerns	Labour management	<ul style="list-style-type: none"> <li>Develop, formalise and disclose worker grievance policies and mechanism for complaints, without reprisal and make these available to all Project workers, including sub-contracted staff.</li> </ul>	IFC PS2 EBRD PR2	<p>Documented labour grievance mechanism.</p> <p>Document how workers are informed about the mechanism.</p> <p>Maintenance of grievance log, including resolutions and timeframes.</p> <p>Monthly monitoring of grievance logs by KPI HR Department to identify patterns or area where actions can be taken to prevent recurrent problems.</p>	EPC(M) contractor and KPI both to have labour grievance mechanism.

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring/KPI	Responsibility /Implementation
					Annual summary of use of grievance mechanism and resolution of labour grievances	
C7	Safeguarding health and safety of workers	Occupational Health and Safety (OHS) management	<ul style="list-style-type: none"> <li>• KPI to assign EHS Director and support staff to manage OHS. KPI EHS Director and support staff to:                             <ul style="list-style-type: none"> <li>– Assess risks to workers’ health and safety and implement preventive and protective measures.</li> <li>– Carry out daily site walkovers to identify hazards and act on findings.</li> <li>– Hold meetings with EPC(M) contractor to discuss OHS improvements and PPE.</li> <li>– Monitor EPC(M) contractor training provision and records.</li> <li>– Keep central record of all incidents, accidents and occupational diseases or ill health. Follow up to resolve issues and prevent recurrence.</li> </ul> </li> </ul>	IFC PS1/PS2 EBRD PR1/PR2 All applicable IFC EHS Guidelines	Organogram. Records of risk assessments, site walkovers, identification of OHS and PPE compliance issues and actions to remedy. Minutes of meetings. Confidential health records for Project workers will be maintained, including HIV/AIDS and TB test results, medical results and occupational injury or disease. These records will be aggregated and made anonymous for review by external parties. Logs showing incidents, accidents and occupational diseases or ill health with supporting investigation and response details.	KPI staffing
C8	Safeguarding health and safety of workers	OHS management	<ul style="list-style-type: none"> <li>• OHS Plan<sup>1</sup>.</li> <li>• Training programme for all workers including OHS training, use of PPE, specific task health and safety, first aid training, driver training.</li> <li>• Individual training registers for each employee which they can retain for obtaining future work.</li> <li>• Undertake medical testing for any fit-to-work assessment needs during recruitment process and at no extra cost to candidates.</li> <li>• HIV/AIDS awareness and prevention briefings and screenings.</li> </ul>	IFC PS2 EBRD PR2 All applicable IFC EHS Guidelines	OHS Plan Training records to be maintained for: <ul style="list-style-type: none"> <li>– OHS and hazardous work training</li> <li>– Emergency drills</li> <li>– Security guards</li> <li>– Toolbox talks</li> <li>– HIV/AIDS awareness sessions</li> <li>– Driver training</li> </ul> External monitoring visits quarterly during construction to verify implementation of plans. Individual training registers.	EPC(M) contractor EHS Plans, OHS Plan and EPRP. EPC(M) contractor to provide training to their own workers, KPI to monitor content and provision. KPI and EPC(M) contractor to maintain records for their own employees. KPI to undertake

<sup>1</sup> Covering the hazards identified for the Project site, type of work and other Project activities such as driving on public roads; provision of preventive and protective measures for all hazards; health and safety training including how to recognise hazards, unsafe areas and occupational disease or injury; information about safe working methods including the production of individual worksheets for discreet hazardous tasks; use of PPE; management, storage, handling and movement of hazardous chemicals; and road safety measures such as speed limits on public roads and on site, etc.

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring/KPI	Responsibility /Implementation
			<ul style="list-style-type: none"> <li>• TB screenings</li> <li>• Personnel files to include next of kin details.</li> <li>• Monthly contact with Atyrau Plague Control Station</li> <li>• Provision of medical insurance for workers</li> <li>• Emergency Preparedness and Response Plan (EPRP)<sup>2</sup>.</li> <li>• Emergency Response Teams.</li> <li>• Supply chain review for issues of child or forced labour and OHS risks. Quarterly review updates and action on any issues identified.</li> <li>• Adequate medical facilities to be provided – first aid kits, trained first aid personnel on site.</li> </ul>		<p>Confidential records of medicals.</p> <p>Personnel files.</p> <p>Documented correspondence with Plague Control Station.</p> <p>Medical insurance certificates.</p> <p>EPRP.</p> <p>Document supply chain reviews, issues identified and actions taken.</p> <p>Visual evidence of first aid kits and emergency response teams.</p>	supply chain review.
C9	Safeguarding health, safety, security and wellbeing of workers and communities	Labour management	<ul style="list-style-type: none"> <li>• Workers' Accommodation Plan and provision of accommodation if it is required depending on final construction arrangements.</li> <li>• Attention paid to safe provision of food and water.</li> </ul>	<p>Kazakhstan laws</p> <p>IFC PS2</p> <p>EBRD PR2</p> <p>Workers' accommodation processes and standards, a guidance note by IFC and the EBRD (Appendix F Volume III)</p>	<p>Workers' Accommodation Plan</p> <p>KPI Health and Safety Manager to inspect accommodation monthly using IFC/EBRD checklist.</p> <p>Checklists kept on record.</p> <p>Action plan to address issues and timeframes for resolution of issues recorded and kept on file.</p> <p>External monitoring as part of labour monitoring.</p>	<p>EPC(M) contractor to develop Workers' Accommodation Plan.</p> <p>Monitoring by KPI and external monitor.</p>
C10	Safeguarding health, safety, security and wellbeing of workers and communities	Labour management	<ul style="list-style-type: none"> <li>• Worker Code of Conduct to govern worker behaviour on site, in the accommodation and in ACs.</li> </ul>	<p>IFC PS2/PS4</p> <p>EBRD PR2/PR4</p>	<p>List of signatures to show that workers have received and understood the Code of Conduct to be maintained.</p>	<p>KPI and EPC(M) contractor Code of Conduct</p>

<sup>2</sup> Covering risks to workers in emergencies, dealing with fire, explosions, chemical spill or accidental discharge, road accidents, serious personal injury, etc.



No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring/KPI	Responsibility /Implementation
C11	Safeguarding health, safety, security and wellbeing of workers and communities	Contractor management	<ul style="list-style-type: none"> <li>• Clauses to be inserted in EPC(M) contractor agreements to ensure compliance with the following KPI documentation and procedures:                             <ul style="list-style-type: none"> <li>– Human Resources Policy and Procedures</li> <li>– Issuing of individual worker contracts of employment</li> <li>– Workers’ Accommodation Plan</li> <li>– Labour Grievance Mechanism</li> <li>– Worker Code of Conduct</li> <li>– Worker Health and Safety Plan</li> <li>– Emergency Preparedness and Response Plan.</li> </ul> </li> <li>• EPC(M) contractor to be made aware of their role in compliance with IFC PS2, EBRD PR2 and IFC EHS Guidelines</li> <li>• EPC(M) contractor to supply EHS Manager</li> </ul>	IFC PS2/PS4 EBRD PR2/PR4	Contract extracts. Minutes of meetings. EPC(M) contractor organograms.	KPI to put contracts clauses into EPC(M) contractor contracts and EPC(M) contractor to put clauses into sub-contractors contracts
C12	Safeguarding health, safety, security and wellbeing of local communities	Presence of construction site, construction workforce and accommodation	<ul style="list-style-type: none"> <li>• Security arrangements including fencing, locks, security guards, CCTV, signage.</li> <li>• All security guards to be vetted and their records checked for past abuse, and trained in the use of force and use of equipment. Regular refresher training, recorded in logs.</li> <li>• Uniforms and ID provided to security guards.</li> <li>• Logging system to monitor entries to sites.</li> <li>• Investigation of unlawful behaviour by security guards, action taken and reports made to authorities if necessary.</li> <li>• Vehicles to carry spill kits, first aid kits and fire extinguishers, drivers to have mobile phones for emergency use and be first-aid trained.</li> <li>• EPRP to be prepared in collaboration with</li> </ul>	Kazakhstan Law IFC PS4 EBRD PR4	Security guards’ records for past abuses kept in personnel files. Training records. Site entry and exit logs. Logs of security incidents and actions to remedy. Monitoring of grievance logs to identify if complaints are made about security guards. Action taken and recorded. Vehicle checks.	EPC(M) contractor EHS Plans. EPC(M) contractor EPRP. Community grievance mechanism to be implemented by EPC(M) contractor with oversight by KPI.

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring/KPI	Responsibility /Implementation
			Karabatan Station and Atyrau City to establish actions and contacts. Quarterly review.			
C13	Offsetting effects or perceived effects related to loss of grazing land and disturbance, reduction of conflict risk	Community investment	<ul style="list-style-type: none"> <li>Gender-sensitive Community Investment Policy, to be disclosed</li> <li>Gender sensitive Community Investment Programme developed in consultation with men and women at Karabatan Station</li> <li>Consultation on Good Neighbour Agreement</li> </ul>	IFC PS1/PS5 EBRD PR1/5	<p>Evidence of policy disclosure.</p> <p>Evidence of consultation on community investment and Good Neighbour Agreement (minutes of meetings, photos, attendance lists).</p> <p>Community investment plan and evidence of implementation (visual observation of projects, interviews with communities).</p>	<p>KPI's Community Investment Policy and Plan</p> <p>Good Neighbour Agreement</p> <p>Community meetings</p>
C14	Safeguarding health, safety, security and wellbeing of local communities	Stakeholder engagement and grievance management	<ul style="list-style-type: none"> <li>Updates to and implementation of Stakeholder Engagement Plan (SEP) and Project performance grievance mechanism.</li> <li>Community Liaison Officer (CLO) to carry out analysis of grievance log to identify common or recurrent problems.</li> <li>CLO to follow-up grievance issues with Project Manager and EPC(M) contractor to deal with the causes and identify actions to prevent further recurrence.</li> </ul>	IFC PS1 EBRD PR10	<p>Grievance log.</p> <p>Minutes of meetings.</p> <p>Disclosed information dated and kept on file.</p> <p>Records as per SEP.</p>	<p>KPI to implement SEP.</p> <p>Project performance grievance mechanism to be implemented by EPC(M) contractor with oversight by KPI.</p>

### 2.5.3 Air Quality Management

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring / KPI	Implementation Route / Plan
C15	Minimise dust emissions to prevent nuisance and protect human health	Additional land clearing and construction activities. Traffic and onsite vehicle movements	<ul style="list-style-type: none"> <li>Minimising dust from material handling sources, such as excavators, conveyors and bins, by using covers and/or control equipment such as wind breaks.</li> <li>Minimising dust from open sources, including storage piles, by using control measures such as installing enclosures and covers, and increasing the moisture content.</li> <li>Keep all vehicle movements on site to designated haul routes and employ dust suppression techniques such as applying non-toxic chemicals to minimise dust emissions.</li> <li>Development of a Dust Management Plan (DMP).</li> <li>No open burning of solid waste.</li> <li>Install wind breaks to minimise wind blows dust</li> </ul>	<p>IFC EHS General Guidelines on Air Emissions and Ambient Air Quality</p> <p>IFC PS3 - Resource Efficiency and Pollution Prevention</p> <p>EBRD PR3 – Pollution Prevention and Abatement</p>	<p>EPC(M) contractor Environmental Officer to undertake visual checks of construction areas every two weeks.</p> <p>EPC(M) contractor Environmental Engineer to undertake daily visual inspections</p> <p>Maintain a record of high dust incidents and record any violations where observed. In the event high dust levels are as a result of poor site management EPC(M) contractor to impose disciplinary action on construction sub-contractor.</p>	<p>Construction Environmental Management Plan (CEMP) to be developed by EPC(M) contractor.</p> <p>EPC(M) contractor to develop a Dust Management Plan.</p> <p>CEMP and Dust Management Plan to be implemented by construction sub-contractor</p>
C16	Minimise construction machinery / vehicle emissions to protect human health	Construction traffic and machinery associated with construction	<ul style="list-style-type: none"> <li>Manage emissions from mobile sources as per IFC EHS guidelines for Air Emissions and Ambient Air Quality.</li> <li>Locate generators away from receptors such as onsite offices</li> </ul>	<p>IFC EHS General Guidelines on Air Emissions and Ambient Air Quality</p> <p>IFC PS3</p> <p>EBRD PR3</p>	<p>EPC(M) contractor Environmental Engineer to undertake visual checks of construction vehicles every two weeks (violation to be reported only).</p> <p>EPC(M) contractor to keep a copy of all servicing records for all machinery.</p>	<p>CEMP to be developed and implemented by EPC(M) contractor.</p>

### 2.5.4 Ground Conditions Management

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring/KPI	Implementation Route/Plan
C17	Protection of human health through reduction of dust mobilisation	Earthworks/ intrusive construction works	<ul style="list-style-type: none"> <li>• Use best practice construction methodology in line with local regulations and international guidelines.</li> <li>• Follow the Dust Management Plan</li> <li>• Avoid undertaking earthworks during periods of high wind.</li> <li>• Risk assessment to identify the level of PPE required for construction workforce</li> <li>• Workers to wear PPE to protect against inhalation of dust depending on outcome of risk assessment.</li> <li>• Use mitigation measures such as wind breaks and nontoxic chemicals during excavation and movement of soils to prevent dust migration.</li> </ul>	<p>Kazakhstan Law</p> <p>IFC EHS General Guidelines</p> <p>IFC PS3 – Resource Efficiency and Pollution Prevention</p> <p>EBRD PR3 – Pollution Prevention and Abatement</p>	<p>Weekly monitoring to be carried out by the EPC(M) contractor Environmental Engineer and two weekly monitoring by KPI Environmental and Social Manager.</p> <p>Quarterly external monitoring during construction.</p> <p>Records of risk assessments, site walkovers, identification of OHS and PPE compliance issues and actions for any non-compliance.</p>	EPC(M) contractor to develop CEMP and to implement
C18	Protection of soil quality, groundwater quality and human health.	Accidental leaks and spills of hazardous chemicals	<ul style="list-style-type: none"> <li>• Use best practice construction methodology in line with Kazakhstan regulations and international guidelines.</li> <li>• Hazardous materials suitably stored to prevent leaks and spills.</li> <li>• Drip trays to intercept leaks and spills from equipment and during refuelling.</li> <li>• Bunding of at least 110% of the largest storage container for all fuel and chemical storage.</li> <li>• Develop Emergency Preparedness and Response Plan (EPRP).</li> <li>• Develop Spill Management Plan in accordance with local regulations and IFC EHS guidance.</li> <li>• Spill response kits to be maintained at</li> </ul>	<p>Kazakhstan Law</p> <p>IFC EHS General Guidelines</p> <p>IFC PS3</p> <p>EBRD PR3</p>	<p>Undertake routine monitoring on soil and water quality using existing baseline values.</p> <p>Undertake routine groundwater quality monitoring (comparing with existing baseline levels) – to provide an early warning system for impacts to groundwater down gradient of the site.</p> <p>Site inspections by KPI Environmental and Social Manager and inspection reports to be made available to Lenders Environmental and Social Consultant.</p>	<p>EPC(M) contractor to develop CEMP and to implement</p> <p>EPC(M) contractor to develop EPRP and to implement</p> <p>EPC(M) contractor to develop Spill Response Plan and to implement</p>

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring/KPI	Implementation Route/Plan
			<p>appropriate locations on site and protocols for their use and training undertaken for dedicated spill response teams</p> <ul style="list-style-type: none"> <li>Clean-up contaminated material in case of fuel and hazardous chemical leaks.</li> </ul>			
C19	Protection of soil quality, groundwater quality and human health.	Waste water from construction phase and integrity testing and cleaning of process equipment during commissioning	<ul style="list-style-type: none"> <li>Use best practice construction methodology in line with local regulations and international guidelines.</li> <li>All waste water requiring treatment to be stored and treated offsite until the IPC's WWTP is operational. No water to be discharged to ground.</li> </ul>	<p>Kazakhstan Law</p> <p>IFC EHS General Guidelines</p> <p>IFC PS3</p> <p>EBRD PR3</p>	Regular site inspections during construction phase and equipment testing by KPI and EPC(M) contractor	EPC(M) contractor to develop CEMP and to implement

**2.5.5 Water Resources and Water Quality Management**

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring / KPI	Implementation Route / Plan
C20	Protection of temporary surface water quality for the environment and to protect groundwater from contamination and sedimentation	Temporary storage of chemicals, oil and excavated material	<ul style="list-style-type: none"> <li>• Use of hard covered, bunded areas for storage of liquids and refuelling,</li> <li>• Oil interceptors in areas where fuel is used or stored,</li> <li>• Provision of spill kits and protocols for their use and appropriate disposal to minimise the impacts of any spillages.</li> <li>• Potentially contaminated surface drainage and site runoff, particularly during any snow melt periods to be stored.</li> <li>• Store excavated material away from drains.</li> <li>• Cover stock piles.</li> <li>• The quality of drainage waters not to exceed maximum allowable concentrations for discharge of waste water to surface water.</li> </ul>	IFC EHS General Guidelines and relevant sector guidelines.	<p>No spills affecting surface water quality.</p> <p>KPI to audit storage areas against mitigation requirements, for example, check availability of spill kits, adequate bunded storage for chemicals and fuels.</p> <p>EPC(M) contractor to Monitor drainage water, results to be reported in monthly construction progress reports and made available to KPI and Lenders Environmental and Social Consultant.</p>	EPC(M) contractor CEMP.

**2.5.6 Ecology and Biodiversity Management**

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring / KPI	Implementation Route / Plan
C21	Minimise habitat loss and disturbance	Construction lay down, layout of associated infrastructure and temporary working areas, including workers accommodation	<ul style="list-style-type: none"> <li>Design layout of workers accommodation and location of laydown to use existing cleared areas to minimise habitat loss.</li> <li>Minimise temporary working area size.</li> <li>Access routes for construction and operational activities outside the existing industrial area (if required) to be kept to a minimum.</li> <li>Artificial lighting used on construction sites and workers accommodation will be minimised, shaded and directed downwards to avoid light spillage and disturbance to birds, bats and other wildlife.</li> </ul>	<p>IFC PS6</p> <p>EBRD PR6</p>	<p>Monthly audit of construction areas.</p> <p>All laydown and working areas to be within pre-determined areas.</p>	EPC(M) contractor CEMP.
C22	Minimise disturbance to mammals, birds and bats	<p>Vegetation clearance.</p> <p>Noise and light from construction activities.</p>	<ul style="list-style-type: none"> <li>Tool box talks for construction staff on nesting birds</li> <li>Any vegetation clearance must be undertaken outside of the bird nesting period (main breeding season is between April to July).</li> <li>Where clearance is not possible outside the breeding season, a check for breeding birds and active nests by a qualified ecologist will be undertaken within 48 hours of vegetation clearance.</li> <li>If breeding birds are discovered works will be postponed in that area until the breeding cycle is complete (this may take up to three weeks)</li> <li>A species specific buffer zone (minimum 25 m) will be set up around the nest site.</li> <li>Minimise noise disturbance by using modern, lower noise, equipment and compliance with national noise standards.</li> <li>Minimise noisy working at night and use down lighting to prevent light pollution when artificial lighting is required.</li> </ul>	<p>IFC PS6</p> <p>EBRD PR6</p>	<p>Review and update, as necessary, pre-works nesting bird assessments.</p> <p>Nesting bird check for construction activities during breeding season.</p> <p>Daily monitoring and monthly audit of construction activities.</p> <p>Report on number of incidents where noise levels exceed international requirements.</p>	EPC(M) contractor CEMP
C23	Control of invasive plant and animal	Vegetation clearance, earthworks, and spoil disposal during construction.	<ul style="list-style-type: none"> <li>Minimise traffic and the distance it has travelled.</li> <li>Source goods / materials locally where possible.</li> </ul>	<p>IPIECA Guidelines on prevention and management of alien</p>	<p>Report detailing the extent of existing alien species across the site.</p>	EPC(M) contractor CEMP

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring / KPI	Implementation Route / Plan
	species		<ul style="list-style-type: none"> <li>Contain any Alien Invasive Species (AIS) and report their presence through monitoring.</li> <li>If infested areas are identified a wash-down area is essential before entering non-infested areas.</li> <li>Train and raise awareness regarding AIS.</li> <li>Pressure wash vehicle tyres in a contained area and contain and destroy residue</li> <li>Record and report the presence of any AIS.</li> <li>Minimize disturbance to, or movement of, soil and vegetation.</li> <li>Ensure imported soil/other materials are safe and free of AIS (source from a reputable supplier, request information on the soil's origin and certification of AIS-free status if possible).</li> <li>Prevent AIS establishment on exposed stored soil (do not store bare soil near known sources of AIS, consider using matting to cover exposed soil).</li> <li>Retain as much natural vegetation as possible.</li> <li>Use native plants for reinstatement and landscaping.</li> <li>If invasive species is identified as an issue further details including additional mitigation to be included within the CEMP.</li> <li>Annual summer visual inspection by experienced biologist/botanist to identify presence of invasive species, species to be removed by appropriate means if found.</li> </ul>	species	<p>Production of the report including monitoring plan.</p> <p>Annual / Extent of invasive species distribution at project site.</p>	

**2.5.7 Materials and Waste Management**

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring/KPI	Implementation Route/Plan
C24	Protection of	Waste	<ul style="list-style-type: none"> <li>Develop a Site Waste Management Plan (SWMP).</li> </ul>	Kazakhstan	Regular site inspections.	EPC(M) contractor Site



No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring/KPI	Implementation Route/Plan
	environment from leakage or spillage of wastes  Prevention of fugitive emissions  Prevention of negative visual amenity impacts	generation, handling and storage	<ul style="list-style-type: none"> <li>Identify suitable temporary storage locations for each waste stream. Both the onsite and offsite waste storage facilities will include the following:                             <ul style="list-style-type: none"> <li>Separate storage areas for hazardous and non-hazardous wastes.</li> <li>Separate skips or containers for each waste stream to allow segregation in order to maximise re-use and recycling opportunities.</li> <li>All skips and waste containers to have a suitable covers</li> <li>Liquid wastes/oil/chemicals to be stored in tanks or drums located in banded areas which can hold 110% of the total storage volume.</li> <li>Spill kits containing suitable equipment in line with national and internal requirements to be available at all times in waste storage areas.</li> </ul> </li> <li>The EPC(M) contractor will develop a spill control, prevention and counter measure plan and the EPRP.</li> </ul>	Law  IFC EHS General Guidelines  IFC PS3  EBRD PR3	Monitoring reports to be made available to external monitors.	Waste Management Plan (SWMP).  EPC(M) contractor Hazardous Materials Management Plan (HMMP)
C25	Minimise use of landfill  Minimise waste miles	Waste disposal	<ul style="list-style-type: none"> <li>Characterise each waste stream as either hazardous with hazardous class definition or non-hazardous.</li> <li>Minimise waste production.</li> <li>Where waste streams are unavoidable, highlight potential re-use and recycling opportunities according to the Best Available Technologies (BAT).</li> <li>Identify waste handling and recycling facilities in close proximity to the Project that meet international standards.</li> <li>Review on an on-going basis the locally available re-use/recycling facilities to ensure they can accept the waste streams.</li> </ul>	Kazakhstan Law  IFC EHS General Guidelines  IFC PS3  EBRD PR3	Monitoring reports to be made available to external monitors.  Documentation of efforts to reduce waste and identify nearby handling and reuse / recycling facilities.	EPC(M) contractor SWMP
C26	Protection of workers health	Handling hazardous materials	<ul style="list-style-type: none"> <li>A comprehensive Occupational Health and Safety Plan (OHS Plan) aimed at preventing accidents, injuries and work-related diseases through the identification of the causes of physical, chemical and biological hazards and by prioritising hazard elimination, hazard control and hazard minimisation to be implemented</li> </ul>	IFC PS2  EBRD PR2	Records of incidents	EPC(M) contractor OHS Plan

**2.5.8 Transport Management**

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring / KPI	Implementation Route / Plan
C27	Minimise delays to road other road users	Delivery of construction materials, abnormal loads and transport of workers	<ul style="list-style-type: none"> <li>EPC(M) contractor to implement and develop a detailed Construction Traffic Management Plan (CTMP).</li> </ul>	National laws and permitting requirements	<p>EPC(M) contractor CEMP and Traffic Management Plan to ensure continuity with commitment in this ESMP.</p> <p>EPC(M) contractor CEMP including traffic management plan as part of audit programme.</p> <p>Reporting of accidents and statistics by EPC(M) contractor to KPI.</p>	<p>EPC(M) contractor CEMP</p> <p>EPC(M) contractor Traffic Management Plan.</p>
C28	Minimise wear and tear on local roads	Delivery of construction materials, abnormal loads and transport of workers	<ul style="list-style-type: none"> <li>EPC(M) contractor to enter into a voluntary agreement with the relevant highways authority to reimburse the cost of any repairs required to the public highway network as a result of the Project.</li> <li>EPC(M) contractor to make improvements to roads as identified by KPI's pre-construction survey</li> </ul>	International Best Practice	EPC(M) contractor will undertake pre and post-construction surveys of the affected stretches of public highway as agreed with the relevant highways authority	EPC(M) contractor Traffic Management Plan
C29	Safeguard the safety of vulnerable road users on the local roads and of residents at any settlements affected by construction	Delivery of construction materials, abnormal loads and transport of workers	<ul style="list-style-type: none"> <li>EPC(M) contractor to develop a Traffic Management Plan (TMP) and will where possible design all delivery routes away from settlements.</li> <li>All vehicles to adhere to speed limits at all times.</li> </ul>	International Best Practice	KPI to review the TMP	EPC(M) contractor Traffic Management Plan

**2.5.9 Noise and Vibration Management**

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring / KPI	Implementation Route / Plan
C30	Avoid noise nuisance generated by on-site plant and activities	Site preparation excavation and foundations, construction	<ul style="list-style-type: none"> <li>Select low noise plant and equipment.</li> <li>Plant and equipment to be examined on a daily basis for defects prior to the start of works and under no circumstances should defective plant be used.</li> <li>Avoid unnecessary revving of engines.</li> <li>Plant and equipment to be switched off when not in use.</li> <li>Noisy activities to be limited to daytime working hours where possible.</li> <li>Plant and equipment to be positioned as far as possible from sensitive areas.</li> <li>Location of static plant to take advantage of any screening to break the line of sight from receptors.</li> <li>Site operatives to be briefed in keeping noise to a minimum.</li> </ul>	IFC EHS General Guidelines on Noise Management	<p>Requirement for any construction sub-contractor(s) to implement mitigation as part of EPC(M) contractor contracts.</p> <p>EPC(M) contractor to monitor noise levels using sound level meter at the nearest residential properties to construction activities and the Prison for comparison against standards. Maintain monitoring records.</p> <p>Record and investigate complaints using sound level meter via the community grievance mechanism.</p>	<p>EPC(M) contractor CEMP</p> <p>EPC(M) contractor Community Grievance Mechanism.</p>
C31	Avoid noise nuisance generated by construction traffic	Movement of construction vehicles and traffic	<ul style="list-style-type: none"> <li>Limit vehicle speeds on site.</li> <li>Traffic on site should be managed to avoid the need to queue up or wait with engines running.</li> <li>Sensitive routing of vehicles and selection of site access points to avoid disturbance of local communities.</li> <li>Maintain all onsite site roads to minimise discontinuities in the road surfaces and avoid body slap noise from heavy vehicles.</li> </ul>	Kazakhstan Standards / IFC EHS Guidelines	EPC(M) contractor to record and investigate complaints using sound level meter via the community grievance mechanism and report back to KPI	<p>EPC(M) contractor CEMP</p> <p>EPC(M) contractor Community Grievance Mechanism.</p>

### 2.5.10 Greenhouse Gases Management

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring/KPI	Implementation Route/Plan
C32	Reduce GHG emissions	Use of vehicles, construction plant and generators with emissions.	<ul style="list-style-type: none"> <li>Use of new and efficient vehicles and construction plant and generators. All equipment should be maintained and switched off when not in use.</li> </ul>	IFC EHS Guidelines	<p>EPC(M) contractor to provide evidence of new plant being employed, record of plant maintenance.</p> <p>EPC(M) contractor to provide fuel consumption figures in monthly reports to KPI.</p>	EPC(M) contractor CEMP.
C33	Reduce GHG emissions	Staff vehicle movements	<ul style="list-style-type: none"> <li>Transportation scheme for workers and operation staff.</li> </ul>	IFC EHS Guidelines	Options for joint pick up made available to workers.	EPC(M) contractor Traffic Management Plan

### 2.5.11 Archaeology and Cultural Heritage Management

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring / KPI	Implementation Route / Plan
C34	Avoid damage to archaeological and cultural heritage features. Record archaeological finds	Excavation works during construction phase	<ul style="list-style-type: none"> <li>Identify and avoid sensitive areas.</li> <li>Develop chance finds procedure</li> </ul>	<p>World Bank's Physical Cultural Resources Policy Guidebook</p> <p>IFC PS 8 – Cultural Heritage Physical Cultural Resources Safeguard Policy — Guidebook</p>	<p>KPI to review EPC(M) contractor CEMP and Chance Finds Procedure to ensure continuity with commitment in this ESMP.</p> <p>KPI audit of EPC(M) contractor CEMP including Chance Finds Procedure as part of audit programme.</p>	<p>EPC(M) contractor CEMP.</p> <p>EPC(M) contractor Chance Finds Procedure.</p>

## 2.6 Operation Mitigation Measures Summary

### 2.6.1 Introduction

The following sub-sections address individual project operation activities identifying specific mitigation and monitoring measures associated with environmental and social aspects where relevant and as required.

Table 2.2 sets out the structure of the operations related mitigation activities as presented over the following sub-sections.

Table 2.2: Operation ESMP Structure

Sub-Section	Discipline
2.6.2	Social Management
2.6.3	Air Quality Management
2.6.4	Ground Conditions Management
2.6.5	Water Resources and Water Quality Management
2.6.6	Ecology and Biodiversity Management
2.6.7	Materials and Waste Management
2.6.8	Transport Management
2.6.9	Noise and Vibration Management
2.6.10	Greenhouse Gas Management

**2.6.2 Social Management**

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring/KPI	Implementation Route/Plan
O1	Promote development and benefits for local people	Information disclosure on recruitment	<ul style="list-style-type: none"> <li>Regular bulletins with descriptions of supply chain opportunities to local businesses, including information about required skill levels, indicative timeframes for procurement and likely duration of contracts.</li> <li>Bulletins to be disclosed in employment centre, newspapers and via Rural Settlement Deputies (see Stakeholder Engagement Plan).</li> </ul>	IFC PS1 EBRD PR1	Copies of bulletins, newspaper clippings, photos of posted bulletins.	KPI Recruitment/ Human Resources.
O2	Promote development and benefits for local people / minimise social conflict over jobs	Information disclosure on recruitment	<ul style="list-style-type: none"> <li>Include labour profile, other local content information, and community investment activities in annual sustainability report.</li> </ul>	IFC PS2 EBRD PR2	Annual reports.	KPI Recruitment/ Human Resources.
O3	Promote development and benefits for local people	Skills development training	<ul style="list-style-type: none"> <li>Training for existing staff and local people to enable them to take advantage of new job opportunities</li> </ul>	Kazakhstan Labour Code IFC PS2 EBRD PR2	People receiving training, certificates and resultant employment to be recorded with home town, gender, ethnicity and age data for each. Workers' certificates.	Training Programme to be developed by KPI training centre.
O4	Fair treatment, non-discrimination and equal opportunity of workers	Labour management	<ul style="list-style-type: none"> <li>Individual contracts of employment for all workers</li> <li>Require, through contract clauses for labour services in accordance with the Project Human Resources Policy and their individual contracts of employment.</li> <li>Hold toolbox talks on labour issues and the labour grievance mechanism annually during the operations phase.</li> <li>Labour grievance mechanism.</li> </ul>	Kazakhstan Labour Code IFC PS2 EBRD PR2	Corporate HR Policy. Personnel files to contain confidential information as per Kazakhstan requirements for each worker and certificates and qualifications, internal and external training, leave records, record of past abuse/criminal record for security workers. Records of all employees and their pre-project status including their employment status (previously un/employed, underemployed, employed in informal sector, skilled, unskilled etc), home village/town, ethnicity, gender, age, start and end date of employment.	KPI's Corporate HR Policy. KPI HR Department to issue contracts. Project HR Policy. Contracts. Toolbox talks and supply chain review in KPI EHS Plans. Labour



No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring/KPI	Implementation Route/Plan
					Payroll system monitored by HR staff periodically to ensure compliance with Project HR Policy.  Contract clauses and inclusion of HR Policy and Worker Code of Conduct in tender documents.  Records of toolbox talks.  Labour grievance log.  Annual summary of use of labour grievance mechanism and resolution of labour grievances.	Grievance Mechanism.
O5	Safeguard health, safety, security and wellbeing of workers	Handling, transport and management of hazardous chemicals, potential for emergency situations	<ul style="list-style-type: none"> <li>• KPI Health and Safety Manager.</li> <li>• Training programme for all workers including OHS training, use of PPE, specific task health and safety, driver training.</li> <li>• Appropriate Health and safety risk assessments made.</li> <li>• Individual training registers for each employee which they can retain for obtaining future work.</li> <li>• Independent verification of KPI's OHS risk assessment (in line with World Health Organisation standards) to be carried out and any actions arising implemented.</li> <li>• Personnel files to include next of kin details.</li> <li>• Emergency Response Teams.</li> <li>• Adequate medical facilities to be provided – first aid kits, trained first aid personnel on site.</li> <li>• Adjustment of OHS Plan, Emergency Preparedness and Response Plan and other plans, policies and procedures to reflect different conditions in operational phase.</li> <li>• Provision of medical insurance for all workers.</li> </ul>	Kazakhstan Labour Code and other laws IFC PS2  EBRD PR2	Organogram.  Records of risk assessments, site walkovers, identification of Occupational Health and Safety and PPE compliance issues and actions to remedy.  Confidential health records for Project workers will be maintained, including medical results and occupational injury or disease. These records will be aggregated and made anonymous for review by external parties.  Logs showing incidents, accidents and occupational diseases or ill health.  Training records.  Extent current quality assurance review of suppliers to include health and safety  Medical insurance certificates.	KPI Health and Safety system  Emergency Preparedness and Response Plan.  Occupational Health and Safety Plan.  HR Policy

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring/KPI	Implementation Route/Plan
O6	Reduce risks to health, safety, security and wellbeing of local communities	Production of chemicals, transport of materials and workers, potential for emergency situations	<ul style="list-style-type: none"> <li>Security arrangements as per construction phase.</li> <li>Vehicles to carry spill kits, first aid kits and fire extinguishers, drivers should be first-aid trained.</li> <li>Plan of Localisation and Liquidation of Emergencies (PLAS) to be developed to establish actions and contacts. Plan to have an annual review.</li> </ul>	<p>Kazakhstan laws</p> <p>IFC PS4</p> <p>EBRD PR4</p>	<p>Security guards' incident reports.</p> <p>Training records.</p> <p>Records of the automated site entry and exit to be kept for a minimum of one year.</p> <p>Logs of security incidents and actions to remedy.</p> <p>Monitoring of grievance logs, actions taken and recorded.</p> <p>Vehicle checks.</p>	<p>Health and Safety Plans.</p> <p>Plan of Civil Defence and Emergency Situations' with Plan of Localisation and Liquidation of Emergencies (PLAS).</p> <p>Community grievance mechanism.</p>
O7	Safeguarding health, safety, security and wellbeing of local communities	Stakeholder engagement and grievance management	<ul style="list-style-type: none"> <li>Updates to and implementation of Stakeholder Engagement Plan (SEP) and Project performance community grievance mechanism for operations phase.</li> <li>Community Liaison Officer (CLO) to carry out analysis of grievance log to identify common or recurrent problems.</li> <li>CLO to follow-up issues with the Environmental and Social Manger to deal with the causes and identify actions to prevent further recurrence.</li> <li>Annual environmental and social performance and sustainability reporting.</li> </ul>	<p>IFC PS1</p> <p>EBRD PR10</p>	<p>Grievance log.</p> <p>Meetings minuted.</p> <p>Disclosed information dated and kept on file.</p> <p>Records as per SEP.</p> <p>Annual reports Sustainability report to include environment and social indicators</p>	<p>KPI to implement SEP.</p> <p>Community grievance mechanism.</p> <p>KPI to undertake annual reporting.</p>
O8	Mitigate adverse impacts of retrenchment	Labour management	<ul style="list-style-type: none"> <li>Retrenchment Plan to be developed in the event of significant workforce reduction (see Section 3.10)</li> </ul>	<p>Kazakhstan Labour Code</p> <p>IFC PS2</p> <p>EBRD PR2</p>	<p>Retrenchment Plan</p> <p>Numbers of people affected by retrenchment will be recorded.</p> <p>Outcomes of Retrenchment Plan to be recorded.</p> <p>Minutes of meetings with affected employees.</p>	<p>KPI to develop a Retrenchment Plan.</p>





**2.6.3 Air Quality Management**

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring / KPI	Implementation Route / Plan
O9	To ensure the health and safety of workers and the community	Accidental VOC release from the project	Industry best practice to avoid the release of fugitive emissions, as specified in ESIA Volume II.	IFC Guidelines: General EHS Guidelines (April 2007), Petroleum-based Polymers Manufacturing (April 2007).	No significant increases in ambient concentrations	KPI's environmental management system
O10	To ensure the health and safety of workers	KPI to monitor air quality onsite	Regular onsite air quality monitoring to confirm occupational exposure standards for workers are not exceeded.	Kazakhstan MACs	No exceedences of occupational standards	KPI's environmental management system

**2.6.4 Ground Conditions Management**

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring/KPI	Implementation Route/Plan
O11	Avoid impacts to soil quality with secondary impacts on groundwater quality and human health.	<p>General operational activities</p> <p>Avoid leaks and spills of Hazardous Materials</p>	<ul style="list-style-type: none"> <li>Use best practice in line with local regulations and international guidelines for operation of the PDH and PP plant.</li> <li>Drip trays will be used to intercept leaks and spills from equipment and during refuelling.</li> <li>Develop and implement an Emergency Response Plan and a separate Spill Contingency Plan in accordance with local regulations and IFC HSE guidance. Clean-up contaminated material in case of fuel leaks.</li> <li>Hazardous materials will be suitably stored to prevent leaks and spills. Adequate bunding will be provided for all fuel and chemical storage.</li> </ul>	<p>IFC PS3 – Pollution Prevention and Abatement</p> <p>IFC General EHS Guidelines</p> <p>IFC EHS for Large Volume Petroleum-based Polymers Manufacturing</p>	<p>Continued monitoring using existing wells.</p> <p>Regular site inspections.</p> <p>Monitoring reports to be made available to external monitors.</p>	KPI's environmental management system
O12	Minimise impacts to soil and groundwater quality	Site drainage and effluents	<ul style="list-style-type: none"> <li>No discharge to land – contaminated wastewater will be treated at the Water Treatment Plant prior to reuse.</li> <li>In accordance with the site EMP, on-going monitoring and maintenance of the drainage system, and drainage outfall.</li> </ul>	<p>IFC PS3 – Pollution Prevention and Abatement</p> <p>IFC General EHS Guidelines</p> <p>IFC EHS for Large Volume Petroleum-based Polymers Manufacturing</p>	Monitoring of groundwater quality	KPI's environmental management system

**2.6.5 Water Resources and Water Quality Management**

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring / KPI	Implementation Route / Plan
O13	Protection of surface water quality for the environment and to protect groundwater from contamination and sedimentation	Storage of chemicals and oil	<ul style="list-style-type: none"> <li>Use of hard covered, bunded areas for storage of liquids and refuelling. Bunded areas to be a minimum of 110% of volume of largest storage vessel.</li> <li>Oil interceptors in areas where fuel is used or stored.</li> <li>Provision of spill kits and protocols for their use and appropriate disposal to minimise the impacts of any spillages.</li> <li>Storage areas to be located away from surface waters.</li> </ul>	IFC EHS General Guidelines and relevant sector guidelines.	<p>No spills affecting surface water quality.</p> <p>KPI to audit storage areas against mitigation requirements, for example, check availability of spill kits, adequate bunded storage for chemicals and fuels.</p>	KPI's environmental management system

**2.6.6 Ecology and Biodiversity**

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring / KPI	Implementation Route / Plan
O14	Minimise disturbance to mammals, birds and bats	Noise and light from operational activities	<ul style="list-style-type: none"> <li>Minimise noise disturbance by using modern, lower noise, equipment and compliance with national noise standards.</li> <li>Use down lighting to prevent light pollution when artificial lighting is required.</li> </ul>	<p>IFC PS6</p> <p>EBRD PR6</p>	<p>KPI to conduct regular site inspections.</p> <p>Monitoring reports to be made available to external monitors.</p>	KPI's environmental management system

**2.6.7 Materials and Waste Management**

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring / KPI	Implementation Route / Plan
O15	Minimise waste generation.	Waste generated from operation of the Project	<ul style="list-style-type: none"> <li>Where appropriate send liquid and solid waste streams for incineration at a suitably licenced waste disposal facility.</li> </ul>	<p>Kazakhstan Law</p> <p>IFC EHS General Guidelines</p> <p>IFC PS3</p>	<p>KPI to develop and implement Waste Management Plan as part of standard operational procedures.</p> <p>KPI internal audit reports, including photographs where relevant and documentation of suitable storage measures, documentation of approved waste disposal facility, transfer notes, and/or sub-contractor employed to collect wastes.</p>	KPI's environmental management system

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring / KPI	Implementation Route / Plan
				EBRD PR3	Record quantities of all wastes generated from different waste streams as part of overall site waste inventory. Maintain records of hazardous wastes disposed off-site.	
O16	Protection of environment from leakage or spillage of wastes  Prevention of fugitive emissions  Prevention of negative visual amenity impacts	Waste generation, handling and storage of materials	<ul style="list-style-type: none"> <li>Identify a suitable temporary storage locations for each waste stream.</li> <li>Both the onsite and offsite waste storage facilities will be include the following:                             <ul style="list-style-type: none"> <li>Separate storage areas for hazardous and non-hazardous wastes.</li> <li>Separate skips or containers for each waste stream to allow segregation in order to maximise re-use and recycling opportunities.</li> <li>All skips and waste storage vessels to have a suitable cover.</li> <li>Liquid wastes/oil/chemicals to be stored in tanks or drums located in bunded areas which can hold 110% of the total storage volume.</li> <li>Spill kits to be available at all times.</li> </ul> </li> </ul>	Kazakhstan Law  IFC EHS General Guidelines  IFC PS3  EBRD PR3	KPI to carryout regular site inspections. Monitoring reports to be made available to external monitors. Waste records.	KPI's environmental management system All hazardous materials to be handles in accordance with Material Data Sheets
O17	Protection of environment from leakage or spillage of wastes	Disposal of waste to KPI landfill	<ul style="list-style-type: none"> <li>KPI to manage waste to landfill in accordance with national requirements.</li> </ul>	Kazakhstan Law	KPI Monitoring and inspections	KPI's environmental management system
O18	Duty of care of all generated wastes	Final waste destination	<ul style="list-style-type: none"> <li>Develop waste tracking system to verify final destination of all wastes.</li> <li>Undertake waste accounting.</li> <li>Inspect waste facilities used for disposal (included reuse/recycling) of project wastes to ensure it is appropriately registered and complies with international standards.</li> </ul>	Kazakhstan Law  IFC EHS General Guidelines	Waste records. Waste accounting data. Inspection reports.	KPI's environmental management system

**2.6.8 Transport Management**

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring / KPI	Implementation Route / Plan
O19	Minimise road congestion	Transport of operational workforce and products from the Project	<ul style="list-style-type: none"> <li>Develop an operational traffic management plan</li> </ul>	Kazakhstan Law  IFC EHS General Guidelines	Number of complaints relating to traffic and transport.	KPI to develop a Traffic Management Plan  KPI to implement Community Grievance Mechanism

**2.6.9 Noise and Vibration**

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring / KPI	Implementation Route / Plan
O20	Avoid noise nuisance from site operation	Project operation	<ul style="list-style-type: none"> <li>All equipment will be regularly serviced and maintained.</li> </ul>	IFC EHS General Guidelines on Noise Management	KPI to monitor noise levels using sound level meter at the nearest residential properties to operational activities for comparison against standards. To be undertaken on a quarterly basis.  Record and investigate any complaints using sound level meter via the community grievance mechanism.  Monitoring frequency: quarterly or upon receipt of noise complaints via community grievance mechanism.	KPI to implement Community Grievance Mechanism  Quarterly operational monitoring

**2.6.10 Greenhouse Gas**

No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring / KPI	Implementation Route / Plan
O21	Reduce GHG emissions	Fugitive	<ul style="list-style-type: none"> <li>Minimise fugitive emissions through use of best available technology and combustion of fugitive emissions in onsite flare</li> <li>Regular inspections of pipes to check for fugitive emission releases</li> </ul>	IFC Guidelines: General EHS Guidelines	Volume of gas flared.  Number of leaks	KPI's environmental management system



No	Objective	Activity	Mitigation/Enhancement	Standards	Monitoring / KPI	Implementation Route / Plan
		Use of vehicles with emissions.	<ul style="list-style-type: none"> <li>Use of new and efficient vehicles. All equipment should be maintained and switched off when not in use.</li> </ul>	N/A	Contracts to include requirements for new efficient equipment to be used Record of plant maintenance.	KPI's environmental management system
		Staff vehicle movements	<ul style="list-style-type: none"> <li>Transportation scheme for operation staff</li> </ul>	N/A	Options for group pick up made available to workers.	KPI's Operational Traffic Management Plan
		Use of electricity	<ul style="list-style-type: none"> <li>Efficient use of electricity from shared facilities gas turbines.</li> </ul>	N/A	Amount of energy purchased.	KPI's environmental management system

## 3 Plans Policies and Procedures

### 3.1 Introduction

The preceding section of this ESMP identified all relevant mitigation activities relevant to the Project as identified through the ESIA. In turn, the various mitigation activities will be implemented via a number of dedicated plans. This section of the ESMP elaborates various framework plans through which the mitigation activities identified will be committed by the Project.

Prior to construction of the Project, KPI will review the EPC(M) contractor CEMP detail in relation to each of the framework plans, policies and procedures defined within this ESMP to ensure adequate management and monitoring of social and environmental aspects have been included. Table 3.1 below summarises the key plans and policies that are required for the Project.

It is intended that these framework plans will be further elaborated by the EPC(M) contractor and be implemented by the construction any sub-contractors which may be employed.

The following framework plans have been defined within this ESMP:

- Construction Environmental Management Plan Framework;
- Recruitment policy;
- Retrenchment plan;
- Labour grievance mechanism;
- Site waste management plan;
- Traffic management plan;
- Temporary worker accommodation management plan (if required);
- Chance finds procedure;
- Air Quality Monitoring Programme;
- Hazardous Materials Management and Use Plan; and
- Emergency Preparedness and Response Plan (EPRP) (including Spill Response Plan).

Preparation of the EPRP is a requirement of IFC Performance Standard 1 to cover potential emergencies during the construction, operation and decommissioning of the Project. The EPRP will form part of the wider suite of plans to be implemented by the EPC(M) contractor. A spill response plan will be prepared as part of the EPRP prior to the large scale storage of chemicals or oil at the construction sites.

KPI will also implement the Stakeholder Engagement Plan (SEP) and update it when there are significant changes to the project, such as change in phase or identification of new stakeholders. The project performance grievance mechanism will also be implemented throughout the lifecycle of the Project and is described in detail in ESIA Volume II and in the SEP.

### 3.1.1 Required Plans, Policies and Procedures

Aspect	Plan / Policy	Objective / Content	Timescale	Responsibility	Institutional responsibility
Construction environmental management	Construction Environmental Management Plan (CEMP) (see Section 3.2)	<ul style="list-style-type: none"> <li>To implement mitigation activities relevant to the construction phase of the Project and to avoid, mitigate and minimise environmental and social impacts during the construction phase.</li> <li>The EPC(M) contractor will be required to develop a CEMP which will strictly follow and comply with the general IFC Environmental, Health and Safety Guidelines (EHS) and other international requirements outlined within this ESIA during construction activities as well as incorporate specific mitigation as identified through the ESIA process.</li> </ul>	Prior to construction: Plan to be prepared by EPC(M) contractor and approved by KPI	<p>EPC(M) contractor responsible for meeting the requirements of the CEMP.</p> <p>EPC(M) contractor Project Director responsible for implementation of the CEMP by any construction sub-contractors.</p> <p>KPI responsible for monitoring EPC(M) contractor compliance with the CEMP.</p>	-
Recruitment	Recruitment Policy (See Section 3.3)	<ul style="list-style-type: none"> <li>Prioritising benefits for local people and minimising social conflict. Prohibition of the use of child and forced labour; promotion of non-discrimination and equal opportunities.</li> <li>Disclosure of a Recruitment Policy that specifically includes a requirement to prioritise local employment and in particular a requirement to prioritise vulnerable groups, such as the unemployed, unskilled or people employed in the informal sector.</li> <li>The Policy will consider local literacy levels, gender issues and vulnerable groups and will be disclosed in ACs including Karabatan Station and Railway siding 496 to maximise the potential for vulnerable persons' inclusion in Project benefit-sharing.</li> </ul> <p>Refer to:</p> <ul style="list-style-type: none"> <li>IFC PS2 – Labour and Working Conditions.</li> <li>EBRD PR2 - Labour and Working Conditions.</li> <li>The Labour Code of Kazakhstan</li> </ul>	Policy to be developed and disclosed prior to construction recruitment activities.	<p>KPI responsible for monitoring EPC(M) contractor recruitment policy is in accordance with KPI policies.</p> <p>EPC(M) contractor Project Director responsible for implementation and monitoring construction sub-contractors.</p> <p>KPI CEO has overall responsibility for operational phase recruitment and to ensure it is in line with KPI policies.</p>	



Aspect	Plan / Policy	Objective / Content	Timescale	Responsibility	Institutional responsibility
Labour Management	Project Human Resources Policy	<ul style="list-style-type: none"> <li>Develop a concise, consolidated HR policy for the Project to be included in tender packages and contracts and to guide the management of labour for the Project. This will especially help any foreign construction sub- contractor(s) to understand what is required of them.</li> <li>Toolbox talks on the content of the HR Policy will help workers to understand their rights and will maintain good project performance on safeguarding the workforce.</li> <li>Refer to documents as above and IFC PS2 Guidance Note.</li> </ul>	Policy to be developed prior to construction.	KPI HR department responsible for monitoring EPC(M) contractor to ensure HR Policy is in accordance with KPI HR policy and ESMP EPC(M) contractor responsible for monitoring construction contractor to ensure HR Policy is in accordance with KPI HR policy and ESMP.	Department of Control and Social Protection for Atyrau Region of Ministry of Labour and Social Protection of Population of the Republic of Kazakhstan
Labour Complaints	Labour Grievance mechanism (See Section 3.5)	<ul style="list-style-type: none"> <li>The objective is to uphold workers' rights and to create accountability amongst project management for the resolution of genuine work related issues which can occur when managing a large workforce with numerous sub-contractors</li> <li>To provide a formalised process by which grievances can be raised by the workforce during construction and operation. The mechanism allows structured investigation by KPI to review the validity, responsibility and response / action of labour grievances.</li> </ul>	Develop prior to construction. Policy to be disclosed to all workers upon recruitment and advertised widely on site.	KPI HR department responsible for monitoring EPC(M) contractor labour grievance mechanism during construction. EPC(M) contractor Project Manager responsible for monitoring construction sub-contractor KPI CEO has overall responsibility for implementation of the Labour Grievance mechanism during the operational phase.	State Labour Inspection of RK Department of Control and Social Protection for Atyrau Region of Ministry of Labour and Social Protection of Population of the Republic of Kazakhstan

Aspect	Plan / Policy	Objective / Content	Timescale	Responsibility	Institutional responsibility
Labour Accommodation (if required)	Worker Accommodation Plan (see Section 3.6)	<ul style="list-style-type: none"> <li>To provide safe, clean and comfortable living conditions for workers with consideration of nearby communities.</li> <li>During construction phase, the Plan is intended to compliment and work alongside relevant CEMPs.</li> <li>Refer to Workers' accommodation: processes and standards, a guidance note by IFC and the EBRD, See Section 3.6 and Appendix F Volume III.</li> </ul>	Prior to main construction / decommissioning phase. Plan to be developed EPC(M) contractor and based on framework presented in Section 3.6.	Overall responsibility of workers accommodation plan with EPC(M) contractor. EPC(M) contractor Project Manager responsible for implementation at project level.	State Labour Inspection of RK Department of Control and Social Protection for Atyrau Region of Ministry of Labour and Social Protection of Population of the Republic of Kazakhstan Environmental Regulation and Control Committee for Atyrau Region of RK Ministry of Environmental Protection and Water Resources
Labour Management	Worker Code of Conduct, Policies regarding alcohol and drugs use, PPE and other working equipment usage	<ul style="list-style-type: none"> <li>The Worker Code of Conduct is to govern the behaviour of workers on site, in their accommodation and in the local communities and if required should cover <i>inter alia</i>: cultural awareness for workers coming from outside of the wider area of influence,</li> <li>The following policies should also be implemented: drugs and alcohol policy with information about testing and penalties for contravention, proper and intended use of Personal Protective Equipment (PPE) and other work equipment with information about penalties for contravention, maintaining a safe and tidy working area, respect for colleagues and communities, and information about HIV/AIDS and the spread of sexually transmitted diseases.</li> </ul>	Developed prior to construction. To be included in EPC(M) contractor agreements and given to all workers upon recruitment.	KPI HR department responsible for monitoring EPC(M) contractor and ensuring Worker Code of Conduct meets KPI policy EPC(M) contractor responsible for monitoring of construction sub- contractors Responsibility amongst all workers to uphold.	Department on the Customers Rights Protection for Atyrau Region of the RK Agency on Customers Rights Protection

Aspect	Plan / Policy	Objective / Content	Timescale	Responsibility	Institutional responsibility
Environmental Health and Safety Management System	KPI to develop an EHS system for the Project	<ul style="list-style-type: none"> <li>To promote safe and healthy working conditions and the health of workers with a safe and tidy working environment, procedures and culture. Further policies / procedures to be developed if need identified through site audits.</li> <li>Refer to national law, IFC PS2, EBRD PR2</li> <li>IFC EHS General Guidelines on Occupational Health and Safety (OHS)</li> <li>IFC EHS Guidelines on Petroleum-based Polymers Manufacturing</li> <li>IFC EHS Guidelines on Large Volume Petroleum-based Organic Chemicals Manufacturing</li> </ul>	Developed prior to construction and updated as needed.	<p>KPI EHS department responsible for monitoring EPC(M) contractor compliance in accordance with ESMP and existing KPI plans.</p> <p>EPC(M) contractor responsible for monitoring of construction sub-contractors</p> <p>KPI CEO has overall responsibility for implementation of EHS system during operation.</p>	
Emergency situations	Emergency Preparedness and Response Plan (EPRP)	<ul style="list-style-type: none"> <li>To enable KPI, in collaboration with appropriate and relevant third parties, to be prepared to respond to unplanned, accidental and emergency situations associated with the project in a manner appropriate to prevent and mitigate any harm to people and/or the environment.</li> <li>Content should include identification of areas where accidents and emergency situations may occur, communities and individuals that may be impacted, response procedures, provision of equipment and resources, designation of responsibilities, communication, including that with potentially Affected Communities and periodic training to ensure effective response. The EPRP should be discussed with representatives of local emergency services.</li> </ul>	Developed prior to construction and updated as needed.	<p>KPI EHS department responsible for monitoring EPC(M) contractor EPRP to confirm compliance with ESMP.</p> <p>EPC(M) contractor responsible for monitoring of construction sub-contractors</p> <p>KPI CEO has overall responsibility for implementation of EPRP plan during operation.</p>	<p>Department on Emergency Situations for Atyrau Region of RK Ministry on Emergency Situations. Environmental Regulation and Control Committee for Atyrau Region of RK Ministry of Environmental Protection and Water Resources</p> <p>Police, army, ambulance and fire service</p>
Labour management at end of operational phase.	Retrenchment Plan (See Section 3.10)	<ul style="list-style-type: none"> <li>To mitigate the adverse impacts associated with job losses.</li> <li>Content to include analysis of alternatives, legislative framework, consultation with employees and their organisations, disclosure, grievance mechanism, identification of number of employees affected, severance payments calculation methodology and record of payments made, assistance provided to employees.</li> </ul>	Developed prior to retrenchment.	KPI HR department	<p>State Labour Inspection of RK</p> <p>Department of Control and Social Protection for Atyrau Region of Ministry of Labour and Social Protection of Population of the Republic of Kazakhstan</p>

Aspect	Plan / Policy	Objective / Content	Timescale	Responsibility	Institutional responsibility
Community investment	Community Investment Policy and Plan	<ul style="list-style-type: none"> <li>To help to offset effects which would otherwise be difficult to mitigate, such as those related to community disturbance, change in sense of place, reduction in grazing land and dust impacts which have already occurred.</li> </ul>	Developed in consultation with local community at Karabatan Station prior to commencement of main construction phase and ongoing.	KPI CLO and Project Management team	Local government representatives
On-going community engagement	Stakeholder Engagement Plan (SEP - See Volume III)	<ul style="list-style-type: none"> <li>To keep communities and stakeholders informed while listening and responding to concerns about the project to allow it to run smoothly.</li> <li>Content – SEP in Volume III.</li> </ul>	Updated when project changes significantly, e.g. change of phase.	KPI Community Liaison Officer (CLO)	Local government representatives and Environmental Department for Atyrau Region of RK Ministry of Environmental Protection and Water Resources
Community Complaints	Community grievance mechanism (See Volume III, SEP)	<ul style="list-style-type: none"> <li>To provide a formalised process by which grievances can be raised by the local community during construction and operation which allows structured investigation by KPI to review the validity, responsibility and response / action.</li> </ul>	During construction and operation.	KPI Community Liaison Officer (CLO).	Local government representatives and Environmental Department for Atyrau Region of RK Ministry of Environmental Protection and Water Resources. Department on the Customers Rights Protection for Atyrau Region of the RK Agency on Customers Rights Protection

Aspect	Plan / Policy	Objective / Content	Timescale	Responsibility	Institutional responsibility
Chemicals and fuels. Spent oils and lubricants. Containment failure of storage tanks or pipelines	Spill response plan Emergency Preparedness and Response Plan Hazardous Materials Management and use Plan see section 3.13	<ul style="list-style-type: none"> <li>• Appropriate storage, transfer and use of chemicals and fuel on site.</li> <li>• Identify responsibilities, procedures and equipment required to deal with a spill.</li> <li>• Identification of key risk points for containment failure within the EPRP.</li> <li>• During construction phases, intended to compliment and work alongside CEMP.</li> </ul>	<p>Prior to construction by EPC(M) contractor .</p> <p>Plans to be updated prior to commissioning for operations related procedures</p>	<p>KPI EHS department responsible for monitoring EPC(M) contractor during construction phase.</p> <p>EPC(M) contractor responsible for monitoring of construction sub- contractors.</p> <p>KPI CEO has overall responsibility for overseeing implementation of these plans during operation.</p>	Environmental Regulation and Control Committee for Atyrau Region of RK Ministry of Environmental Protection and Water Resources
Waste	Site Waste Management Plan (SWMP) (see Section 3.12)	<ul style="list-style-type: none"> <li>• Identify measures for minimisation of waste, appropriate handling and management of waste and safe disposal of construction wastes.</li> <li>• During construction phases, intended to compliment and work alongside CEMP.</li> </ul>	<p>Prior to construction by EPC(M) contractor .</p> <p>To be updated prior to commissioning for operations related procedures.</p>	<p>KPI EHS department responsible for monitoring EPC(M) contractor during construction phase.</p> <p>EPC(M) contractor responsible for monitoring of construction sub-contractors.</p> <p>KPI CEO has overall responsibility for implementation of SWMP during operation.</p>	Environmental Regulation and Control Committee for Atyrau Region of RK Ministry of Environmental Protection and Water Resources
Transport	Traffic Management Plan for abnormal load (see Section 3.13)	<ul style="list-style-type: none"> <li>• Identify measures to manage abnormal load deliveries during construction in order that road safety requirements are managed, impacts to external road users and road infrastructure are minimised, and compliance with local legislation and international guidelines is achieved throughout the construction phase.</li> <li>• During construction phases, intended to compliment and work alongside CEMP.</li> </ul>	<p>Prior to construction by EPC(M) contractor .</p>	<p>KPI EHS department responsible for monitoring EPC(M) contractor during construction phase.</p> <p>EPC(M) contractor responsible for monitoring of construction sub-contractors.</p>	Government transport and police departments

Aspect	Plan / Policy	Objective / Content	Timescale	Responsibility	Institutional responsibility
Archaeology	Chance finds procedure (see Section 3.15)	<ul style="list-style-type: none"> <li>• Refer to the World Bank’s Physical Cultural Resources Policy Guidebook and Section 3.15</li> <li>• During construction phases, intended to compliment and work alongside CEMP.</li> <li>• In particular, the procedure is to include:                             <ul style="list-style-type: none"> <li>– Definition of cultural resources / archaeological features;</li> <li>– Ownership of the artefact;</li> <li>– Recognition training;</li> <li>– Procedure upon any discovery, i.e.:                                     <ul style="list-style-type: none"> <li>– Conditions / requirements for work stoppage;</li> <li>– Fencing and protection of the find;</li> <li>– Internal reporting;</li> <li>– Expert analysis;</li> <li>– Instructions for moveable finds.</li> </ul> </li> </ul> </li> </ul>	Prior to construction by the EPC(M) contractor . Procedures to be communicated to construction sub-contractor by the EPC(M) contractor .	KPI EHS department responsible for monitoring EPC(M) contractor. EPC(M) contractor responsible for monitoring of construction sub- contractors	The Ministry of Culture of the Republic of Kazakhstan

## 3.2 Construction Environmental Management Plan Framework

### 3.2.1 Background

The following sub-sections provide a framework construction environmental management plan (CEMP) to avoid, mitigate and minimise environmental and social impacts associated with construction activities and to provide the implementation vehicle of specific mitigation activities identified through the ESIA process.

It is intended that the framework CEMP plan is to be elaborated by the EPC(M) contractor and will be complemented by the overall environmental management system (EMS) to be developed by KPI.

The CEMP will be required to strictly follow and comply with the general IFC Environmental, Health and Safety Guidelines (EHS) during construction activities.

### 3.2.2 Objective

The overall objective of the CEMP is to ensure that the environmental and social impacts of construction activities are managed according to the best practices of the industry. Furthermore, the CEMP is intended to provide the implementation route of various mitigation activities specific to the Project as identified through the ESIA.

### 3.2.3 Approach

#### 3.2.3.1 Preparation by EPC(M) contractor CEMP

The EPC(M) contractor will be required to prepare a dedicated CEMP compliant with this framework and requirements of the Republic of Kazakhstan which will be structured as follows:

1. A Master CEMP providing organisational and operational procedures for the implementation of both project specific mitigation as identified through the ESIA process and general best practices of the industry; and
2. Parallel framework plans elaborating complimentary environmental / social management measures by themes and indicating the responsibility for implementation, technical details and how implementation will be monitored. Table 3.1 lists the main parallel plans expected to properly manage the construction activities and to be in compliance with the IFC EHS guidelines;

The CEMP will include performance / monitoring indicators consistent with those presented in Section 2 of this ESMP.

Table 3.1: List of Parallel Framework Plans

Parallel Framework Plan	Sub-Section
Recruitment Policy	3.3
Project Human Resources Policy	3.4
Labour Grievance Mechanism	3.5
Workers' Accommodation Management Plan (if required)	3.6
Workers Code of Conduct	3.7

Parallel Framework Plan	Sub-Section
Workers Policies on alcohol and drugs uses, PPE and other working equipment	3.8
Emergency Preparedness and Response Plan	3.9
Retrenchment Policy	3.10
Community Investment Policy	3.11
Site Waste Management Plan	3.12
Hazardous Materials Mangement and Use Plan	3.13
Traffic Management Plan	3.14
Chance Finds Procedure	3.15

The EPC(M) contractor CEMP documentation has the following objectives:

- Provide the environmental and social policy of the construction sub-contractors;
- Provide operational and emergency procedures, developed to address the environmental aspects and risks associated with the construction activities;
- Clarify the implementation and operation of the CEMP to ensure that structure and responsibilities are assigned, staff are trained, aware and competent, and that there is proper communication, documentation, operational control and emergency preparedness and response;
- Provide organisational and technical procedures for implementation of the CEMP which ensure that construction activities associated with potential environmental and social impacts are carried out in a controlled and responsible way;
- Provide checking and corrective action through monitoring and measurement; and
- Provide records collection and storage.

The various plans need to be approved by KPI ahead of implementation to check for consistency and that all committed mitigation activities have been adequately included and accounted for by the EPC(M) contractor. The plans will be required to be submitted to the lenders as part of the annual implementation plans.

### 3.2.3.2 EPC(M) contractor monitoring of the implementation of CEMP

The EPC(M) contractor will be responsible for the implementation of the CEMP plans and for monitoring construction sub- contractors and assessing how environmental and social management is undertaken. This will be done through the monitoring of environmental controls and for the overall construction activities in general.

Routine monitoring of construction activities will be undertaken by the EPC(M) contractor in order to ensure that the requirements and measures specified in the CEMP are properly implemented and that the impacts are minimised or mitigated.

The EPC(M) contractor will employ their own specialist environmental, health and safety staff to undertake this monitoring. The EPC(M) contractor will prepare and maintain reports of their inspections and ensure that corrective actions are taken when necessary and to track environmental performance.



### 3.2.3.3 KPI Monitoring and Auditing of the Implementation of the CEMP

KPI has a number of specialist site based environmental, health and safety staff within their current EHS team to undertake the monitoring of the site and assess compliance with the CEMP. A system of non-conformance, using three levels of non-conformance, will be put in place to prioritise action according to importance and severity.

The non-compliance procedure will allow for the following safeguards:

1. Work can be stopped in the event of a serious non-compliance situation;
2. Follow-up visits will be required to verify that the situation has been appropriately rectified by the EPC(M) contractor; and
3. Investigations will determine the causes of incidents and evaluate if changes need to be made to the documentation to prevent similar incidents from occurring in the future.

Periodic auditing will also take place, two months after construction has commenced and at least six-monthly after that, to verify conformance and that the proper procedures are in place.

Together, monitoring, non-conformance systems and auditing will allow evaluation of environmental performance, analysis of causes of problems, assessment of compliance with contractual and legal requirements, and enable identification of required corrective actions.

## 3.2.4 Activities

### 3.2.4.1 Environment

As per the IFC EHS guidelines, the EPC(M) contractor are obliged to implement all reasonable measures with regards to noise and vibration, soil erosion, air quality, waste, hazardous materials, wastewater discharges, and contaminated land. Furthermore, the EPC(M) contractor is required to adopt and implement those specific mitigation activities identified through the ESIA process and presented in Section 2 which are relevant to their construction activities.

### 3.2.4.2 Occupational Health and Safety

As per the IFC EHS guidelines, the EPC(M) contractor is obliged to implement all reasonable precautions to protect the health and safety of workers. Various aspects which should as a minimum be take into consideration include: the integrity of workplace structures, severe weather and facility shutdown, workspace and exit, fire precautions, lavatories and showers, potable water supply, clean eating area, lighting, safe access, first aid, disease prevention, communication and training, over exertion, slips and falls, work at heights, struck by objects, moving machinery, dust, confined spaces and excavations, protective equipment, etc. The occupational health and safety measures identified in the EPC(M) contractor CEMP will be reviewed to ensure they are consistent with those measures included in KPI's overarching OHS management plan.

### 3.2.4.3 Community Health and Safety

In a similar way, as per the IFC EHS guidelines, the EPC(M) contractor is obliged to implement risk management strategies to protect the community from (1) physical, chemical, or other hazards associated with sites under construction, (2) hazards associated with the increased traffic, (3) communicable and vector-borne diseases associated with the population of workers.

### **3.2.5 Staff and Resources**

As indicated above, the preparation, approval, implementation, and monitoring of the various activities will require specialist environmental, health and safety staff both from KPI and the EPC(M) contractor.

Dedicated equipment will also be required to undertake the monitoring of the various parameters.

A detailed CEMP will be a contractual obligation for the EPC(M) contractor and it will be up to them to staff its EHS divisions appropriately to be able to comply with these obligations.

To undertake this function, KPI 's current EHS department will be expanded and will monitor the work of the EPC(M) contractor.

### **3.2.6 Budget**

The cost of implementing the various measures, including the preparation of the various plans and their monitoring, by the EPC(M) contractor is incorporated into the overall cost of the construction contract and is not included within this ESMP.

KPI will be responsible for reviewing the plans and monitoring the EPC(M) contractor compliance throughout the construction phase. KPI will be responsible for developing an Environmental Management System and incorporating the mitigation measures outlined above for the operational phase of the Project. Section 6 presents an indicative budget for undertaking these tasks.

### 3.3 Recruitment Policy

The Recruitment Policy will include but not be limited to the following:

- Policy statement of KPI's commitment to meeting Republic of Kazakhstan Laws and international best practice with regards to recruitment and labour management including non-discrimination and equal opportunities.
- Description of the types of employment opportunities to be provided to local people from the construction phase of the project including skills levels, indicative timeframes of recruitment, remuneration and benefits packages and likely duration of contracts.
- Description of the local recruitment processes including timely (at least one month prior to recruitment) disclosure of information bulletins about vacancies through local employment offices, newspapers and Akim of Karabatan Station and Railway Siding 496 and Akimat of Atyrau City.
- The job application procedures for candidates.
- Information about how job opportunities are advertised equitably between the different villages in the assessment area to ensure equal opportunities for all local people subject to appropriate skills availability.

Where it is justified in respect of considerations of cost and quality, KPI and its EPC(M) contractor will adopt a quota for local staff.

KPI will monitor this aspect of recruitment, and where these quotas are not met, it will be incumbent upon KPI to undertake further efforts to ensure the inclusion of local people in project recruitment efforts. KPI will disclose this policy document to the Akim of Karabatan Station and Railway Siding 496 and the Akimat of Atyrau City to promote transparency in the recruitment process and address potential community misconceptions of favouritism being shown to some villages/towns over others.

The recruitment policy will apply to the construction phase only as this is the phase where benefits for most likely to be possible to share with unskilled local people. Cleaners, cooks, drivers and other low or unskilled workers recruited during construction will be retained if needed in the operational phase.

### 3.4 Project Human Resources Policy

The Project Human Resources (HR) Policy will include but not be limited to:

- Working Conditions and Management of Worker Relationships, including policies in relation to Working Relationship; Working Conditions & Terms of Employment; Workers' Organisations; Non-Discrimination and Equal Opportunity; Retrenchment; and Grievance Mechanism;
- Protecting the Workforce, including commitments in relation to Child Labour; Forced Labour; and Migrant workers;
- Occupational Health & Safety;
- Workers Engaged by Third Parties;
- Supply Chain.

KPI will update its HR policy so that it states clearly and simply the company's policies with respect to each element of IFC PS2 and EBRD PR2. It will also refer to elements of the Republic of Kazakhstan Law. The company HR Policy will also be reflected in a Project specific HR Policy which will be included in tender packages and contracts to ensure that EPC(M) contractor and sub-contractors manage the workforce in

accordance with national and international standards. This will especially help any foreign sub-contractors to understand what is required of them.

Toolbox talks on the content of the HR Policy and its visibility on noticeboards at site and in accommodation will help workers to understand their rights and will maintain good project performance on safeguarding the workforce.

### **3.5 Labour Grievance Mechanism**

The labour grievance mechanism will include but not be limited to the following:

- A KPI policy statement that grievances can be raised by any member of staff without fear of reprisals.
- Contact details for staff to whom grievances should be raised.
- Response times for grievances categorised according to the severity of the grievance or the issue in question.
- A process for logging grievances and when and how they are closed out.
- A process for monitoring grievances to identify repeat or unresolved grievances and reporting these issues to senior management in order to expedite remedial action.

The grievance mechanism will be explained to all EPC(M) contractor, construction sub-contractor and KPI staff on appointment and a notice (summarising the approach and providing contact details for staff to which grievances should be raised) will be posted at appropriate places at the work site and accommodation areas.

### **3.6 Workers' Accommodation Plan Framework**

#### **3.6.1 Background**

Depending on the selection of the EPC(M) contractor, existing workers accommodation camps already in the area may be utilised and therefore a new temporary workers' accommodation may not be required. If a new accommodation plan is required special considerations and measures to ensure that the health, safety, security and well-being of temporary workers will need to be upheld in both the construction phase of the Project and across all accommodation facilities. In addition if existing camps in the area are to be used the EPC(M) contractor will confirm that that these also met the required standards and KPI will verify this. To meet these requirements, this subsection presents a framework to guide Workers' Accommodation Plans to be elaborated and implemented by the EPC(M) contractor.

#### **3.6.2 Objectives**

The overarching goal of the plan will be to ensure that workers' accommodation complies with international best practice as exemplified by 'Workers' accommodation: Processes and standards, a guidance note by IFC and the EBRD' (2009) (see Appendix D in Volume III).

Specific objectives of the plans will include ensuring that workers' accommodation is:

- Provided free of charge to workers
- Provides adequate living space for each worker
- Provides sanitary, laundry and cooking facilities and potable water
- Has adequate health, fire safety measures including first aid and medical facilities
- Has adequate heating and ventilation

- Non-restrictive to workers' freedom of movement to and from the accommodation.

The ways in which the plan is to meet these objectives is elaborated in the sub-section below.

### **3.6.3 Approach and Activities**

A Workers' Accommodation Plan will be developed and followed for all new (and existing facilities if they do not meet the required standards) construction accommodation facilities prior to them being inhabited. These plans will be developed in accordance with international practice guidance and follow a standard format addressing the following:

- Assessment of the need for workers' accommodation (how many workers will come from outside the area and the capacity needs of the accommodation; and availability of existing housing).
- Assessment of impacts of workers' accommodation on communities including:
  - Specific impacts during the construction phase
  - Community infrastructure
  - Community services and facilities
  - Local businesses and local employment
  - Community health and safety
  - Community cohesion
  - Land acquisition and resettlement
  - Dismantling and reinstatement.
- Demonstrating how national and international best practice standards for workers' accommodation will be met in relation to:
  - General living facilities
  - Room/dormitory facilities
  - Sanitary and toilet facilities
  - Canteen, cooking and laundry facilities
  - Standards for nutrition and food safety
  - Medical facilities
  - Leisure, social and telecommunication facilities
- Description of the management and monitoring approach, structure, roles and responsibilities of the accommodation area in relation to:
  - Management and staff structure;
  - Charging fees for accommodation and services;
  - Health and safety on site;
  - Security of workers' accommodation;
  - Workers' rights, rules and regulations;
  - Consultation and grievance mechanisms; and
  - Management of community relations.

This plan will be integrated with the health and safety plan and the emergency preparedness and response plan.

### **3.6.4 Staff and Resources**

The construction of temporary workers' accommodation and supporting facilities or the use of existing facilities will be the responsibility of the EPC(M) contractor. KPI will ensure that during the contract

negotiation stage the EPC(M) contractor fully understands their obligations. KPI will review and approve the EPC(M) contractor elaborated Worker Accommodation Plan for the construction phase of the Project.

The EPC(M) contractor will be required to appoint or assign duties to an Accommodation Manager to implement the Workers' Accommodation Plans and ensure that international standards are followed and the accommodation is well maintained.

The KPI EHS department will audit the accommodation facilities and workers' grievance log in relation to these areas on a monthly basis and will implement corrective actions where non-compliance with the plan is identified. Monitoring reports will feed in to the overall reporting schedule for the Project as explained in Section 5. Workers will be able to submit complaints directly to KPI at any time through the workers' grievance mechanism although a first step of addressing the complaint to their own employer will be promoted.

### **3.7 Worker Code of Conduct**

A Worker Code of Conduct will be developed for project workers by the EPC(M) contractor and checked by KPI. The Code of Conduct and policies will be used to govern the behaviour of workers on site, in their accommodation and in the local communities.

The Code of Conduct will include but not be limited to:

- Respect for colleagues and behaviour expectations with regards to harassment and bullying;
- Cultural awareness issues for workers coming from outside of the wider area of influence;
- Ethics rules;

Workers will be issued with the Code of Conduct upon their recruitment and asked to sign to say that they have received and understand the document.

### **3.8 Policies for EPC(M) contractor**

Policies will be developed for project workers by the EPC(M) contractor and checked by KPI. Policies will include but not be limited to:

- Use of drugs, alcohol and smoking with information about testing and penalties for contravention;
- Rules regarding safe use of PPE and project equipment including disciplinary procedures for inappropriate use;
- Maintaining a safe and tidy working area;
- Reporting of incidents and accidents;
- Respect for communities and lines of communication;
- Rules governing use of resources and utilities including power, water and the internet;
- Guidance about how to behave to prevent the spread of HIV/AIDS and other sexually transmitted diseases;
- Driving rules;
- Confidentiality of information;
- Rules for security guards;
- Reporting of chance finds;
- Prohibition of weapons on site or in accommodation; and
- Responsibilities of management.

Workers will be issued with the policies upon their recruitment and asked to sign to say that they have received and understand the document.

### **3.9 Emergency Preparedness and Response Plan**

#### **3.9.1 Background**

This section presents the proposed structure for the EPRP which will be developed by the EPC(M) contractor and approved by KPI. It should be noted that this section does not constitute the final EPRP and is intended to be used as a guidance document for producing the EPRP.

#### **3.9.2 Objective**

An appropriate EPRP is relevant to both the construction and operational phases of the Project. The EPRP aims to provide an organisational structure and procedures for staff to prepare and respond effectively for both external and internal accidents, malfunctions, unplanned events and natural disasters that can potentially negatively affect the Project.

Responsibility for developing the EPRP for the construction phase lies with the EPC(M) contractor.

Ultimately, in the preparation of the EPRP, the following process will need to be followed:

1. Perform HAZOP analysis for the Project covering the construction and operational phases. Completion of the HAZOP should be undertaken in a workshop or series of workshops and include inputs from all relevant stakeholders (such as KPI, the EPC(M) contractor, sub- contractors, local community representatives – particularly those at Karabatan Station, local emergency services representatives).
2. Document the perceived level of risk (in a risk register) and the appropriate mitigation measures which are required to reduce risks to acceptable levels. All mitigation measures should have responsibilities and timeframes attached to them.
3. Inform potentially affected communities of significant hazards giving explanations to aid understanding.
4. Prepare the EPRP (see below for the proposed structure).
5. Summarise and disclose the EPRP in a culturally appropriate manner.

#### **3.9.3 Key Hazards**

Key hazards of and to the Project, which present potential emergency situations, are believed to be as follows and will be considered in the development of the EPRP:

- Fuel and chemical storage, handling and use;
- Fire and explosion hazard
- Road traffic accidents
- Construction Hazards such as working at height or working in confined spaces
- Power cuts / outages
- Weather, climatic events and natural disasters such as earthquakes
- Terrorism or civil unrest

#### **3.9.4 Structure of the EPRP**

A single EPRP will be prepared which covers the construction phase and updated by KPI for the operational phases of the Project. It should include detailed policy, plans and procedures to cover each of



the principle hazards which could potentially be caused by or impact on the Project as identified through the HAZOP process. A proposed structure for the EPRP is as follows:

- Introduction to the EPRP;
- Legislative and Policy Framework;
- Hazard and Operability (HAZOP) Study and Risk Register;
- Audit and Evaluation Procedure for the EPRP;
- Responsibilities and Communications in Emergency Situations;
- Community Emergency Contact Details;
- Containment and control of incidents, including available response equipment and materials;
- Emergency Water Supply;
- Emergency Electrical Power;
- Emergency Preparedness: Evacuation;
- Emergency Preparedness: Staff Training;
- Emergency Preparedness: Planned Drills;
- Emergency Preparedness: Planned Evacuation;
- Spill Response;
- Terrorism Threat Response;
- Riot or Civil Disturbance Response;
- Explosion Response;
- Fire Response;
- Severe Weather Response;
- Other Emergency Situation Response (as applicable); and
- Restoration, clean-up and remedial measures.

It should be stressed that this is an outline structure and it may be necessary to modify or add / delete these proposed headings once the process of producing the EPRP begins in earnest. Drills of the EPRP will need to be exercised at least every six months. The EPC(M) contractor will inform communities and local authorities regularly as plans change and when testing is due to occur. Emergency contact details for community representatives to be contacted in an emergency will be reviewed and updated at least quarterly.

### **3.10 Retrenchment Plan**

Retrenchment of staff may be an issue on the Project at the end of the operational phase where roles may become redundant. Prior to implementing any collective dismissals, KPI will carry out an analysis of alternatives to retrenchment and consider the possibility of internal transfer or other options first. If the analysis does not identify viable alternatives to retrenchment, a retrenchment plan will be developed and implemented to reduce the adverse impacts of retrenchment on workers.

The plan will be based on the principle of non-discrimination and will reflect consultation with workers, workers' representatives (e.g. workers' unions), and, where appropriate, the government (e.g. Ministry of Labour and Social Security), and comply with any KPI collective bargaining agreement which may be in place at the time as well as workers' individual contracts of employment.

The retrenchment plan will consist of several components, namely:

- Consideration of alternatives to retrenchment
- Legislative framework
- Information disclosure and consultation undertaken with employees and workers' representatives



- Grievance mechanism
- Retrenchment methods and procedures
- Selection criteria
- Number and schedule of dismissals, if unavoidable
- Notice periods
- Severance payments methodology and record of payments made
- Offers of alternative employment or assistance in retraining efforts
- Job placements

KPI's policy on retrenchment for Project workers will also be included in the Project HR Policy (see Section 3.4).

With reference to end of contracts, KPI will also be expected to monitor and retain written proof from EPC(M) contractor that all construction employees under their responsibility have been paid for the time they worked on the Project, especially their last month of work.

### **3.11 Community Investment Policy and Plan**

KPI will consult with villagers and the Akim at Karabatan Station prior to further developing its community investment policy and preparing its community investment plan to understand the community's needs and challenges. Separate consultations will be held with women to ensure that their needs and suggestions receive equal consideration for investment. Based on interviews with villagers during the ESIA scoping site visit in April 2014, some initial ideas for investment could include:

- Support for livestock husbandry and income generation from livestock products
- Provision of improved sanitation and showering facilities
- Screening programme for tuberculosis (TB) and advice about TB in animals and food safety
- Investigation of causes of TB and investment to help reduce.

KPI will not make promises that will be difficult to keep and will always maintain a truthful and open discussion with the community in order to create trust. This will help to manage expectations and to avoid hopes being raised unduly.

### **3.12 Site Waste Management Plan**

#### **3.12.1 Background**

This section presents a structure for a site waste management plan (SWMP) which the EPC(M) contractor will use and develop further in order to create a fully bespoke SWMP for the Project. It should be developed initially for the construction phase and updated by KPI for the operational stage prior to the commissioning of the Project.

#### **3.12.2 Objective**

The overall objective of a SWMP is to ensure that waste generated is segregated and managed appropriately in order to ensure maximisation of re-use and recycling and overall waste minimisation. Furthermore, the SWMP ensures that residual waste requiring off-site management is managed according to best practices of the industry.

### 3.12.3 Approach and Activities

The following key steps will need to be considered for the SWMP:

- Identify who is responsible for overall waste management for the Project and inform individuals of their responsibilities. They will be required to hold sufficient authority to ensure compliance with the SWMP by other site operatives;
- Identify the types and quantities of waste - all waste streams that will be produced require to be identified;
- Duty of Care - Outline waste management procedures and records required to demonstrate appropriate handling and final disposal of all wastes;
- Identify suitable waste management sites / landfill sites - the location of waste management sites will need to be identified, ideally the most local sites should be used to minimise transportation costs. Use waste disposal sub-contractors that comply with the environmental legislative requirements of the local and national area;
- Training - all staff must be trained to ensure they understand the requirements of the SWMP;
- Plan - using the steps above, establish indicative percentages of the waste quantities to be produced over the life span of the Project;
- Measure - the quantities of wastes produced should be recorded on a monthly basis, and where possible measures taken to re-use, reduce or recycle waste as appropriate; and
- Monitor - throughout the Project life cycle, waste management on site should be monitored, to ensure compliance with the SWMP;
- Hazardous Classes – hazardous wastes should be classified according to national requirements; and
- Identify waste management options - as described in the ESMP provided in Volume II, a waste hierarchy of reduce, reuse, and recycle and needs to be considered and prepared. Where hazardous wastes are being generated, particular attention to the arrangements for identifying and managing such waste will need to be addressed and procedures put in place.

Within the SWMP it may be necessary to provide bespoke disposal management plans for various waste streams, particularly those considered hazardous or which are potentially problematic in terms of storage and/or disposal. Some of the expected waste disposal management plans for the Project are, but not necessarily limited to the following:

- Collection and disposal management plan for waste oils;
- Collection and recycling plan for waste catalysts, and;
- Collection and recycling/disposal plan for polymer waste.

### 3.12.4 Implementation (Monitoring, Staff Resources, Budget)

Monitoring requirements of the EPC(M) contractor and KPI in relation to the elaboration and implementation of the SWMP is consistent with that described previously for the CEMP. Staff and resources for both the EPC(M) contractor and KPI is the same as those previously defined for CEMP implementation. Furthermore, KPI monitoring budget is included under the overall CEMP monitoring budget presented in section 6.

### **3.13 Hazardous Materials Management and Use Plan**

#### **3.13.1 Background**

This section presents a structure for the Hazardous Materials Management and Use Plan (HMHP) which the EPC(M) contractor will use and develop further in order to create a fully bespoke HWMP for the Project. The HWMP should be complimentary and in parallel to the EPC(M) contractor CEMP and SWMP. It should be developed initially for the construction phase and updated by KPI for the operational stage prior to the commissioning of the Project.

#### **3.13.2 Objectives**

The overall objective of a HMHP is to ensure that all hazardous materials stored during the construction and operational phase of the Project are managed appropriately in order to prevent potential impacts associated with spills, leaks, fugitive emissions and health impacts to workers

#### **3.13.3 Approach and Activities**

The following key steps will need to be considered for the HMHP:

- Identify who is responsible for overall hazardous materials for the Project and inform individuals of their responsibilities. They will be required to hold sufficient authority to ensure compliance with the HWMP by other site operatives;
- Identify the types and quantities of hazardous materials to be stored during the construction and operational phases;
- Identify suitable hazardous waste storage sites;
- Ensure that the storage sites have the appropriate mitigations such as bunds;
- Training - all staff must be trained to ensure they understand the requirements of the HWMP; and
- Hazardous materials should be stored according to national requirements.

#### **3.13.4 Implementation (Monitoring, Staff Resources, Budget)**

Monitoring requirements of the EPC(M) contractor and KPI in relation to the elaboration and implementation of the HWMP is consistent with that described previously for the CEMP. Staff and resources for both the EPC(M) contractor and KPI is the same as those previously defined for the CEMP implementation. Furthermore, KPI monitoring budget is included under the overall CEMP monitoring budget presented in section 6.

### **3.14 Traffic Management Plan Framework**

#### **3.14.1 Introduction**

Pre-defined access routes will be used by long, wide and/or heavy load vehicles transporting large plant components, e.g. Condensers, cooling towers, electrical equipment. These routes will be agreed with the relevant authorities in advance and the police will be notified.

A number of abnormal loads will be generated through construction activity associated with but not limited to:

- Construction plant;
- Cooling tower – prefabricated elements;
- Process plant; and
- Storage tanks.

### 3.14.2 Delivery Plan

Project components shall be delivered to site in accordance with the following:

- Plant to be delivered in sufficient time to meet the agreed erection programme;
- Plant to be delivered in accordance with the requirements of the local municipality, police and road authority;
- Loads to be delivered to site by road or rail and stored on site. It will be the EPC(M) contractor responsibility to identify a suitable storage location and obtain any necessary authorisations;
- A pilot escort vehicle should be used to provide an escort for all abnormal load vehicles travelling to the site by road. The general preference in these situations is to employ a convoy system, with a vehicle at the front and rear to warn oncoming vehicles of the approaching load. The escort would also help to minimise disruption of flow for other road users by pulling the convoy over at pre-identified locations to allow build up of following traffic to pass. Drivers responsible for operating the convoy should be fully briefed on the route, where and when to make the pre-defined stops, and be aware of all contingency measures in place in the event of an incident occurring. All vehicles and lead traffic management staff shall be in contact with the use of two-way radios;
- Employ additional traffic management staff (to be agreed with police if required prior to transportation) for any locations where pedestrians are most likely to be present;
- Ensure road conditions are sufficient to transport the planned loads;
- Ensure clear roadways to allow transporters passage through geometrically constrained sections of the route. At strategic locations parking will need to be restricted at times of delivery; and
- Develop contingency plan, in consultation with the police, to cover an event where an abnormal load becomes immovable on the public road, for any reason (for example, breakdown, un-anticipated route restriction, accident).

A driver's induction for abnormal load vehicles will include:

- Safety briefing including detail of all contingency measures;
- The need for appropriate care and speed control;
- Identification of specific sensitive areas; and
- Clarification of identified route, the requirement not to deviate from this route, the requirement to adhere to convoy system and pull over at pre-defined points to allow build-up of traffic to pass.

### 3.14.3 Site Traffic

The following points will apply to general site traffic:

- General site traffic and general construction traffic will not require the presence of an escort when travelling to and from site;
- Drivers shall be aware of route and contingency measures as pre-defined at induction stage;
- Drivers of HGV are to be briefed in good road practice and will be instructed to pull over on narrow sections of road to allow build up of traffic to pass;
- All general site traffic and construction vehicles, including concrete related deliveries, will run to coincide with site working hours;

- Normal load construction vehicles will use a defined route and obey site speed limits, which will need to be agreed;
- Signage will be kept to a minimum, however temporary direction signs indicating local routes to site and site entrances will be required at strategic locations on local roads;
- The detailed signing arrangement will be agreed between the appointed EPC(M) contractor in close liaison with the local municipality and the police service;
- Wherever possible, arrangements will be made for site workers to be transported to site via shared transport to minimise unnecessary traffic movements locally; and
- The EPC(M) contractor will be required to implement induction procedures and regular up-dates for all drivers to establish and promote an overall culture of safety and awareness of other road users.

#### **3.14.4 Implementation (Monitoring, Staff Resources, Budget)**

Monitoring requirements of the EPC(M) contractor and KPI in relation to the elaboration and implementation of Traffic Management Plan Framework is consistent with that described previously for the CEMP. Staff and resources for both the EPC(M) contractor and KPI is the same as those previously defined for the CEMP implementation. Furthermore, KPI monitoring budget is included under the overall CEMP monitoring budget presented in section 6.

### **3.15 Chance Finds Procedure**

#### **3.15.1 Overview**

Effective protection of cultural heritage is based on an understanding of the key issues, appropriate assessment and the correct action to minimise damage or loss. As unknown features / objects could be encountered during works, in particular earthworks, a 'chance finds procedure' will be in place to stop works and require investigation by an archaeologist in case of such findings.

This section of the ESMP contains a 'chance finds procedure' for use by the EPC(M) contractor and construction sub-contractors. Updates or amendments will be made by the EPC(M) contractor where appropriate.

#### **3.15.2 Framework Chance Finds Procedure**

##### **3.15.2.1 Definitions**

'Chance finds' are defined for the purposes of this procedure as physical cultural resources encountered unexpectedly during project implementation.

'Physical Cultural Resources' (PCR) are defined as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, palaeontological, historical, architectural, religious, aesthetic, or other cultural significance. Their cultural interest may be at the local, provincial, national or international level.

##### **3.15.2.2 Ownership**

The ownership of any chance finds discovered on the Project will be determined by The Ministry of Culture of the Republic of Kazakhstan.

### 3.15.2.3 Training

So that the construction sub-contractor and employees such as equipment operators and supervisors on the Project can identify physical cultural resources, training will need to be given. Prior to commencement of works the EPC(M) contractor (in collaboration with KPI) will consult with the authorities mentioned above in order to arrange training for its employees. KPI will monitor this process to ensure that effective training is given to the correct members of the construction workforce.

### 3.15.2.4 Procedure Upon Discovery

Suspension of work:

- Upon discovery of physical cultural resources, the construction sub-contractor shall stop work;
- In some cases, all work will need to be suspended, in others just the work in the immediate vicinity of the find will need to stop, in others still, all work within a certain radius of the find must cease. This issue will depend on the type of find and will be informed by a qualified archaeologist;
- After stopping work, the construction sub-contractor must immediately report the discovery to the EPC(M) contractor Environmental Officer who will in turn report the finding to KPI's Environmental and Social Manager. The sub-contractor may not be entitled to claim compensation for work suspension during this period; and
- KPI's Environmental and Social Manager (in consultation with KPI management) may be entitled to suspend work and to request from the sub-contractor some excavations at the sub-contractor's expense if he thinks that a discovery was made and not reported.

Conditions and requirements for work stoppage:

- With the approval of KPI's Environmental and Social Manager, the sub-contractor is then required to temporarily demarcate and limit access to the site, or, the Environmental and Social Manager may decide that the item can be removed and work may continue, for example where the item is a single coin of archaeological value.

Chance Find Report:

- The EPC(M) contractor will submit a Chance Find Report within one day of the find. This will record the following information:
  - Date and time of the discovery;
  - Location of the discovery;
  - Description of the PCR;
  - Estimated weight and dimensions of the find; and
  - Temporary protection that has been implemented.

The Chance Find Report will be submitted to KPI's Environmental and Social Manager, and other concerned parties as agreed with the provincial cultural authorities, and in accordance with national legislation (to be agreed upon submission of this Chance Finds Procedure to the provincial authorities for their comment/approval).

KPI's EEHS Director is required to inform the cultural authority immediately following the submission of the Chance Find Report.

#### 3.15.2.5 Arrival and Actions of Cultural Authority

If deemed necessary by the Ministry of Culture of the Republic of Kazakhstan, they will send a representative to the discovery site, who will arrive within a stipulated time frame, such as 24 hours if all work has been suspended (details will be agreed between the authority, KPI and the EPC(M) contractor). The representative will determine the action to be taken which may include, but will not be limited to:

- Removal of the PCR(s) deemed to be of significance;
- Execution of further excavation within a specified distance of the discovery point; and
- Extension or reduction of the area demarcated by the sub-contractor.

These actions should be taken within seven calendar days of the representative arriving on site in the case of the suspension of works.

If the cultural authority fails to arrive within the stipulated period (for example, 24 hours), KPI's Environmental Officer will have the authority to extend the period by a further stipulated time.

If the cultural authority fails to arrive after the extension period, KPI's EHS Director may have the authority to instruct the sub-contractor to remove the PCR or undertake other mitigating measures and resume work. Such additional works can be charged to the contract. However, the sub-contractor may not be entitled to claim compensation for work suspension during this period.

#### 3.15.2.6 Further Suspension of Work

During the seven calendar day period (see above section on arrival and actions of cultural authority) the cultural authority may be entitled to request the temporary suspension of the work at or in the vicinity of the discovery site for an additional period of up to 30 calendar days or longer if deemed necessary.

The construction sub-contractor may, or may not be, entitled to claim compensation for work suspension during this period (to be elaborated by KPI within the contract documents. However, the sub-contractor will be entitled to establish an agreement with the cultural authority for additional services or resources during this further period under a separate contract with the cultural authority.

#### 3.15.2.7 Resumption of Work

Following approval from the cultural authority KPI's Environmental and Social Manager will issue the sub-contractor with the instruction to recommence works.

#### 3.15.2.8 Review

KPI's Environmental and Social Manager will review the process and amend it as necessary to ensure efficiency and effectiveness of the chance finds procedure in the future.

### 3.15.3 Implementation (Monitoring, Staff Resources, Budget)

Monitoring requirements of the EPC(M) contractor and KPI in relation to the implementation of Chance Finds Procedure is consistent with that described previously for the CEMP. Staff and resources for both the EPC(M) contractor and KPI is the same as those previously defined for CEMP implementation. Furthermore, KPI monitoring budget is included under the overall CEMP monitoring budget presented in section 6.

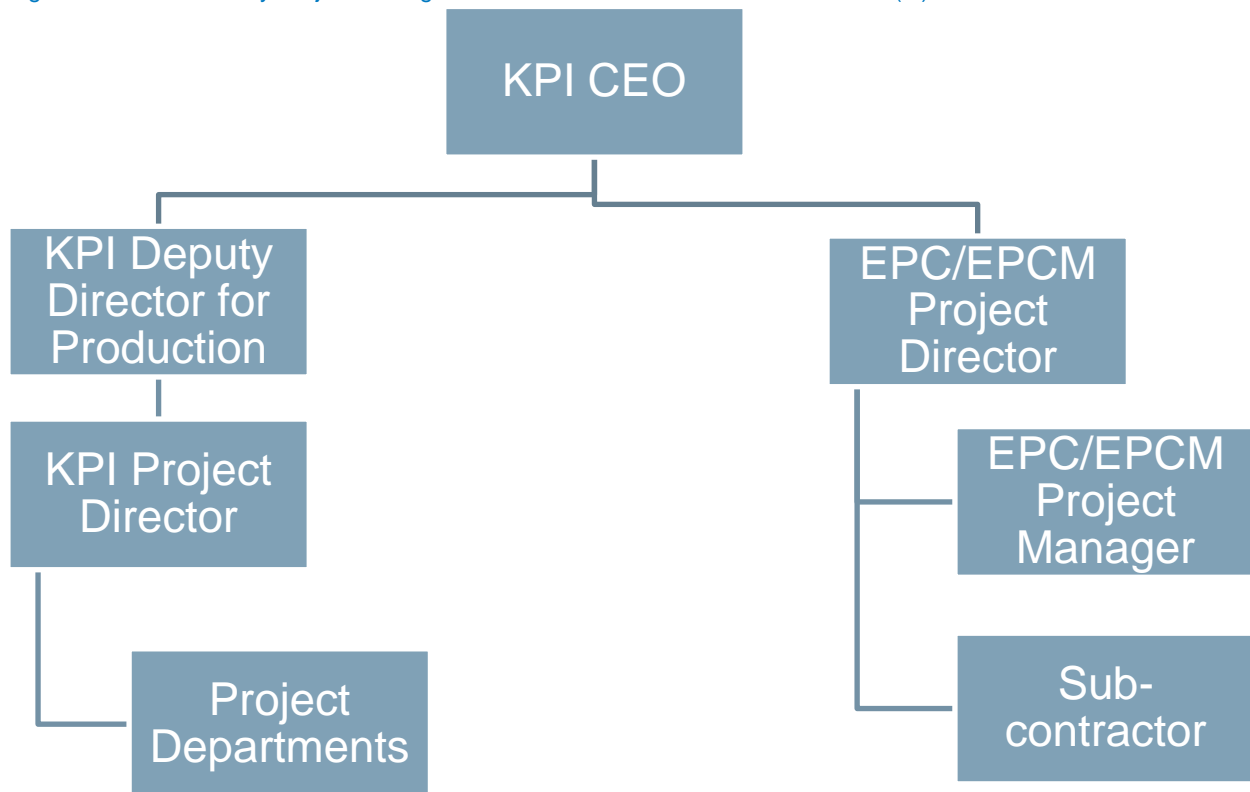
# 4 Institutional Arrangements and Implementation

## 4.1 Construction Project Structure

### 4.1.1 Overview

During the construction phase an indicative project management structure is presented in Figure 4.1

Figure 4.1: Preliminary Project Management Structure of Main KPI and EPC/EPC(M) Contractor



Source: Mott MacDonald

### 4.1.2 Construction EHS Management

#### 4.1.2.1 KPI Environmental, Health and Safety (EHS) Management

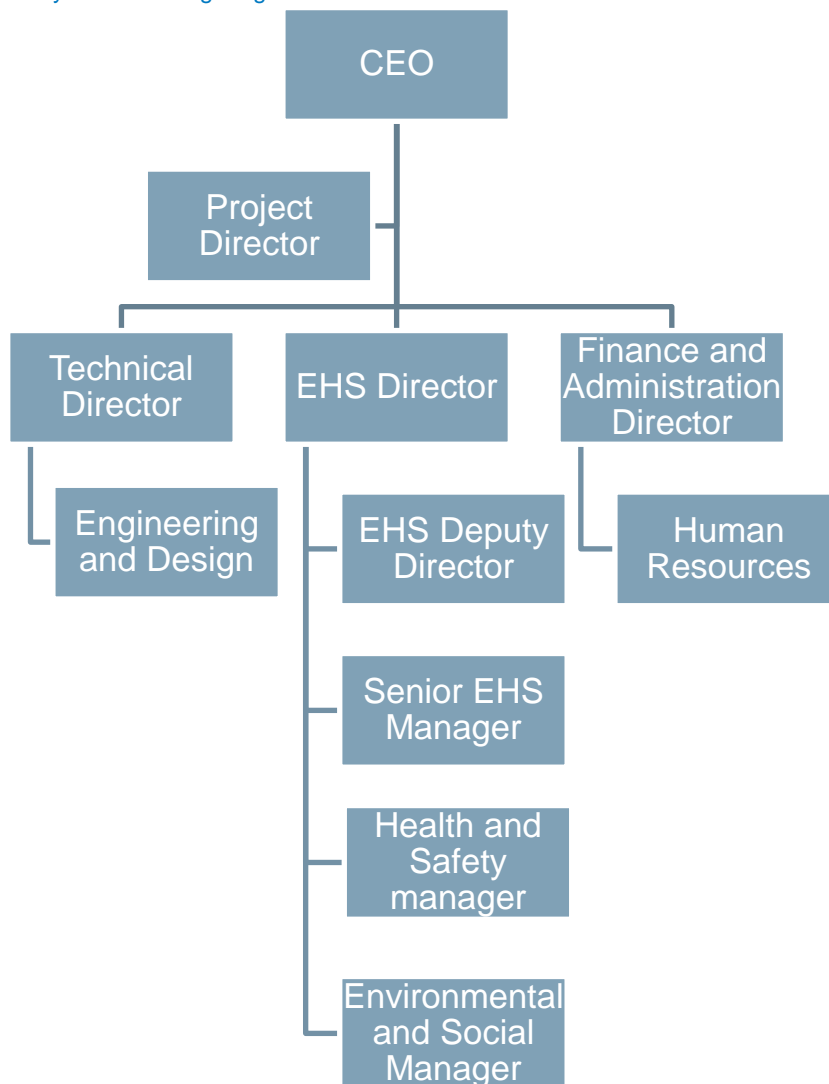
KPI has not yet finalised its formal EHS and social policies and systems along with many of the other management systems that will need to be in place for the commencement of construction and into operation. However, it is KPI's intention to develop a comprehensive EHS Department to oversee and manage all EHS issues during the construction and operational phases.

The proposed staffing structure of the EHS department is under development but consists of the key roles as set out in Figure 4.2 and in Table 4.1. KPI's personnel key roles and responsibilities will be set out in



procedures created as part of the EHS management system, including organisational and individual working procedures.

Figure 4.2: Preliminary KPI EHS Organogram



Source: Mott MacDonald

Table 4.1: KPI EHS Department - Key Roles and Responsibilities

Role	Number	Responsibility	Location	Construction	Operation
EHS Director	1	Policy, overall responsibility, government liaison	Head Office with regular visits to site	✓	✓
EHS Deputy Director	1	Environmental and Social reporting, management of EHS system, auditing and community liaison	Head Office with regular visits to site	✓	✓
Environment and Social Manager	1	Compliance reporting on environmental and social issues to the Deputy Director	Head Office with regular visits to site	✓	✓
Health and Safety Manager	1	Compliance reporting on Health and Safety issues to the Deputy Director	Head Office with regular visits to site	✓	✓
Support staff	to be defined	Community liaison, environmental reporting and monitoring	On site	✓	✓

It should be noted that there will also be a number of support staff, including environmental officers and engineers and technicians, social specialists and administrative staff. Whilst some evolution of the department structure, staff numbers and responsibilities will change as the project moves through construction into operation the overall structure and roles and responsibilities will be defined during its inception and modifications implemented as required.

KPI recognises that there is a need to build its capacity to implement and manage the ESMP requirements and address any EHS issues that may arise. Therefore, recruitment for the EHS team is underway, with the focus at this stage on recruiting key staff with responsibility for managing construction phase environmental and social issues and implementing the ESMP. Further detail on capacity building including more detail on some of the roles set out above is provided in Section 4.2.3.

#### 4.1.2.2 Contractor EHS Management

The EPC(M) contractor will be encouraged to adhere to the principles of ISO 14001:2004<sup>3</sup> and OHSAS 18001:2007<sup>4</sup> or equivalent if not already accredited. These standards place strong emphasis on the need for continuous improvement of the EHS management systems and resultant EHS management performance.

The appointed EPC(M) contractor will be required to agree to the following actions:

- Develop a project specific CEMP, the framework for which is set out in Section 3.2;
- Elaborate other parallel sub plans, the framework for these are set out in Sections 3.3 to 3.15;
- Implement the requirements of the mitigation activities in the construction ESMP via the above plans;
- Provide a construction site layout plan that identifies key activity area including laydown, accommodation and parking etc. prior to commencement of works;

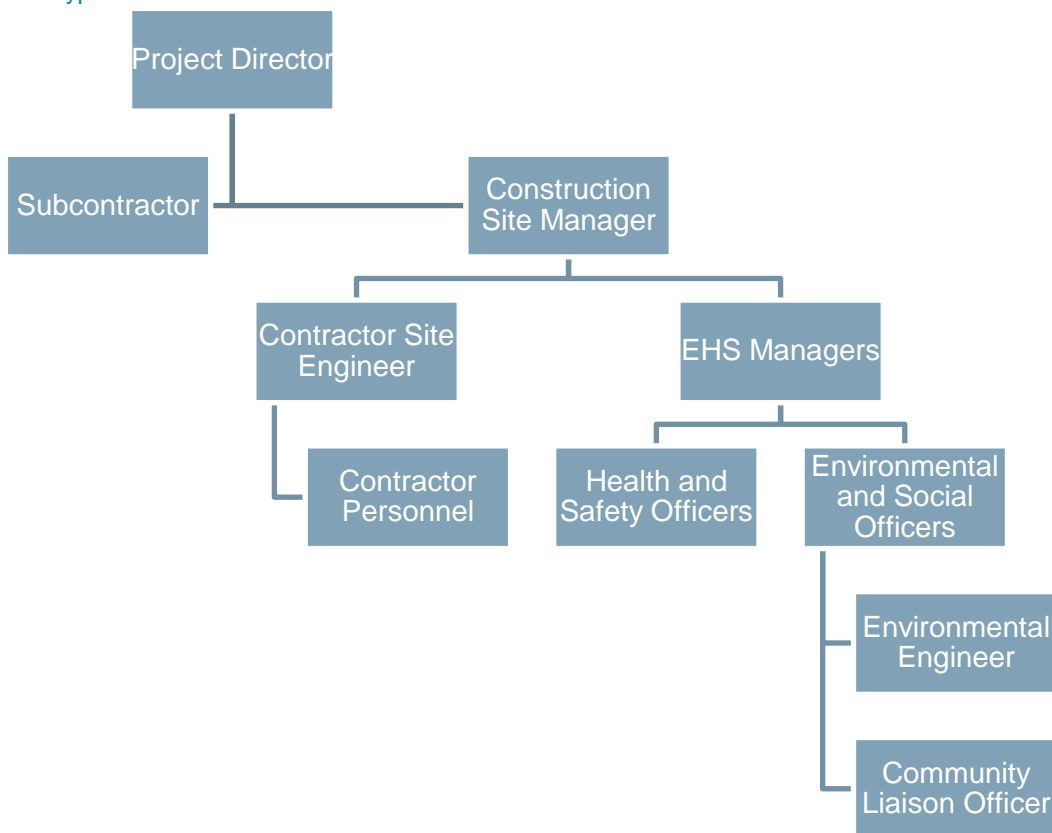
<sup>3</sup> ISO 14001:2004 <http://www.iso.org/iso/home/standards/management-standards/iso14000.htm>

<sup>4</sup> OHSAS 18001:2007 <http://www.bsigroup.com/en-GB/ohsas-18001-occupational-health-and-safety/>

- Produce detailed method statements relating to key activities that include specific reference to requirements of the plans contained herein during the Project progression;
- Provide all training necessary to oversee and implement ESMP requirements;
- Be responsible for producing comprehensive suite of EHS management and coordination procedures; and
- Identify a full time person on site with dedicated EHS responsibilities to oversee works on site.

The EPC(M) contractor will be required to be responsible for sub-contractor(s)' performance, including sub-contractor(s) adhere to the requirements of the construction ESMP and the CEMP. All sub-contractor(s) will be required to have dedicated environmental and social staff to implement the CEMP and to monitor and manage this on an on-going basis. The sub-contractor(s) staff will be required to liaise closely with the EPC(M) contractor EHS staff including the provision of monthly reports and participation in weekly construction review meetings, for example. A typical construction Contractor EHS staffing structure that could be expected for this Project is set out in Figure 4.3 and Table 4.2 below.

Figure 4.3: Typical EPC/EPCM Structure



Source: Mott MacDonald

Table 4.2: Typical Contractor EHS Staffing

Role	Number	Responsibility	Comment
Project Director	1	Overall responsibility for EHS performance of Project contracted works, including sub-contractor(s).	
Construction Site Manager	1	Responsible for practical implementation of EHS requirements at site and for onsite EHS performance.	
EHS Managers	1	Monitoring and reporting of project EHS performance. EHS regulatory interface.	
Contractor Environmental and Social Officer	2	Management and monitoring of CEMP plans implementation and environmental issues and performance	Number of officers may vary depending on level of construction activity
Contractor Social and Community Liaison Officer	1	Management and monitoring of social issues and performance, Contractor community liaison officer	To work closely with KPI CLO
Health and Safety Officer	1	Management and monitoring of CEMP plans implementation and report health and safety issues to the EHS Manager	

### Environmental/Social Officer

The EPC(M) contractor will be required to nominate a person be appointed to take the primary responsibility for day-to-day implementation of the CEMP and parallel management plans. The formal job description would be generally in accordance with the elements provided below.

The nominated person will carry out the following responsibilities:

- Take prime responsibility for practical implementation of the environmental management;
- Oversee and ensure the implementation of the CEMP and parallel management plans (with support from the EPC(M) contractor Construction Site Manager, detailed below) and ensure all sub-contractor(s) are in compliance with the CEMP requirements;
- Review and report performance to the EPC(M) contractor Construction Site Manager and KPI;
- Review sub –contractor(s) environmental protection/mitigation measures to ensure compliance with the ESMP;
- Report on a daily basis any CEMP non-compliances to the EPC(M) contractor Construction Manager;
- Carry out regular environmental awareness sessions and assist personnel in applying environmental standards on site;
- Conduct regular audits / inspections to check that committed impact mitigation measures are being implemented; and
- Act as the first point of contact on environmental matters for the EPC(M) contractor, for the government authorities, other external bodies and the general public.

There are certain criteria that the EPC(M) contractor environmental officer will be required to have knowledge and experience in, including:

- An understanding of the international standard techniques of environmental management;
- Familiarity with local environmental legislation and the likely developments in this field;
- Practical operation of environmental monitoring techniques;
- Ability to summarise environmental data in order to produce concise and conclusive reports;
- Hold the confidence to enforce strict, but pragmatic, environmental control procedures and to motivate the construction staff to a high level of environmental awareness; and
- Minimum of five years practical experience on construction sites.

#### **EPC(M) contractor Construction Site Manager**

The EPC(M) contractor Construction Site Manager will need to work to co-ordinate efforts based on inputs from the Environment Officer(s) and assist in the allocation of staff with the skills for applying the CEMP on site. It is envisaged that the Construction Manager will:

- Ensure that the Environment Officer is adequately qualified to understand and implement the CEMP;
- Nominate personnel to assist the Environment Officer as required; and
- Be responsible for communications with KPI with regard to environmental issues and non-compliances.

#### **4.1.3 Operational EHS Management**

The proposed KPI organisational structure for the operational phase will be largely similar to that proposed for the construction phase as shown in Section 4.1.2.1; however, as the Project nears operation it is possible that this structure may be adapted to best meet the requirements of the project.

### **4.2 Capacity / Institutional Requirements**

#### **4.2.1 Overview**

This section provides a summary of the current capacity requirements needed to ensure effective implementation of the environmental and social management and monitoring measures. However this will be reviewed on a regular basis in order to identify any further staff or resources needed.

#### **4.2.2 Environmental and Social Management System (ESMS)**

The key capacity requirement will be development of an overarching EHS management system, of which an Environmental and Social Management System (ESMS) will form an integral part. KPI will develop an ESMS that can encompass overall management of the construction phase and then evolve to provide a robust system for managing and monitoring all environmental and social issues for all the Project components. EHS department will co-ordinate its environmental and social responsibilities and to oversee the activities of the EPC(M) contractor.

KPI will develop an ESMS in line with international standards such as ISO 14001:2004 at the corporate level. This should include the following aspects:

- Identification and production of register of environmental and social aspects;
- Preparation of register of legislation and consent requirements;
- Development of an Environmental Policy;
- Development of Environmental Improvement Plan based on legislative requirements and identified environmental aspects to be implemented through development of:
  - Environmental and Social Management and Monitoring Procedures;
  - Environmental Operating Procedures;
- Preparation of action lists and responsibilities; and
- Development of training materials and key performance indicators.

Inherent in the successful operation of an ESMS will be to include a review and improvement cycle whereby the regular management review of key performance indicators and the successful implementation of the ESMS on a day to day basis will ensure that it is functioning properly.

The ESMS will be developed prior to commencement of construction and expanded into a detailed suite of relevant policies and procedures relevant to operation prior to commencement of operation. Construction phase environmental and social management will be managed through the ESMS and the EPC(M) contractor CEMP. The stake holder engagement will also be implemented through the pre-construction and construction stage with the Community Liaison Officer taking a key part in its delivery.

### **4.2.3 Capacity Building**

#### **4.2.3.1 Environmental Staff**

There is a requirement for capacity building within KPI to implement the ESMP and successfully manage EHS and social issues during the construction and operational phases. The key responsibilities of the head office environmental team will include;

- Ensuring all commitments/requirements of ESIA are met;
- Co-ordination with various government agencies during the construction and operation phases;
- Implementation of the ESMS and oversight of all on-site environmental engineers; and
- Environmental training for on-site environmental engineers.

Adequate resource will be assigned to the environmental team. The exact number of staff to be assigned environmental responsibilities for the construction and operational phases will be established prior to the start of that phase and kept under review to confirm that sufficient resources are available.

Training for proposed on-site environmental engineer(s) will be undertaken in order to ensure they have adequate skills and knowledge to fulfil their roles. At least some of the environmental staff recruited or assigned responsibilities will need to be experienced environmental specialists with comprehensive training then provided to any staff without a suitable background in order to ensure they are capable of undertaking their assigned tasks. There may also be a requirement for KPI to be supported by experienced

external environmental and social specialists on a consultancy basis and who may be activity involved in the capacity building process.

It is expected that the environment and social team will carry out the following responsibilities:

- Take prime responsibility for the environmental management of the Project as a whole in compliance with requirements of the EBRD Environmental and Social Performance Requirements, IFC Performance Standards, and JBIC and NEXI environmental and social guidelines;
- Review reporting and compliance audits undertaken by EPC(M) contractor environmental officer;
- Review and report on performance of the EPC(M) contractor to the relevant State Body (as required) and to the lenders' environmental and social safeguards;
- Prepare compliance reports on progress of achieving obligations identified in the ESMP for submission to the Lenders;
- Report on a daily basis any CEMP non-compliances to the EPC(M) contractor Project Manager; and
- Training of environmental engineers and other KPI project staff.

#### 4.2.3.2 Social Staff

Similar to environmental staff, there is a need for capacity building within KPI to provide staff to be responsible for social and community management.

KPI will appoint a CLO or similar with responsibility for managing the Stakeholder Engagement Plan (SEP) and other social commitments included within this ESMP, e.g. implementation of the Community Grievance Mechanism, HIV / AIDS awareness programme, the traffic safety sessions, etc.

The role of the CLO is to develop and maintain good working relationships with the local communities. Since their job will involve listening and responding to local concerns and suggestions, the CLO must have the following qualities and skills:

- Good people and communication skills;
- A good understanding of the local language and community/cultural dynamics;
- Open-mindedness and respect for the views of others;
- A solution-oriented approach;
- A high integrity/degree of trustworthiness; and
- A genuine commitment to the position and its goals.

One of the key responsibilities of the CLO will be to implement community level components of the Project's SEP which includes the following activities:

- Being the main point of contact for community stakeholders to request information or lodge grievances which the CLO must process and work to resolve in a timely and satisfactory manner according to the Project's grievance mechanism;
- Disclosing all relevant information as specified in the ESIA (for example the Project employment policy proposed as mitigations, grievance mechanism), meeting with stakeholders and documenting all interactions;
- Organising meetings with stakeholders (except for media), especially the local group leaders (for instance there are women's groups, youth groups, village elders, religious leaders) and the elected and

appointed local authorities to provide a regular opportunity to discuss any issues or concerns stakeholders may have.

In order to be effective, the CLO needs to have the authority to negotiate on behalf of KPI. This requires a clear reporting structure and clarification as to which decisions CLO can take unilaterally, and which are to be passed on to higher levels within the company. Direct reporting lines should be used to enable senior managers to more effectively control risks by being kept informed of field-level information in a timely manner. The more likely it is that the concerns of local stakeholders might pose a risk or reputation issue for the Project; the more important it is for the CLO to have a direct channel to senior managers.



# 5 Reporting Requirements

## 5.1 Introduction

Effective reporting is essential for rendering an ESMP of practical value. Routine independent auditing provides the necessary impetus for continual improvement. Without these two fundamental elements, such systems simply degenerate into data collecting exercises. Performance monitoring, reporting and auditing should be carried out to ensure compliance with the requirements of this ESIA, ESMP and the overall Environmental and Social Management System. The following provides an outline approach which is aligned to the requirements of ISO 14001. The final scope and format of all reports proposed herein will be agreed with the lender prior to them being required and produced.

## 5.2 Adaptive Management

The ESMP and plans contained herein will adopt an “adaptive management” approach throughout the life cycle of the project. The creation of the plans at the outset is a fluid process with the management objectives and performance indicators tailored to the current design and objectives of the project. The ESMP utilises to the extent possible existing project knowledge to fully address the actual environmental and social impacts of the project at the time and allow flexibility in environmental and social management decisions made on the project.

To ensure adaptive management of the ESMP the following actions will be implemented:

- The ESMP will be reviewed and amended in accordance to the project design and status as it evolves. Key information about any changes to project description will be regularly reviewed (monthly) and site visits undertaken by KPI EHS staff to identify the true impacts of the project.
- Evaluation of the effectiveness of measures included in the ESMP will be undertaken on a regular basis as the project evolves through construction, operation and decommissioning of the project. Evaluation will be undertaken through on-going communication with the EPC(M) contractor, construction sub- contractors, stakeholders and lenders supplemented by site audits and monitoring data review to identify weaknesses and / or gaps in the management plans. The ESMP will be changed and / or updated accordingly to ensure appropriate, robust and effective environmental and social management commensurate to the scale of the Project through its lifetime.

### **5.3 Monitoring and Reporting**

#### **5.3.1 EPC(M) Contractor Monthly Internal Reports**

The EPC(M) contractor will undertake on a daily basis, compliance monitoring of the construction sub-contractors environmental and social activities as per the IFC Environmental, Health, and Safety guidelines and the approved EPC(M) contractor CEMP and sub plans.

The EPC(M) contractor Environment Officer will be required to prepare a monthly report for issue to the KPI EHS Director. These reports should normally be no more than one or two pages in length, to summarise the following:

- Progress in implementing their CEMP and parallel management plans;
- Findings of the monitoring programmes, with emphasis on any breaches of the control standards, action levels or standards of general site management;
- Outstanding Non-Compliance Reports (NCRs);
- Summary of any complaints by external bodies and actions taken/to be taken; and
- Relevant changes or possible changes in legislation, regulations and international practices.

Any breaches of the acceptable standards specified by law/construction permits and/or this ESIA should be reported to KPI, using a NCR Form.

#### **5.3.2 KPI Monitoring of Construction Activities**

KPI will undertake on a weekly basis, compliance monitoring of the EPC(M) contractor environmental and social activities as per the IFC Environmental, Health, and Safety guidelines and the approved EPC(M) contractor CEMP and sub plans. Internal audits will be undertaken within two months of commencement of construction and thereafter every three months focussing on the performance of the implementation of the EPC(M) contractor CEMP. KPI will also audit the workers' accommodation camps on a three monthly basis.

Any breaches of the acceptable standards specified by law/construction permits and/or this ESMP through the KPI monitoring of the EPC(M) contractor will be reported using a Non Compliance Record (NCR) Form.

A copy of each completed NCR (whether prepared by the EPC(M) contractor or KPI) should be held on file by the KPI EHS department, to be replaced by the reply copy when it is received. A record of corrective actions should also be made and tracked to their completion.

During the construction phase, KPI will undertake 6 monthly reporting, based on their monitoring results as a project requirement.

### **5.3.3 KPI Monitoring of Operational Activities**

The environmental and social impacts that will occur during the operation phase have been assessed through the ESIA. Impacts will be managed and monitored through the commitments outlined in this ESMP. The KPI EHS Director will prepare annual reports for issue to the lenders summarising progress against implementation of the KPI's ESMP obligations throughout the operational phase. This will include full reporting of monitoring results where relevant (e.g. air quality monitoring within the Project area).

Adherence to the OHS plan and procedures will be taken seriously and audited frequently. A warning system for violations and non-compliance will be established and implemented for the monitoring system to be effective.

Regular monitoring of the project performance grievance mechanism and stakeholder engagement will take place.

### **5.3.4 KPI Annual Sustainability Reporting**

During the operational phase, the frequency of reporting will be annual and based on monitoring results. It will address the full range of environmental and social issues addressed in this ESIA.

### **5.3.5 KPI External Reporting for Regulatory Compliance**

Adhering to the external reporting requirements as set out in Kazakhstan Law is important. A register of all necessary external stakeholder reporting requirements under Kazakhstan Legislation and for regulatory compliance purposes should be developed and form part of the ESMS. The frequency of reporting, the required reporting format and the person(s) responsible for producing the report (along with any necessary specialist service providers/constructors required to assist for data collection or interpretation purposes) is to be noted in the register.

KPI will ensure that all the necessary reports are produced and submitted in a timely fashion in order to achieve on-going regulatory compliance throughout the life of the Project. Meeting regulatory reporting requirements is to also form part of the scope for any internal audits and management reviews.

## 5.4 Annual Independent Audits and Lenders Reviews

### 5.4.1 Independent Monitoring

The Equator Principles and EBRD requires that all 'Category A' Projects such as this Project require an independent environmental and/or social expert to verify project monitoring information.

During the construction phase and as a minimum, throughout the first three years of the operations, arrangements should be made by KPI for an industrial environmental management specialist to carry out an independent annual audit of the existing practices against the requirements of the ESMP. The key objectives of the audit should be as follows:

- Report on the practical implementation of the ESMP and progress since the last visit; and
- Establish feasible improvement objectives for completion before the next visit.

These audits should be used to re-examine the continued appropriateness of the ESMP and to provide advice on any up-dates required. Attention should be given to lessons learnt in the light of experience. In particular, consideration should be given to the monitoring programmes in place to determine whether their purpose has been served and they can therefore be terminated or reduced in frequency.

Monitoring of social issues will be important, especially with regards to worker management, workers' terms and conditions (including the labour accommodation), occupational health and safety and grievances. External monitoring will need to verify that the Project commitments to worker's rights are implemented, in particular with regards to:

- Use of child labour;
- Payment of minimum wages and overtime;
- Not taking any action to prevent employees from exercising their right of association and their right to organise and bargain collectively;
- Ensuring no workers are charged fees to gain employment on the Project;
- Implementation of plans, procedures and training for occupational health and safety;
- Non-discrimination and equal opportunity;
- Use of the labour grievance mechanism;
- The existence of human resource policies, job descriptions, written contracts;
- Provision of information to labour force regarding rights and working conditions; and
- Employee training activities.

Annual monitoring reports of the independent advisor will be made available for public disclosure on the project's website and on applicable IFIs website.

#### **5.4.2 Monitoring by Lenders**

Representatives of the lenders will be involved in regular field visits to monitor the Project's progress in implementing environmental and social measures. Prior notice will be provided to the Project before field visits. KPI's field staff will provide further information of specific local environmental and social activities and help to coordinate interviews with EPC(M) contractor and construction sub-contractor representatives, community representatives, and government representatives, if required by the lenders.

## 6 ESMP Budgets

### 6.1 Indicative Budget

The overall ESMP indicative budget up to and during construction totals 2,445,000 USD before commissioning and operation of the Project. Thereafter, an indicative ESMP budget for the operational phase of 415,000 USD per year over 25 years has been set aside, although the duration of monitoring may not require to be extended over 25 years. The ESMP budget is organized around the following areas:

- KPI Company Level EHS Management, Co-ordination and Communication
- KPI ESMP Compliance Monitoring
- EPC(M) Construction Environmental Management
- KPI Environmental Monitoring
- Social Management

Table 6.1 shows its distribution over the different areas and over the key development periods of construction and early years of operation. The table also outlines the nature of the activities included. The cost assumptions are based on a three year construction period and a 25 year operational period of the Project.

Table 6.1: Indicative ESMP Budget

ESMP Budget	Construction		Operation
	Per Year	Total	Per Year
<b>KPI Company Level EHS Management, Co-ordination and Communication</b>	<b>\$325,000</b>	<b>\$975,000</b>	<b>\$285,000</b>
Capacity building programme for Health, Safety and Environment Department in KPI	\$50,000	\$150,000	\$10,000
Operation of EHS Department including personnel costs over and above existing department costs	\$100,000	\$300,000	\$100,000
EHS Department direct costs including facilities, offices equipment and expenses over and above existing department costs	\$100,000	\$300,000	\$100,000
External Independent Expert Verification	\$75,000	\$225,000	\$75,000
<b>KPI ESMP Compliance Monitoring</b>	<b>\$50,000</b>	<b>\$150,000</b>	<b>\$50,000</b>
Monitoring of EPC(M) contractor Environmental Management and Pollution Prevention activities including chemical storage and spill prevention, noise management, waste management, wastewater management, air quality etc	\$50,000	\$150,000	-
Monitoring KPI Environmental Management and Pollution Prevention activities including chemical storage and spill prevention, noise management, waste management, wastewater management, air quality etc	-	-	\$50,000
<b>EPC(M) Construction Environmental Management</b>	<b>250,000</b>	<b>750,000</b>	
<b>KPI Environmental Monitoring</b>	<b>\$10,000</b>	<b>\$30,000</b>	<b>\$20,000</b>
Ambient air quality monitoring			\$10,000

ESMP Budget	Construction		Operation
	Per Year	Total	Per Year
Groundwater monitoring	\$5,000	\$15,000	\$5,000
Soil monitoring	\$5,000	\$15,000	\$5,000
<b>Social Management</b>	<b>\$180,000</b>	<b>\$540,000</b>	<b>\$60,000</b>
KPI staff including Community Liaison Officer, training and monitoring	\$60,000	\$180,000	\$60,000
EPC(M) Staff, training (internal and external), facilities, materials, expenses to deliver the following	\$120,000	\$360,000	-
Development and implementation of recruitment and employment policies including equality provisions			
Preparation and dissemination/training of worker code of conduct, cultural training, worker grievance mechanism, health awareness, occupational health and safety, sustainable resource use, hunting etc			
Monitoring of workers camp conditions and compliance with code of conduct etc			
Development and implementation of community awareness and disclosure programme including community health and safety, project progress, community liaison, skills training etc			
EPC(M) Community Liaison officer			
<b>Total</b>	<b>\$815,000</b>	<b>\$2,445,000</b>	<b>\$415,000</b>
<b>Contingency Fund</b>	<b>\$75,000</b>	<b>\$250,000</b>	<b>\$50,000</b>

## 6.2 Reallocation of Funds / Update of Budgets

A number of the indicative costs have been estimated on the basis of the information available at the time of the preparation of the ESIA documentation. It is expected that the cost associated with some measures may change and although a provision was always made when the budget was prepared, it is possible that budgets allocated prove to be either under-estimated or over-estimated. KPI will review the budgets on a regular basis and will submit these to the lenders.

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# Appendix A. Environment and Social Action Plan

Item No.	Task / Measure / Corrective Action	Purpose of Action	Source of Requirement	Responsibility	Deliverable (Report/Measure of success)	Deadline
<b>IFC PS1: Assessment and Management of Environmental and Social Risks / EBRD PR1:Environment and Social Appraisal and Management</b>						
1.1	<ul style="list-style-type: none"> <li>Submit report to the Lenders in accordance with requirements set out within the ESMP on environmental, social, health and safety performance and including status of each ESAP element and current status of Environmental Health and Safety issues.</li> </ul>	<ul style="list-style-type: none"> <li>To ensure measures within the ESIA and permit conditions are being implemented.</li> </ul>	<ul style="list-style-type: none"> <li>IFC PS1</li> <li>EBRD PR1</li> </ul>	<ul style="list-style-type: none"> <li>KPI</li> </ul>	<ul style="list-style-type: none"> <li>Submission of report on specified schedule.</li> </ul>	<ul style="list-style-type: none"> <li>Three monthly reports to be submitted during first year of construction and six monthly thereafter</li> <li>Six monthly reporting during operation period</li> </ul>
1.2	<ul style="list-style-type: none"> <li>Reapply for, receive, and comply with all permits and authorisations.</li> </ul>	<ul style="list-style-type: none"> <li>To ensure compliance with national laws.</li> </ul>	<ul style="list-style-type: none"> <li>IFC PS1</li> <li>EBRD PR1</li> <li>Kazakhstan Law</li> </ul>	<ul style="list-style-type: none"> <li>KPI</li> </ul>	<ul style="list-style-type: none"> <li>Report to Lenders on permit status prior to construction.</li> </ul>	<ul style="list-style-type: none"> <li>Prior to action requiring permit/authorisation.</li> </ul>
1.3	<ul style="list-style-type: none"> <li>Implement the Environmental and Social Management Plan (ESMP) for construction and operation to implement management and mitigation measures specified within this Volume of the ESIA.</li> <li>Update ESMP with any additional mitigation as required as the project progresses.</li> <li>Ensure that the EPC(M) contractor develops a Construction Environmental Management Plan (CEMP) and associated sub plans and monitors compliance of construction sub-contractors.</li> </ul>	<ul style="list-style-type: none"> <li>Ensure environmental and social management measures prescribed within the ESIA are implemented.</li> </ul>	<ul style="list-style-type: none"> <li>IFC PS1</li> <li>EBRD PR 1.</li> <li>Best Practice.</li> </ul>	<ul style="list-style-type: none"> <li>KPI with assistance from external consultants / Lenders.</li> </ul>	<ul style="list-style-type: none"> <li>CEMP produced</li> </ul>	<ul style="list-style-type: none"> <li>Prior to main construction activities</li> </ul>
1.4	<ul style="list-style-type: none"> <li>Develop an Environmental, Health, and Management System (EHMS) in line with ISO requirements i.e. ISO 9001 and ISO14001 and OHSAS18001</li> </ul>	<ul style="list-style-type: none"> <li>Promote environmental, health and safety culture within the organisation and meet international best practice.</li> <li>Documentation of roles and responsibilities within the KPI</li> </ul>	<ul style="list-style-type: none"> <li>IFC PS1</li> <li>EBRD PR 1.</li> <li>Best Practice.</li> </ul>	<ul style="list-style-type: none"> <li>KPI</li> </ul>	<ul style="list-style-type: none"> <li>Evidence of ISO accreditation</li> </ul>	<ul style="list-style-type: none"> <li>During project lifetime</li> </ul>
1.5	<ul style="list-style-type: none"> <li>Include contractual clauses within the EPC(M) contractor contract agreement that contractually requires compliance with international requirements and with the requirements of the ESMP/ESAP.</li> </ul>	<ul style="list-style-type: none"> <li>Ensure a unified adoption of international environmental, health, safety and social standards by</li> </ul>	<ul style="list-style-type: none"> <li>IFC PS'</li> <li>EBRD's PRs</li> <li>Best Practice</li> </ul>	<ul style="list-style-type: none"> <li>KPI</li> </ul>	<ul style="list-style-type: none"> <li>Evidence of international environmental, health, safety and social contractual obligations within</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing from commencement of construction</li> </ul>

Item No.	Task / Measure / Corrective Action	Purpose of Action	Source of Requirement	Responsibility	Deliverable (Report/Measure of success)	Deadline
		all parties involved in the Project.			EPC(M) contractor contract	
1.6	<ul style="list-style-type: none"> <li>Conduct quarterly inspections of construction site and EPC(M) contractor occupational health and safety (OHS) performance.</li> <li>Report on performance to Lenders every three months during first year of construction. Report frequency to be increased in the event of significant issues / incidents on site.</li> </ul>	<ul style="list-style-type: none"> <li>Ensure EPC(M) contractor adoption of international requirements for OHS</li> </ul>	<ul style="list-style-type: none"> <li>IFC PS1</li> <li>EBRD PR1</li> </ul>	<ul style="list-style-type: none"> <li>KPI</li> </ul>	<ul style="list-style-type: none"> <li>Throughout construction</li> </ul>	<ul style="list-style-type: none"> <li>Report available and submitted to Lenders as part of annual report.</li> </ul>
1.7	<ul style="list-style-type: none"> <li>As part of proposed environmental, health and safety system and as part of the CEMP and maintain a record of incidents to maintain records for annual monitoring report,</li> </ul>	<ul style="list-style-type: none"> <li>Monitor the number incidents and keep records to submit with Lenders reports</li> </ul>	<ul style="list-style-type: none"> <li>IFC PS1</li> <li>EBRD PR1</li> </ul>	<ul style="list-style-type: none"> <li>KPI</li> <li>EPC(M) contractor</li> </ul>	<ul style="list-style-type: none"> <li>Monthly project EHS compliance reports.</li> </ul>	<ul style="list-style-type: none"> <li>Prior/During the construction period. It is the legal obligation of the EPC(M) contractor to report incidents. Any incidences are noted in the weekly report.</li> </ul>
<b>IFC PS2: Labour Working Conditions / EBRD PR2: Labour and Working Conditions /</b>						
2.1	<ul style="list-style-type: none"> <li>Integrate and maintain mitigation measures relating to labour and working conditions identified in the ESMP into the CEMP.</li> </ul>	<ul style="list-style-type: none"> <li>Prevent employee or contractor disputes from grievances</li> </ul>	<ul style="list-style-type: none"> <li>IFC PS2</li> <li>EBRD PR2</li> </ul>	<ul style="list-style-type: none"> <li>KPI</li> <li>EPC(M) contractor</li> </ul>	<ul style="list-style-type: none"> <li>Development of CEMP.</li> </ul>	<ul style="list-style-type: none"> <li>Prior to major construction activities being developed</li> </ul>
2.2	<ul style="list-style-type: none"> <li>If required upgrade existing workers accommodation facilities or develop new workers accommodation in line with IFC/EBRD guidance and in line with National requirements</li> </ul>	<ul style="list-style-type: none"> <li>Provide appropriate standards of accommodation for workforce</li> </ul>	<ul style="list-style-type: none"> <li>IFC PS2</li> <li>EBRD PR2</li> </ul>	<ul style="list-style-type: none"> <li>KPI</li> <li>EPC(M) contractor</li> </ul>	<ul style="list-style-type: none"> <li>Development of workers accommodation plan</li> </ul>	<ul style="list-style-type: none"> <li>Prior to construction</li> </ul>
<b>IFC PS3: Resource Efficiency and Pollution Prevention / EBRD PR3: Pollution Prevention and Abatement /</b>						
3.1	<ul style="list-style-type: none"> <li>Integrate and maintain mitigation measures associated with resource efficiency and pollution prevention identified in the ESMP into the CEMP.</li> </ul>	<ul style="list-style-type: none"> <li>Promote environmental, health and safety culture within the organisation and meet international best practice.</li> </ul>	<ul style="list-style-type: none"> <li>IFC PS 3</li> <li>EBRD PR 3</li> <li>Best Practice.</li> </ul>	<ul style="list-style-type: none"> <li>KPI</li> <li>EPC(M) contractor</li> </ul>	<ul style="list-style-type: none"> <li>Development of CEMP.</li> </ul>	<ul style="list-style-type: none"> <li>Prior to construction.</li> </ul>
<b>IFC PS4: Community Health, Safety and Security / EBRD PR4: Community Health, Safety and Security /</b>						
4.1	<ul style="list-style-type: none"> <li>Implement safe practices through the CEMP during construction to minimise potential impacts to local communities during construction as specified within the ESMP.</li> </ul>	<ul style="list-style-type: none"> <li>Promote good practice during construction and to protect the health and safety of local communities.</li> </ul>	<ul style="list-style-type: none"> <li>IFC PS 4</li> <li>EBRD PR 4</li> <li>Best Practice.</li> <li>Kazakhstan</li> </ul>	<ul style="list-style-type: none"> <li>KPI</li> <li>EPC(M) contractor</li> </ul>	<ul style="list-style-type: none"> <li>Development of CEMP.</li> </ul>	<ul style="list-style-type: none"> <li>Throughout construction.</li> </ul>

Item No.	Task / Measure / Corrective Action	Purpose of Action	Source of Requirement	Responsibility	Deliverable (Report/Measure of success)	Deadline
Law						
<b>IFC PS5: Land Acquisition and Involuntary Resettlement / EBRD PR5: Land Acquisition, Involuntary Resettlement and Economic Displacement/</b>						
<i>None Required</i>						
<b>IFC PS6: Biodiversity Conservation and Sustainable Management of Living Material / EBRD PR6: Biodiversity Conservation and Sustainable Management of Living Natural Resources</b>						
6.1	<ul style="list-style-type: none"> <li>Integrate and maintain mitigation measures relating to biodiversity and sustainable management of living materials identified in the ESMP into the CEMP.</li> </ul>	<ul style="list-style-type: none"> <li>Minimise habitat loss and meet international best practice.</li> </ul>	<ul style="list-style-type: none"> <li>IFC PS6</li> <li>EBRD PR6</li> <li>Best Practice.</li> </ul>	<ul style="list-style-type: none"> <li>KPI</li> <li>EPC(M) contractor</li> </ul>	<ul style="list-style-type: none"> <li>Development of CEMP.</li> </ul>	<ul style="list-style-type: none"> <li>during construction.</li> </ul>
<b>IFC PS7: Indigenous Peoples / EBRD PR7: Indigenous Peoples /</b>						
<i>Not Applicable</i>						
<b>IFC PS8: Cultural Heritage / EBRD PR8: Cultural Heritage /</b>						
8.1	<ul style="list-style-type: none"> <li>Develop and implement a Chance Find Procedure as part of the CEMP as outlined identified in the ESMP into the CEMP.</li> </ul>	<ul style="list-style-type: none"> <li>Minimise potential loss of cultural Heritage meet international best practice.</li> </ul>	<ul style="list-style-type: none"> <li>v IFC PS8.</li> <li>EBRD PR8</li> <li>Best Practice.</li> </ul>	<ul style="list-style-type: none"> <li>KPI</li> <li>EPC(M) contractor</li> </ul>	<ul style="list-style-type: none"> <li>Development of CEMP.</li> </ul>	<ul style="list-style-type: none"> <li>Prior to construction.</li> </ul>
<b>EBRD PR 9: Financial Intermediaries</b>						
<i>Not Applicable</i>						
<b>EBRD PR10 Information Disclosure and Stakeholder Engagement</b>						
10.1	<ul style="list-style-type: none"> <li>Update regularly and implement the Stakeholder Engagement Plan, including project performance grievance mechanism.</li> <li>As part of the SEP, maintain a register of external communications including minutes of meetings held with stakeholders.</li> <li>Annual reporting of Greenhouse Gas Emissions</li> </ul>	<ul style="list-style-type: none"> <li>To maintain good stakeholder engagement and framework for sharing information with the public.</li> </ul>	<ul style="list-style-type: none"> <li>EBRD PR10</li> <li>Equator Principles</li> </ul>	<ul style="list-style-type: none"> <li>KPI</li> </ul>	<ul style="list-style-type: none"> <li>Report to Lenders on consultation activities, including notices given</li> <li>Report to Lenders on all grievances received and how addressed/ resolved</li> </ul>	<ul style="list-style-type: none"> <li>Throughout construction and operation.</li> </ul>

