Appendix D Construction Phase ESMMP

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1 INTRODUCTION

1.1 Overview

An environmental and social impact assessment (ESIA) has been undertaken to assess and report the environmental and social impacts associated with the proposed South Caucasus Pipeline Company Expansion (SCPX) Project. The ESIA has examined negative and positive, biophysical and socio-economic effects of the components of the proposed SCPX Project.

During the course of the ESIA process, design decisions have been made taking account of the need to avoid, minimise and reduce negative environmental and social impacts. Where potential adverse impacts have been identified, the ESIA has examined the extent to which these impacts would be mitigated through the adoption of good practice working methods.

This Environmental and Social Management and Monitoring Plan (ESMMP), including the Management Plans provided in the sections below, describes the environmental and social management measures to be adopted and implemented to satisfy the ESIA commitments associated with the Project.

1.2 Scope and Purpose

The ESMMP is not a legally binding document. While it draws on and replicates commitments made in the main body of the ESIA, it does not make and should not be read as making any new, amended or additional commitments by the Project. The definitive source for all commitments made in the ESIA is the Commitments Register. The ESMMP is a tool designed to help implement those commitments and is considered a "live" document that is likely to evolve during the life time of the SCPX Project to encompass the construction and commissioning phase consistent with a continual improvement approach (as defined by ISO 14001). The plans will be updated to include regulator and stakeholder feedback received during the disclosure of the draft ESIA and will be updated whenever necessary as the Project proceeds. The ESMMP provides details of how the Project proposes to implement and monitor the commitments made in the ESIA.

These Management Plans provide an essential link between the legally binding commitments made in the ESIA for the SCPX Project and their implementation, by allocating those commitments to Management Plans and describing how adherence to the plans will be monitored and audited. Notwithstanding, COMPANY intends to require CONTRACTOR to comply with the requirements set forth in the SCPX Project ESIA, of which this ESMMP is an integral part, as approved by the Government of Azerbaijan. The Management Plans prescribe the approach that the Project, and therefore COMPANY and/or CONTRACTOR plan to use to avoid or mitigate the identified environmental and social impacts, maximise social benefits, help deliver regulatory compliance and carry the ESIA commitments into effect.

Consistent with the non-binding nature of this document, references below to respective accountabilities, in particular as between COMPANY and CONTRACTOR, indicate no more than COMPANY’s present plan for how it intends to allocate those accountabilities. Statements that a party “shall” or “is required to” take an action or be responsible for a particular matter are to be understood as no more than describing the COMPANY’s present intent in the relevant respect, subject to the considerations described above.

Each commitment in the ESIA has been allocated a reference number to facilitate transparency and cross-referencing. They are included in this ESMMP and its Management Plans; general commitments (i.e. those that are applicable at many locations) are presented in tabulated format as illustrated below:

24-02	A strict Project speed limit of 30km/hr will be enforced for project vehicles using unmade tracks and the ROW.

Commitments made within the Project design that are relevant to construction are prefixed with the letter D. Commitments that are specific to a limited number of locations have been allocated a reference number prefixed with an "X" and are included in tabular format with details of the nearest SCPX kilometre point (KP). An example is as follows:

X8-04	At locations where the proposed SCPX route passes in close proximity to dwellings (KP62.2, BVR A06, KP104-KP108, KP116-KP120, KP121-KP125, KP287-KP289) and at camps and pipe storage yards close to dwellings, the Project will undertake monitoring for dust generation and damping down as necessary.

Maps showing the referenced features are provided in the SCPX ESIA.

The objectives of the ESMMP, including its Management Plans are to:

- Help COMPANY to achieve its intended environmental and social management outcomes and mitigate the SCPX Project's identified environmental and social impacts to the levels predicted in the ESIA
- Describe COMPANY requirements that CONTRACTOR shall meet to ensure that the commitments made in the ESIA for the SCPX Project are fully implemented
- Provide a mechanism for the COMPANY to achieve compliance with legal obligations and demonstrate conformance with COMPANY's environmental and social policies
- Provide a framework for the appointed CONTRACTOR to develop Environmental and Social Implementation Plans as required by the CONTRACT.

CONTRACTOR is required to develop Environmental and Social Implementation Plans that address the commitments and requirements in this ESMMP, including those in the constituent Management Plans (Sections 7–19). In the Implementation Plans, CONTRACTOR shall propose methods of work that will implement COMPANY's commitments taking account of local conditions. This flexible approach recognises and accommodates the preferences, experience and existing systems/processes of individual CONTRACTORs. The Environmental and Social Implementation Plans shall be approved by COMPANY.

COMPANY will also implement some of the commitments. The responsibilities of the COMPANY and CONTRACTOR are defined in each plan. Refer to Section 5 for a breakdown of primary and secondary CONTRACTOR responsibilities. CONTRACTOR shall assume responsibilities for the implementation of all commitments within this plan unless a commitment is specifically identified as a COMPANY responsibility.

Section 20 of this ESMMP describes the environmental and social monitoring which will be undertaken and the performance criteria (Key Performance Indicators) to be met by CONTRACTOR. During the Project, COMPANY will audit CONTRACTOR's work against the requirements expressed in COMPANY's Management Plans (this ESMMP) and CONTRACTOR's Implementation Plans to assure the prescribed measures are implemented effectively. Section 21 sets out the procedures that will be adopted to verify that high levels of environmental and social performance are maintained.

It is necessary for CONTRACTOR to read and address the whole series of Management Plans taking account of links between them (see Section 6) as well as to the general requirements set forth within other sections of this ESMMP. CONTRACTOR shall note that where the word "Project" is used in any of the commitments or this ESMMP, this refers to the COMPANY unless the commitment has been assigned to the CONTRACTOR.

1.3 Environmental and Social Management System Framework

The SCPX Project will have an environmental and social management system (ESMS) that is consistent with the plan–do–check–act cycle as depicted in Figure 1-1 below.

CONTRACTOR shall establish an environmental and social management system to meet the commitment below:

1-13	The construction contractor will have a documented and operational ESMS aligned with the requirements of ISO 14001 Environmental Management Systems.

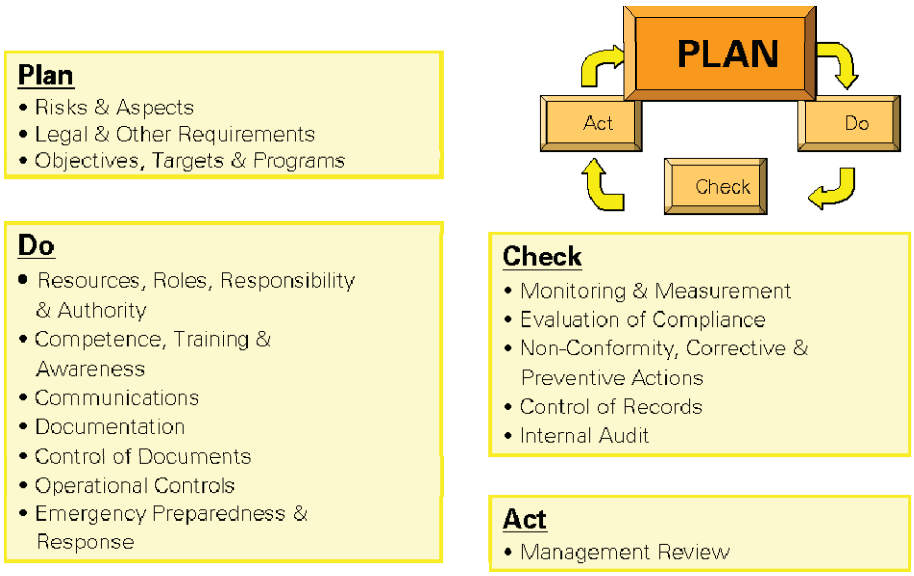


Figure 1-1: ESMS Cycle

2 ABBREVIATIONS AND DEFINITIONS

Pipeline locations are referred to by SCPX KP Number 0–389 for the new pipeline loop.	
Commitments from the ESIA are numbered as per the Commitments Register	
Location-specific commitments from the Commitment Register are numbered with an X prefix, e.g. X-150	
shall	used to indicate that a provision is mandatory
should	used to indicate that a provision is not mandatory, but is recommended as good practice

Abbreviation	Definition
ADR	the European Agreement concerning the International Carriage of Dangerous Goods by Road
ATS	action tracking system
BPEO	best practicable environmental option
CITES	Convention on International Trade in Endangered Species
CLO	community liaison officer
COSHH	control of substances hazardous to health
CWAA	central waste accumulation area
EHS	environmental, health and safety
EPMS	Engineering and Project Management Services
ESIA	environmental and social impact assessment
ESMMP	Environmental and Social Management and Monitoring Plan
ESMS	environmental and social management system
HDPE	high-density polyethylene
HGA	Host Government Agreement
HSE	health, safety and environment
HSSE	health, safety, security and environment
IPLOCA	International Pipeline and Offshore Contractors Association
ISO	International Standards Organisation
KPI	key performance indicator
LRTIP	Local Recruitment and Training Implementation Plan
MSDS	materials safety data sheet
RDB	red data book
ROW	right of way, i.e. the area within which the pipeline installation takes place, including topsoil and subsoil storage
STD	sexually transmitted disease

Abbreviation	Definition
STP	sewage treatment plant
WCP	waste collection point - an area established close to the work fronts to segregate and collect waste for transfer to the WSA
SCP Co.	South Caucasus Pipeline Company
SCPX	South Caucasus Pipeline Expansion
WCP	Waste Collection Point - an area established close to the work fronts to segregate and collect waste for transfer to the WSA
WPRC	waste processing and recycling centre
WSA	waste storage area - an area designed and developed to accumulate, store, segregate, treat and transfer waste
WTN	waste transfer note

Term	Definition
additional land	land outside the approved Project working areas and other areas occupied by the Project for temporary construction support or permanent facilities
agricultural area	area used for growing crops commercially (including areas temporarily out of use); excludes land used exclusively for grazing
biorestoration	the restoration of flora and fauna and the establishment of vegetation cover (post seeding) to return the vegetation cover and species diversity to meet the Project long-term targets
carcinogenic	substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence
COMPANY	the South Caucasus Pipeline Company and as defined in Section 1 of the CONTRACT, Conditions of Contract
CONTRACTOR	all construction CONTRACTOR's responsible for pipeline installation, early works and facility construction, special crossings and access road construction, except where one of these parties is specifically identified and as defined in Section 1 of the CONTRACT, Conditions of Contract
cradle to grave	the principle that waste management responsibility extends from the point of generation, or cradle, to its final destination, or grave
drilling mud/drilling waste	fluids used and wastes generated during drilling and tunnelling
driver	includes drivers of passenger vehicles, goods vehicles and tracked or wheeled plant and machinery
due diligence survey	a survey conducted to identify pre-existing liabilities, e.g. soil contamination, of a site
duty of care	the principle that states a waste producer has a duty to ensure that a waste is properly managed even after that waste has been transferred to a third party
ECOLOGICAL MANAGEMENT CONTRACTOR	a specialist contractor appointed by COMPANY to address pre-construction ecological surveys, species translocation, biorestoration and provide technical expertise on seeding
environmental and social assessment	an internal assessment (following the ESIA methodology) to identify the potential environmental and social impacts and proposed mitigation measures of a proposal. The scope and scale of the assessment is appropriate to the nature of the proposal and the range and magnitude of potential impacts identified. The results of the assessment will be made available to the regulator on request
explosive	substances and preparations which may explode under the effect of flame or

Term	Definition
	which are more sensitive to shocks or friction than dinitrobenzene
facilities	pigging station
flammable	liquid substances and preparations having a flash point equal to or greater than 21ºC and less than or equal to 55ºC
harmful	substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks
highly flammable	liquid substances and preparations having a flash point below 21ºC (including extremely flammable liquids); substances and preparations which may become hot and finally catch fire in contact with air at ambient temperatures without any application of energy; solid substances and preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition; gaseous substances and preparations which are flammable in air at normal pressure; and substances and preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities
infectious	substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in man or other living organisms
irritant	non-corrosive substances and preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation
IUCN	the International Union for Conservation of Nature (IUCN). The IUCN Red List of Threatened Species (also known as the IUCN Red List or Red Data List), founded in 1963, is the world's most comprehensive inventory of the global conservation status of biological species. The IUCN Red List assesses the extinction risk of species.
leachate	liquid product of leaching process which normally drains from landfills
mutagenic	substances and preparations which, if they are inhaled or ingested, or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence; substances and preparations which release toxic or very toxic gases in contact with water, air or an acid; substances and preparations capable by any means after disposal of yielding another substance, such as a leachate which possesses any of the characteristics listed above
oxidising	substances and preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances
Project	Project shall mean COMPANY in the context of commitment responsibility
project ecologist	a competent ecologist appointed by the Ecological Management Contractor to supervise and implement ecological surveys and implementation of mitigation measures
protected area	a protected area designated under the Law of the Azerbaijan Republic on Protection of the Environment
protected species	A species designated by the IUCN vulnerable, endangered or critically endangered, species listed by CITES and species included into the Red Data Book of the Azerbaijan Republic or into the list of specially protected animal species
purpose built batching plant	batching plant facilities that are CONTRACTOR or subcontractor established for SCPX
Red Data Book	the IUCN maintains a global list of threatened species, published as the Red Data Book. Red Data Book species are classified into different categories of perceived risk. The Azerbaijan Red Data Book deals with a specific group of animals or plants (for instance, reptiles, insects or mosses).

Term	Definition
reinstatement	the process of restoring the area to its prior state after pipeline laying (includes installation of erosion control measures, replacement of topsoil, topography, fences, etc. and preliminary seeding, to all disturbed areas associated with the construction of the pipeline or pipeline facilities after their installation) *Note the reinstatement of vegetative cover and species diversity beyond the CONTRACT warranty period (2 years) is not included in this definition (see biorestoration)*
seeding	initial seeding required to obtain Erosion Class 3 or better, restore vegetative cover and return areas to a condition which is visually similar to the surrounding area during the CONTRACT WARRANY Period
sensitive/priority area	A Project-defined term that refers to areas along the right-of-way which have been raised to a higher level of environmental significance including due to the presence of sensitive vegetation and/or fauna (including Red List; IUCN Vulnerable; Caucasian Endemic Species and CITES species). This is a term that applies specifically to the SCPX Project and does not correspond to any national or international designation
subsoil	the layer or layers of soil below the topsoil which are not fertile and normally, but not necessarily, of a different texture and/or colour to the topsoil
teratogenic	substances and preparations which, if they are inhaled or ingested, or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence
third party	private individual, enterprise or state organisation, i.e. any person or organisation which is not the COMPANY or CONTRACTOR
third-party facility	a facility owned and operated by a third-party entity
third-party land	land outside the ROW and other areas occupied by the Project for temporary construction support or permanent facilities
topsoil	topsoil is the top layer of soil on the surface which is suitable for sustaining agriculture or natural vegetation growth
toxic	substances and preparations (including very toxic substances and preparations) which, if they are inhaled or ingested, or if they penetrate the skin, may involve serious, acute or chronic health risks or even death
vehicle	Includes passenger vehicles, goods vehicles and tracked or wheeled plant and machinery
warranty period	refer to CONTRACT definition
Waste	materials produced during operational activities which are of no use or value to the process that generated them
waste generator(s)	all personnel, plants and processes comprising the SCPX Project (including COMPANY, CONTRACTOR and subcontractors)
waste minimisation	a management process through which an increased efficiency in the use of ingredients and consumable materials is achieved, resulting in a reduction in the amounts of waste generated. This also includes the efficient storage and handling of materials to prevent loss through spillage and leakage.

3 POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

COMPANY intends that the SCPX Project will be managed in accordance with:

- The applicable requirements of the SCP Azerbaijan host government agreement (HGA)
- The commitments made in the SCPX Project ESIA and associated documents
- COMPANY's corporate policies.

3.1 HGA Standards and Practices

The HGA between the Government of Azerbaijan and the SCP Participants governs any future expansion to the SCP system and thus establishes the legal obligations for the SCPX Project. The provisions of the HGA override any inconsistent provisions in national legislation, with the exception of the provisions in the '*Constitution of the Azerbaijan Republic*'.

The HGA sets out the obligation for the Project participants to implement certain standards when designing and operating the pipelines. In summary the construction and operation of the SCPX Project in Azerbaijan is required to conform with:

Environmental standards

- *use best endeavours to minimise potential disturbances to the environment, giving priority in the order of life, the environment and property*
- *in accordance with the standards and practices generally prevailing in the international Natural Gas pipeline industry*.

Social standards

- *Using best endeavours to minimise potential disturbances to surrounding communities and the property of the inhabitants*
- *completing a social impact assessment in general conformance with World Bank standards (excluding the prescribed time periods for review and consultation).*

3.2 COMPANY's Corporate Requirements

The Company's document, "What We Stand For[1]" states the COMPANY's overarching principles:

> "*BP wants to be recognised as a great company – competitively successful and a force for progress. We have a fundamental belief that we can make a difference in the world. We help the world meet its growing need for heat, light and mobility. We strive to do that by producing energy that is affordable, secure and doesn't damage the environment. BP is progressive, responsible, innovative and performance driven*."

[1] What we Stand For available at http://www.bp.com/liveassets/bp_internet/globalbp/STAGING/global_assets/downloads/W/what_we_stand_for.pdf

These values are fulfilled throughout Company's business through the application of various policies and requirements, and reflected in the measures set out in the Management Plans.

3.2.1 Company Code of Conduct

Company corporate policy, specified in the Company Code of Conduct (2012), summarises the standards for the way in which Company behaves and are the foundation on which its business is built and carried out.

The Code of Conduct applies to all Company activities worldwide and focuses on five areas:

- **Operating safely, responsibly and reliably** – including provisions regarding protection of the natural environment, the safety of communities in which Company operates, and the health, safety and security of Company's people
- **Our people** – encompassing fair treatment and equal opportunities, providing guidance for dealing with cases of harassment or abuse and for protecting privacy and employee confidentiality
- **Our business partners** – containing detailed guidance on giving and receiving gifts and entertainment, conflicts of interest, competition, trade restrictions, money laundering and working with suppliers
- **The governments and communities we work with** – covering such areas as bribery, dealing with governments, community engagement, external communications and political activity
- **Our assets and financial integrity** – providing for accurate and complete records and reporting, protecting company property, intellectual property, insider trading and digital systems.

3.2.2 HSSE Policy Commitment

Company's health, safety, security and environmental performance policy is provided in Appendix A.

3.2.3 Group Defined Practice and Group Recommended Practice

Company has a number of Group defined practices (GDP) that establish requirements and standards within Company and a set of Group recommended practices (GRP) that provide further guidance and recommendations.

The following GDP and GRP are of particular relevance to the Project and will be implemented as relevant:

- Environmental and Social Requirements for New Access Projects, Major Projects, International Protected Area Projects and Acquisition Negotiations GDP ("Environmental and Social GDP")
- GRP-3.6-0001 Environmental and Social Recommendations for Projects ("Environmental and Social GRP") which supports the GDP 3.6-0001 described above and provides recommendations on the management of environmental and social impacts from projects
- GRP 7.1-0001 Legal and Regulatory HSSE Compliance which sets out recommendations on how to develop, implement and maintain effective and fit for purpose (risk-based) HSSE legal and regulatory compliance management processes.

The environmental and social GDP and GRP have been developed having regard to international standards and guidelines that represent good practice in the energy industry, including pipelines. SCPX, therefore, has considered them during preparation of the ESIA and when defining mitigation measures and practices.

3.3 Project Environmental Standards

In order to comply with the requirements of the HGA, the project has considered the following sources of information to define the project Environmental Standards:

- International Finance Corporation (IFC)[2] Performance Standards and Environmental, Health and Safety (EHS) Guidelines
- International Industry Standards and Practices including World Health Organisation (WHO) guidelines, guidance issued by oil and gas industry associations, and general industry practice
- Standards and practices in the UK and EU.

Standards applicable to the Project are detailed in Appendix B.

3.4 Permits

Permits required for the SCPX Project are listed in Appendix C; relevant to Environmental and Social Management; however, this is not an exhaustive list as permitting requirements may change. CONTRACTOR shall be responsible for identifying and obtaining all necessary permits for activities within their scope of work. CONTRACTOR's indicative responsibilities for acquiring permits are described in Appendix C. CONTRACTOR shall develop and implement a Regulatory Compliance Plan that shall include a process for identifying and maintaining a list of applicable regulations, permits, codes and work place standards and practices.

CONTRACTOR shall submit data as necessary to the regulator as per the terms and conditions of any licences or consents that they hold. CONTRACTOR shall maintain copies of all permits and authorisations in English and Azerbaijani.

[2] The IFC is the private lending arm of the World Bank Group.

4 GUIDANCE DOCUMENTS

To define the ESIA mitigation measures and management plan requirements, ensuring consistency with the above HGA requirements, the following sources of guidance have been reviewed by the SCPX Project as guidance on good international natural gas industry standards and practices and to demonstrate that "best endeavours" have been made. They have been considered by COMPANY during preparation of the ESIA and this ESMMP and applicable sections implemented.

- IFC Policy on environmental and social sustainability, January 2012
- International Finance Corporation's IFC Performance Standards, 2007 and their associated Guidelines
- IFC/World Bank: '*General EHS Guidelines'* and '*EHS Guidelines for Onshore Oil and Gas Developments*', 2007
- International Pipeline and Offshore Contractors Association (IPLOCA): '*Onshore Pipelines – The Road to Success*' (2nd edition - 2011), Section 6: '*Best Practice in Planning and Construction Techniques*'
- World Health Organisation Guidelines (as referenced in the Pollution Prevention Plan)
- Standards and practices in the EU and UK (as referenced in the Waste Management Plan and Pollution Prevention Plan)
- General industry practice.

Examples of good international practice are provided in each of the Management Plans. These documents are indicative of the standards and practices that COMPANY expects CONTRACTOR to implement. The intent of this guidance and applicable sections has been used to formulate the content of this Management Plan.

There is significant overlap between the recommendations in each of the above reference documents. Unless otherwise stated, the wording used in the Guidance section of each Management Plan is a synthesis of recommendations rather than a direct quote from any one source.

5 ROLES AND RESPONSIBILITIES

5.1 Company

COMPANY has the ultimate responsibility for management of environmental and social impacts and the development of mechanisms for dealing with environmental and social problems.

COMPANY shall be responsible for:

- Development of the ESMMP and its Management Plans
- Communicating the contents and requirements of the ESMMP and Management Plans to CONTRACTOR to assist with the development of its Implementation Plans before construction starts
- Review and approval of CONTRACTOR's Implementation Plans
- Updating the ESMMP following disclosure and approval of the ESIA and communicating any additional commitments to CONTRACTOR
- Monitoring that Project personnel engaged on the Project receive appropriate environmental and social awareness training
- Implementation of a programme of planned and unplanned, documented environmental inspection, monitoring and reporting to verify the implementation of its commitments and auditing CONTRACTOR performance with respect to the requirements of the Management Plans and Implementation Plans
- Tracking the KPI data reported by CONTRACTOR and reporting performance to the authorities (as required by the HGA or permitting requirements) and within COMPANY
- Identifying non-conformance with the Management and Implementation Plans and determining the appropriate corrective action through its non-conformance procedures
- Stopping work in the event of non-conformance that presents an immediate threat to people, environment and property
- Implementation of a programme for follow-up and analysis of all environmental or social incidents or accidents
- Developing and maintaining a Commitments Register for the Project that lists the commitments generated during the Project's comprehensive ESIA process, which will be updated as a live document during the course of the Project. The Commitments Register will also record the Management Plan(s) that incorporates each commitment and responsibility for implementation
- Maintaining a Public Consultation and Disclosure Plan (PCDP) for the Project to ensure effective management of consultations with third parties during the design and construction stages of the Project. The PCDP will be updated as necessary to reflect current status and planned activities.

To carry out the above tasks, COMPANY shall appoint the following personnel to work in conjunction with CONTRACTOR's management team to ensure that environmental and social concerns are adequately addressed:

- **Environmental and social manager:** responsible for ensuring environmental and social commitments are implemented effectively
- **Environmental and social adviser(s):** responsible for monitoring compliance with and performance against the ESMMP; raising and tracking corrective actions as necessary; compiling appropriate documentation as necessary; and providing advice and assistance to construction personnel on environmental and social issues

- **Community liaison officer(s):** responsible for monitoring construction on site and ensuring CONTRACTOR and subcontractors comply with the ESMMP; raising and tracking corrective actions as necessary; compiling appropriate documentation as necessary; and providing advice and assistance to construction personnel on social issues
- **Cultural heritage officer(s):** responsible for monitoring construction on site and ensuring CONTRACTOR and subcontractors comply with ESIA cultural heritage commitments; raising and tracking corrective actions as necessary; compiling appropriate documentation as necessary; and providing advice and assistance to construction personnel on heritage issues.

In addition, COMPANY shall contract directly with the ECOLOGICAL MANAGEMENT CONTRACTOR and CULTURAL HERITAGE CONTRACTOR.

5.2 Contractor

CONTRACTOR shall be responsible for:

- Implementation of and adherence to all requirements included in this ESMMP and its Management Plans
- Implementation of any additional commitments that have been made during public disclosure of the Project ESIA document or other public commitments as advised by the COMPANY
- Securing all relevant permits and licences (as per Appendix C)
- Monitoring the performance of its activities and those of its subcontractors with regard to implementation of, and adherence to, all relevant mitigation measures outlined in the ESMMP
- Proposing a programme of regular environmental self-inspections and audit, and a programme of community liaison and feedback gathering, and implement an action tracking system to record the findings and track progress on actions taken to address them
- Translating important project information including but not limited to Material data sheets, signage, labelling, contracts and risk assessment requirements into the local language
- The requirements detailed in Sections 5.2.1—5.2.7.

In addition, CONTRACTOR shall provide an option for contracting directly with a specialist subcontractor for seeding and matting related to reinstatement.

5.2.1 CONTRACTOR's Implementation Plans

Within 60 days of CONTRACT award and at least 30 days in advance of mobilisation, CONTRACTOR shall develop an equivalent 'Implementation Plan' for each of the Management Plans in this ESMMP (as updated following disclosure and approval of the ESIA) for review by COMPANY.

CONTRACTOR's Implementation Plans shall:

- Follow the structure and content of the ESMMP
- Specify CONTRACTOR's organisational structure including the lines of responsibility for ensuring the implementation of generic and site-specific environmental mitigation measures
- Define the roles and responsibilities of CONTRACTOR's Project environmental and social management personnel
- Specify how the communication of the contents of Management Plan requirements will be relayed to the workforce
- Specify the environmental and social awareness training that it will provide to its personnel engaged on the Project and to its subcontractors' personnel

- Define how CONTRACTOR proposes to monitor its environmental performance and the KPIs specified in Section 20.4
- Define how CONTRACTOR proposes to inspect and audit its own work to ensure that the commitments made in its Implementation Plans are delivered effectively
- Meet all relevant policy and legislative requirements
- Explain the document control procedures that will be implemented for recording environmental and social information and reporting it to COMPANY.

5.2.2 Procedures and Method Statements

Before starting construction work, CONTRACTOR shall develop technical procedures and method statements as required by the CONTRACT; these shall be consistent with the requirements of this ESMMP and incorporate the relevant environmental and social mitigation measures. COMPANY shall review and approve CONTRACTOR'S Procedures and Method Statements. The method statements and procedures shall define the timing of implementation and the person responsible for ensuring implementation of the mitigation measures. All procedures and method statements shall be submitted according to the timescales detailed in the CONTRACT.

5.2.3 Management of Change

CONTRACTOR shall develop a Management of Change procedure that fulfils the following requirement:

39-04	Management of change procedures will include environmental and social assessment before any changes that may have detrimental effects on environmental or social receptors are adopted.

5.2.4 CONTRACTING Strategy

The contracting strategy is outlined in Table 5-1.

Table 5-1: Contracting Strategy for the SCPX Project

SCPX Construction	Pipeline Contractor (includes Facilities and Early Works Requirements)	
Project management	BP	
Front end engineering design	Incumbent EPMS contractor	
Detailed engineering		
Equipment and materials procurement	BP/EPMS and construction contractors	
Construction	International Pipeline contractor	
Reinstatement	Pipeline contractor/local contractor Ecological management contractor	
Tie-in	N/A	Specialised international contractor
Commissioning		BP
Waste management	Contractor is responsible to transfer waste from all their project sites (worksite) to their Waste Storage Area (WSA) where waste will be segregated, processed, packaged and stored. External to the worksites the CONTRACTOR shall transfer waste from the WSA to final BP approved disposal or storage location. CONTRACTOR to transfer all segregated and recyclable waste to BP approved recycling companies.	
Cultural heritage	Cultural heritage contractor	

5.2.5 *CONTRACTOR Organisation*

CONTRACTOR shall ensure that appropriately experienced and qualified personnel are employed. As a minimum, personnel should include:

Table 5-2: CONTRACTOR E&S Organisation

Position	PIPELINE CONTRACTOR*	HDD/ MICROTUNNEL CONTRACTOR	TIE IN CONTRACTOR*
Environmental & Social manager	1		
Community liaison officer	2**		
Environmental co-ordinators	2**		
Social co-ordinator	2**		
Environmental advisor	2**		
Environmental and social advisor		1 + 1	1
Waste adviser	2**		
Total	11	2	1
Note: COMPANY shall review and approve CONTRACTOR'S proposed organisational structure and personnel qualifications. Assumes Tie in Contractor will be under the control of the mainline pipeline contractor * Positions to be confirmed by COMPANY subject to final contracting strategy **Assume one per spread			

5.2.6 *Training*

CONTRACTOR shall provide to all its personnel and subcontractors engaged on the Project, an environmental and social training programme approved by COMPANY that communicates to them the contents of each Management Plan and ensures that all personnel are aware of their environmental and social responsibilities.

The environmental and social training programme shall aim to ensure that all site personnel fully understand:

- The environmental and social requirements of the Project and how they will be implemented and monitored on site
- The potential impacts of the Project, the mitigation measures that have been adopted to address those impacts and how and where to apply these measures
- The environmental sensitivities of the areas through which the pipeline and other facilities will be constructed
- The social sensitivities of communities located close to the pipeline route and facilities
- The procedures to be followed in the event of a non-compliance with the environmental or social requirements
- How to deal with unforeseen environmental incidents
- The requirements set forth in these plans.

CONTRACTOR shall ensure that all construction personnel attend regular site-specific 'tool-box' training sessions on environmental and social issues throughout the term of the CONTRACT.

CONTRACTOR shall keep auditable records of the training that has been provided to each person working on the Project.

The environmental and social training programme shall include an initial site induction for delivery to all site personnel before they carry out any work on site.

CONTRACTOR shall update the training package in accordance with changes made in scope/requirements, etc.

5.2.7 Reporting Environmental and Social Performance to COMPANY

All environmental and social incidents shall be reported to COMPANY immediately as per CONTRACTOR and COMPANY's incident reporting requirements.

CONTRACTOR's environmental and social manager shall attend weekly progress meetings with COMPANY.

CONTRACTOR shall compile and report weekly summary reports on activities carried out and of conformance with the environmental and social requirements stated in the Management Plans. The content and format of this report shall be agreed with COMPANY.

CONTRACTOR shall compile monthly reports on environmental and social performance containing data on KPIs (Section 20.4) and submit them to COMPANY. The content and format of such reports shall be agreed with COMPANY.

6 OVERVIEW OF THE MANAGEMENT PLANS

6.1 Management Plans

Whereas Sections 1–5 of this ESMMP present the generic approach to environmental and social management and the general environmental and social monitoring procedures to be established by CONTRACTOR, each of the Management Plans provided herein presents specific impact avoidance and mitigation measures relating to particular issues.

Each Management Plan contains:

- Introduction
- Plan-specific good practice guidance
- Plan-specific roles and responsibilities of COMPANY and of CONTRACTOR
- Specific impact avoidance and mitigation measures that are requirements reflecting good practice as well as binding commitments made in the Project's ESIA.

6.1.1 Environmental Management Plans

The following table is a guide to the key issues covered in the Environmental Management Plans and to whom the plans principally apply.

Table 6-1: List of Environmental Management Plans

ESMMP Section	Plan	Issues Covered	Primary Contractor	Secondary Contractor
7	Reinstatement Plan	• Top soil and sub-soil management • Erosion control during construction (e.g. at crossings, steep slopes, trench breakers) and after construction • Engineered reinstatement of ROW and watercourse crossings • Seeding and matting	Pipeline contractor Ecological management	Heritage Early works (pre-entry works)
8	Ecological Management Plan	• Ecological training • Location of protected species and sensitive/priority areas • Preconstruction ecological surveys • Habitat and species protection before and during construction (e.g. working width restriction, translocation, avoiding seasonal sensitivities, traffic restrictions, code of conduct, aquatic environment protection) • Biorestoration (e.g. re-vegetation, selection and procurement of seeds, seeding methods, seed collection) • Monitoring and reporting	Ecological management Pipeline contractor (spatial and seasonal constraints)	
9	Waste Management	• Waste management training • Identification and classification	Pipeline contractor	All

ESMMP Section	Plan	Issues Covered	Primary Contractor	Secondary Contractor
	Plan	of waste • Waste hierarchy and waste minimisation strategy (i.e. reduction at source, reuse, recycling, energy recovery, responsible disposal) • Waste handling (i.e. collection, segregation and containers, storage and treatment, transport and documentation, disposal,) • Monitoring and reporting		
10	Pollution Prevention Plan	• Pollution prevention training • Energy efficiency (vehicle and equipment selection and maintenance) • Emissions and dust management (i.e. vehicle, equipment and generator emissions, dust management) • Wastewater management (e.g. runoff, trench dewatering, hydrotest water disposal and use of chemicals in hydrotest water, vehicle and equipment washing) • Sewage treatment and disposal • Noise and vibration management • Oil and chemical management (i.e. storage, handling and spill prevention) • Treatment of contaminated soil • Management of hazardous liquid waste • Monitoring and reporting.	Pipeline contractor	All
11	Resource Management Plan	• Training (incl. energy efficiency and water use minimisation) • Aggregates management (estimation of requirement, identification of quarries and borrow pits, transportation, control of third parties) • Water management (water supply, hydrotest water abstraction).	Pipeline contractor	

6.1.2 Social Management Plans

The following table is a guide to the key issues covered in the Social Management Plans.

Table 6-2: List of Social Management Plans

ESMMP Section	Plan	Issues Covered	Primary Contractor	Secondary Contractor
12	Construction	• Consultation with local	Pipeline	

ESMMP Section	Plan	Issues Covered	Primary Contractor	Secondary Contractor
	Camp Management Plan	communities before construction camp is developed • Restriction of access to camp and use of its facilities • Training (incl. induction briefing on camp rules and awareness of local issues and sensitivities) • Camp rules (e.g. discipline and restrictions on alcohol, drugs; noisy activities and illegal activities, community liaison, ethnic tensions, market distortion and communicable diseases)		
13	Infrastructure and Services Management Plan	• Disruption to infrastructure (transport; electricity; irrigation) • Prevention and repair of community infrastructure damaged by Project activities • Management of disruption to communities and individuals	Pipeline	
14	Community Safety Plan	• Worker-community interaction (e.g. spread of communicable diseases) • Management of construction sites (e.g. access to ROW and open trench philosophy) • Traffic safety (e.g. control of traffic flows through villages)	Pipeline	Heritage Ecological management
15	Community Liaison Plan	• CLO requirements • Maintaining good relations with communities, landowners and land users (e.g. meetings, complaints management/grievance procedure) • Community access	Pipeline	Heritage Ecological management
16	Local Recruitment and Training Plan	• Recruitment for construction-phase workforce (e.g. local employment, recruitment procedure, transparency, definition of skilled and unskilled work roles) • Equal opportunities • Skills and HSE training	Pipeline	Heritage Ecological management
17	Procurement and Supply Plan	• Maximising local procurement of goods and services • Transparency of procurement process	Pipeline	Heritage Ecological Management

6.1.3 Other Management Plans

The following table is a guide to the key issues covered in the other Management Plans relevant to the management of environmental and social issues.

Table 6-3: List of Other Management Plans

ESMMP Section	Plan	Issues Covered	Primary Contractor	Secondary Contractor
18	Cultural Heritage Management Plan	• Protection and evaluation of existing and new finds during planning and construction of the Project • Chance Finds Procedure	Cultural Heritage contractor	Pipeline Contractor
19	Land Management Plan	• Contractor interaction with Company's Land Acquisition team (e.g. on requirement for additional land) • Land Acquisition Process • Minimising livelihood impacts (encroachment issues and penalties, borrow pit management, compensation, land exit and return of land for use)	Pipeline	Heritage Ecological management

6.1.4 Pre-Construction Surveys

A table of preconstruction surveys is provided in Appendix E. The table identifies the locations for the surveys where appropriate and also the subject of the survey to be undertaken (Topic).

7 REINSTATEMENT PLAN

7.1 Scope

This Reinstatement Management Plan is applicable to the reinstatement of all areas disturbed by construction work, including the ROW, facility construction sites and all other Project areas which are used to support construction, including (but not limited to) construction camps, pipe dumps, offloading areas, staging and maintenance areas, access roads/tracks and other transport facilities; waste transfer stations; material extraction and spoil disposal sites and other facilities (such as Project concrete batch plants) associated with the proposed SCPX Project.

This plan applies during the Project's construction phase to the end of the CONTRACT WARRANTY period.

The scope of this Management Plan relates specifically to the following reinstatement management issues:

- Overall reinstatement management
- Buildings
- Soils
- Seeding
- Biorestoration
- Surface water
- Landscape and social
- Special and sensitive/priority areas
- Site clean-up and disturbance of contaminated land
- Ecology
- Health and safety
- Materials and waste management.

7.2 HGA Standards and Practices

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered has been described below:

- IFC General EHS Guidelines: Construction and Decommissioning (April 30, 2007) specifically:

  Reducing or preventing erosion by:
  - Mulching to stabilise exposed areas
  - Re-vegetating areas promptly
  - Designing channels and ditches for post-construction flows
  - Lining steep channel and slopes (e.g. use jute matting).

  Reducing or preventing off-site sediment transport through use of settlement ponds, silt fences, and water treatment.

- IFC EHS Guidelines for Onshore Oil and Gas Development (April 30, 2007) including:
  - Clean-up and fully reinstate following construction activities (including appropriate re-vegetation using native plant species following construction activities) the pipeline right of- way and temporary sites such as workforce

accommodation camps, storage yards, access roads, helipads and construction workshops, to the pre-existing topography and drainage contours
    - Reinstate off-site aggregate extraction facilities including borrow pits and quarries
    - Implement repair and maintenance programs for reinstated sites
    - Install temporary and permanent erosion and sediment control measures, slope stabilisation measures
    - Providing adequate drainage systems to minimise and control infiltration.

- IPLOCA guidance (Vol.1, Appendix 6.3):
    - Careful reinstatement of pipeline working width, following the completion of construction activities, reduces the potential for pipeline projects to have a residual impact on habitats. Consideration of reinstatement should be undertaken early in the construction process, and may entail seed collection, tree felling, specialist machinery for topsoil stripping, the need to source local plant material, or the requirement for water to establish plants. Where possible pipelines are often routed through agricultural land whereby, although there is a temporary disturbance to habitat and farming land, typically due to the seasonality of the land use, complete reinstatement occurs very quickly. Reinstatement and post-construction monitoring should be undertaken for a minimum of two years to ascertain the success of environmental recovery. Monitoring is particularly important in those areas where habitat is of significance for conservation. Careful consideration should be given to ensuring that the ground conditions are conserved, by storing and replacing topsoil and soil layers in the correct order, and controlling decompaction and drainage
    - Act to reduce the risk of third-party damage by increasing awareness of the pipeline (e.g. using landowner liaison, overland markers, ROW monitoring and one call systems for third parties).

7.3 Roles and Responsibilities

The general roles and responsibilities with respect to overall implementation of this plan and specifically to environmental and social management and performance are described in Section 5. Specific roles and responsibilities related to engineering reinstatement are detailed below.

7.3.1 COMPANY Responsibilities

- Preliminary design of reinstatement
- Review and approval of method statements and procedures in accordance with the Reinstatement Specification
- Ongoing monitoring and maintenance of reinstatement works following final acceptance of CONTRACTOR reinstatement works
- Biorestoration (of ROW, facility construction sites and associated temporary facilities using an Ecological Management Contractor, as defined in the overarching Ecological Management plan and Site-specific Ecological Management Plans)
- Specification of seed mix for CONTRACTOR's erosion control seeding.

7.3.2 CONTRACTOR Responsibilities

- The Contractor will prepare a Reinstatement Implementation Plan including reinstatement of construction camp and pipe storage areas. Sensitive sections of the route where additional measures will be taken to ensure reinstatement are highlighted in the site-specific impacts table
- Implementation of all erosion control and reinstatement works in accordance with the requirements of this plan

- The provision of an experienced project manager supported by personnel who can demonstrate full knowledge of reinstatement and the contents of the Reinstatement Plan
- Development and implementation of site-specific method statements
- Matting and seeding on non-agricultural areas as agreed with COMPANY
- Performance of all required pre-entry surveys
- Monitoring and maintenance of reinstatement measures to achieve the reinstatement targets until the end of the CONTRACT WARRANTY period
- Engagement of an independent party to plan and execute due diligence surveys
- Reinstatement of all temporary areas
- Interface with COMPANY and the Ecological Management Contractor to facilitate successful biorestoration of the ROW and other temporary areas
- Consultation with local experts, specialist organisations and government authorities in order to ensure the reinstatement works are appropriate to the local, site-specific conditions
- Land entry and exit in accordance with the Land Management Plan.

7.4 Impact Avoidance and Mitigation

7.4.1 General Commitments

As per the commitments below CONTRACTOR shall implement all reinstatement measures as defined in this plan and the Reinstatement Specification and shall meet the following commitments.

4-09	Reinstatement will be undertaken as early as practicable and in accordance with the Reinstatement Specification.
4-14	In the case of an unplanned event, any damage will be reinstated and compensated where appropriate.

The CONTRACTOR shall prepare an erosion control and stabilisation plan and submit for COMPANY approval at least 30 days prior to abandoning the work site for any reason, e.g. winter.

7.4.2 Reinstatement Management

7.4.2.1 Pre-entry survey

CONTRACTOR shall carry out a pre-construction survey (as per the CONTRACT requirements and Land Management Plan) of all Project areas including permanent facilities land, borrow and spoil pits, quarries, proposed temporary areas, roads, batching plants, lay-down areas, spoil disposal sites, etc., and after final reinstatement against which the quality of reinstatement will be assessed. This shall be carried out simultaneously with social representatives (refer to Land Management Plan) from COMPANY and records agreed with landowners and occupiers.

For roads, local authority representatives should be involved in the pre-construction survey to witness road condition or be provided with the results as per the Infrastructure and Services Management Plan. The pre-construction survey shall be submitted to COMPANY for approval. The CONTRACTOR shall also undertake a pre-condition survey of buildings on or close to the ROW (pipeline and access roads), as described in the Infrastructure and Services Management Plan (Section 13).

The CONTRACTOR will prepare a Reinstatement Implementation Plan following the pre entry survey to include measures to reduce and control erosion and sediment run-off during construction and reinstatement, soil handling, storage and replacement, seeding and re-vegetation of the ROW. In addition, surveys should be planned to facilitate the development of site-specific reinstatement method statements for all special areas and sensitive areas (Section 7.4.7) temporary working areas including the construction camp, laydown areas

and pipe storage areas and others as referenced in this plan. CONTRACTOR shall develop, and submit to COMPANY for approval a detailed site-specific reinstatement method statement and plan for these areas.

A suite of erosion control measure 'tool boxes' was used on the BTC and SCP pipelines and has proved effective. These erosion toolboxes are methods of erosion control that define the detailed requirements at specific locations. The toolboxes are used to design the location specific erosion control measures that are included on the pipeline alignment sheets. The measures are summarised below and will be implemented along the new pipeline loop according to the erosion risk at each location.

7.4.2.2 Environmental due diligence

CONTRACTOR shall implement the following commitment:

17-14	A record will be made of the condition of access roads, construction camps, laydown areas and rail offloading areas and any special features on the RoW before construction to inform the reinstatement works

CONTRACTOR shall engage an independent and competent consultant to carry out environmental due diligence surveys at areas which are purpose built and dedicated to the Project and which have the potential to cause significant environmental impact (to be agreed with COMPANY), including concrete/asphalt batching plants, construction camps and lay-down areas. The independent consultant shall:

- Produce a survey plan for COMPANY approval that shall include as a minimum:
  - Photographic/video record of all areas
  - Assessment of soil productivity including nutrient content (depending on pre-construction land use)
  - Pre-construction clearance (vegetation cutting) surveys (if required) Ecological surveys
  - Phase 1 and Phase 2 contamination assessment
  - Due diligence samples in areas designated for fuel/chemical storage or other potential sources of contamination (to confirm any pre-existing hydrocarbon and other contamination)
  - Groundwater and surface water sampling
  - Cultural heritage assessment
  - Sampling protocol
  - Analytical standards (parameter-specific standards with which the results will be compared to derive inferences about base line environmental quality
  - Laboratory selection)
  - QA/QC protocol
  - Plan for two years post-construction monitoring as part of site reinstatement and close out
- Execute the survey in accordance with this plan (including ecological and cultural heritage surveys, note pre-construction clearance and cutting of vegetation shall be executed by the CONTRACTOR)
- Implement post-construction monitoring and produce a site close out report for COMPANY approval.

The site close-out report shall demonstrate that the areas have been returned to near the original condition and that there is no potential for future environmental, social and other liabilities associated with the site.

CONTRACTOR shall carry out appropriate due diligence surveys as described by the Land Management Plan for all additional land.

7.4.2.3 Reinstatement on pipeline ROW

Erosion class 3 (as defined in the Reinstatement Specification) or better shall be achieved for the duration of the CONTRACT WARRANTY period.

Seeding shall be carried out by CONTRACTOR as necessary to meet Erosion Class 3 and to meet the vegetative cover target described in Section 7.4.4.

CONTRACTOR shall undertake the following commitments:

CONTRACTOR shall ensure the following commitments are undertaken:

4-12	The construction contractor(s) will produce method statements incorporating plans for erosion control, sediment control and reinstatement before work begins at river crossings.
17-05	Temporary works areas will be reinstated to near original condition (as compared to pre-construction survey reports or adjacent areas).

As a minimum the CONTRACTOR's method statements will cover:

- Recording of the original channel width, depth and slope prior to disturbance to allow reinstatement as near to the original as is practicable
- Re-contouring of banks to match surrounding slopes
- Installation of erosion protection measures at areas susceptible to washout or run-off. These may include the provision of riprap, gabions or impervious membranes. An ecological survey will be undertaken before any reinforcements are constructed, with appropriate mitigation measures identified and implemented
- Replacement of the channel substrate
- Replacement of the bank topsoil
- Reseeding of the banks.

7.4.2.4 Reinstatement of land other than ROW

This shall include land at construction support facilities, hydrotest water treatment areas, waste transfer stations, concrete batch plants, borrow pits and spoil disposal sites.

The SCPX Project ESIA has committed to the reinstatement of construction support facilities.

CONTRACTOR shall undertake the following commitments:

4-09	Reinstatement will be undertaken as early as practicable and in accordance with the Reinstatement Specification.
3-28	Temporary erosion control measures will be developed and implemented after initial land disturbance and if construction activity on the working areas is suspended over the winter before reinstatement has been completed.
17-05	Temporary works areas will be reinstated to near original condition (as compared to pre-construction survey reports or adjacent areas).

Construction support facilities for the pipeline and facilities and other off-ROW impact areas include (but are not limited to) construction camps, pipe dumps, hydrotest water treatment areas, waste storage areas (WSA), concrete batch plants and project operated borrow pits. CONTRACTOR is required to remove all aboveground and underground infrastructure and utilities, and reinstate the site to near original condition at all construction camps, lay-down areas and other temporary areas.

CONTRACTOR shall ensure that there shall be no encroachment onto adjacent land throughout the duration of the work. Should CONTRACTOR require additional land as working area or for storage or disposal requirements then the requirements of the Land

Management Plan shall apply. CONTRACTOR shall be responsible for reinstatement of all additional areas in accordance with the requirements of this plan and the Reinstatement Specification.

Temporary facilities/works shall be designed so that they can be removed completely (including all underground infrastructure), unless approved by COMPANY in writing. CONTRACTOR shall produce a site-specific method statement for the construction support facilities describing the procedure for closure, decommissioning and reinstatement of the facilities.

Temporary facility removal shall commence as soon as possible when it is no longer required to support construction. Reinstatement of the land shall commence immediately on removal of each individual facility. This is to ensure that misuse, degradation or erosion of the land does not occur.

The support facilities shall be reinstated to near original condition including topography; soil characteristics and vegetation cover and composition (Section 7.4.4).

CONTRACTOR shall permanently reinstate the area as agreed with the owner/authority and with the COMPANY in accordance with the conditions in the pre-entry agreement and shall obtain written approval from owner/authority of the level of reinstatement. Notwithstanding such agreement, final approval of all reinstatement will be given by COMPANY. The pre-entry survey and due diligence close out report will be referred to.

There may be some instances where construction support facilities are to be handed over to COMPANY on completion of construction to continue to be used on subsequent projects or operations. At COMPANY'S request CONTRACTOR shall produce a site specific handover report documenting the current site conditions.

Extraction sites (borrow pits/spoil pits, quarries)

Extraction sites shall not be located within sensitive areas (defined by COMPANY) unless otherwise agreed by COMPANY. Contractor shall provide an assessment of proposed extraction sites, with justification of those to be used to the COMPANY for final approval. Reinstatement shall be in accordance with Section 7.4.9.

CONTRACTOR shall undertake the following commitments:

1-08	When camps and lay-down areas are taken out of service, the existing aggregate will be used, as approved by the Company to landscape areas of the site before topsoil is spread; where this is not appropriate, the aggregate will be returned to borrow pits COMPANY approved disposal areas
1-09	All temporary borrow pits will be reinstated (unless instructed otherwise by regulatory authorities).
1-11	Where benching is required, surplus subsoil will be stored on the ROW or, if disposal is necessary, it will be transported to an approved disposal site and/or approved borrow pits.
1-12	Care will be taken to ensure that the trench spoil is spread beneath the topsoil and is not left on the surface
4-09	Reinstatement will be undertaken as early as practicable and in accordance with the Reinstatement Specification.
17-05	Temporary works areas will be reinstated to near original condition (as compared to pre-construction survey reports or adjacent areas).

CONTRACTOR shall ensure that all borrow material will only be sourced from (both existing and new) licensed and authorised sites or sources (as described in the Resource Management Plan). Where new quarries need to be opened the CONTRACTOR will obtain

the necessary permits and licences and conduct the required Environmental and Social Impact Assessment (as per the Land Management Plan).

All temporary project-operated borrow pits/and or spoil pits shall be reinstated to near original condition.

Spoil and rock disposal sites

Spoil (excess soil and rock) disposal sites shall not be located within nationally or internationally protected areas or in sensitive areas (defined by COMPANY) unless otherwise agreed by COMPANY. CONTRACTOR shall provide an assessment of proposed spoil/rock disposal sites with justification of those to be used to COMPANY for final approval. Reinstatement shall be in accordance with Section 7.4.9.2.

CONTRACTOR shall not indiscriminately place excavated material and the like on areas of land not acquired by COMPANY or temporarily acquired by CONTRACTOR. All spoil disposal sites shall be identified, assessed and acquired in accordance with the Land Management Plan. The preference will be to dispose of spoil in areas where disposal would be beneficial, priority shall be given to using spoil to reinstate project opened borrow pits.

CONTRACTOR shall undertake the following commitments:

9-04	No side-casting of excess spoil outside the working area will be permitted.

Existing roads and access

CONTRACTOR shall undertake the following commitments:

37-07	Following construction, the Contractor will repair roads to at least their pre-construction condition.

It is expected that some existing roads will require upgrades to a condition suitable for use by the Project. CONTRACTOR shall reinstate all existing access roads to at least their original condition or better and to COMPANY approval following completion of construction activities. CONTRACTOR's pre-entry survey results will be referred to.

CONTRACTOR shall also undertake pre-condition surveys and regular inspections and repair as described in the Infrastructure and Services Management Plan (Section 13).

7.4.2.5 Restricting access

CONTRACTOR shall undertake the following commitments:

3-09	Local people will be actively discouraged from using the ROW as an access road (through use of signage, public education, leaflets etc.).

To prevent rutting, subsequent erosion problems, and damage, measures should be taken where there is risk of the ROW being utilised as a local roadway. CONTRACTOR shall conduct regular toolbox talks/training to all drivers and block access, at locations specified by COMPANY representatives, by suitable means. This may include the:

- Construction of berms of sufficient height to provide a barrier to vehicles
- Erection of permanent fences in accordance with COMPANY specification
- Placing of rocks excavated during construction.

The criteria used in choosing the method shall include likely effectiveness, availability of local materials, and ecological and visual impact. The method of restriction at each location shall be approved by COMPANY representatives.

CONTRACTOR's Community Liaison Implementation Plan (refer to the Community Liaison Management Plan) shall also take a proactive approach to addressing and discouraging ROW access issues through liaison with local communities and landowners.

The ROW shall be monitored for:

- Subsidence of the pipeline trench (below natural grade)
- Slope wash from improperly placed berms
- Slumping and soil movements from cut and fill slopes
- Loss of stored topsoil, subsoil or cuttings
- Off-ROW disturbances.

7.4.2.6 Reinstatement during land exit

CONTRACTOR shall comply with the requirements of the Land Management Plan. Notwithstanding such agreement, all reinstatement shall be to the satisfaction of COMPANY.

7.4.3 Soils

7.4.3.1 Handling wet soil

During handling, damage to soil structure and the seed bed shall be avoided. Soil handling under wet conditions is to be avoided other than in areas having obviously sandy soils (e.g. riverbanks).

CONTRACTOR shall cease soil-handling activities when any of the following apply:

- Persistent heavy rain (as advised by COMPANY)
- Further handling will cause damage to the soil structure or seed bed
- COMPANY anticipates that further handling will damage the soil and/or seed bed.

CONTRACTOR shall adopt the minimum requirements for handling wet soils as detailed in the Reinstatement Specification.

7.4.3.2 Minimising compaction

CONTRACTOR shall undertake the following commitments:

2-01	Load-bearing materials, such as bog mats and geotextile membranes, will be used to support heavy loads in areas of soft ground (including wetland areas) unless deemed impractical by the Company.

CONTRACTOR shall minimise compaction of soft and waterlogged ground to aid subsequent reinstatement and to prevent damage in archaeological areas. CONTRACTOR's Reinstatement Implementation Plan shall include details of locations where soil compaction may be a particular issue and shall include provision for:

- Preparing a method statement to address construction through soft ground and which includes a consideration of the use of load-bearing materials (e.g. bog mats, geotextile membranes or other as proposed by CONTRACTOR) to support heavy loads in soft ground
- Identifying fragile and sensitive soils in advance of work and implementing the method statement as necessary or as advised by COMPANY.

7.4.3.3 Topsoil stripping

Where excavation is necessary, CONTRACTOR shall establish the depth of the topsoil. Topsoil and sub-soil shall be stripped separately.

Topsoil and sub-soil shall be stripped separately. Topsoil stripping shall be in accordance with the Reinstatement Specification requirements as outlined below:

- Where the depth is equal to or less than 300mm, the topsoil shall be carefully stripped to its full depth and stored in a dedicated place
- Where the depth is equal to or less than 100mm, additional precautions will be taken when the topsoil is stripped, as outlined in the above commitments
- Where the depth of topsoil is greater than 300mm, only the top 300mm shall be similarly stripped and stored. Topsoil below 300mm shall only be removed if this is required by the Reinstatement Specification; where that is the case, it shall be stored as topsoil provided the stockpiling specification given below can be reasonably met
- Topsoil shall not be stripped from areas that will only be used for storing topsoil
- Modification of these requirements may apply subject to COMPANY approval, e.g. for areas where the ground is solid rock.

CONTRACTOR shall undertake the following commitments.

4-15	A soil survey will be undertaken (based on a representative sample) prior to construction to measure the depth of the topsoil layer along the pipeline route and will be used to determine the depth of topsoil stripping.
X3.02	In sensitive areas of thin topsoil (as defined by the Company) additional precautions will be taken with the aim of preserving the topsoil for subsequent replacement where deemed feasible by the Company.

Additional camp and pipe storage areas identified during July–August 2012 will require pre-construction soil surveys to define additional topsoil storage area and stripping requirements to be undertaken and defined by the CONTRACTOR.

4-22	A soil survey of camp sites and pipe storage areas that are identified will be undertaken.

Additional precautions in areas of thin topsoil which should be implemented by the CONTRACTOR (other methods can be proposed for COMPANY approval) include:

- Constant supervision during topsoil stripping so that only the agreed topsoil strip depth is implemented
- In areas where machinery is not able to achieve the topsoil strip depth and there is a risk of subsoil mixing, stripping by other means will be implemented
- In areas of narrow erodible ridges where conservation and good handling of topsoil is of paramount importance, topsoil shall be removed by other means if removal by machine risks mixing with subsoil
- Stripped topsoil in sensitive (thin) topsoil areas shall be stored at the edge of the ROW
- Consideration will be given to covering topsoil piles where topsoil is very thin and at risk of wind and water erosion
- If significant amounts of topsoil are lost due to poor topsoil handling then CONTRACTOR may be required to replace it with topsoil of similar chemical, biological and physical characteristics
- Soil survey at camp, pipe yards, lay-down areas, including topsoil depth and fertility testing to inform reinstatement
- CONTRACTOR will provide a method statement on how to deal with sensitive soils.

Preliminary soil surveys have shown sensitive/thin topsoils at various areas along the route at KP0–263, KP321–327 and 344–347. Notably, particularly thin topsoil was recorded at the following locations:

- SCPX KP129
- Between SCPX KP170 and SCPX KP185 (Karabakh Plain)
- SCPX KP185–200
- Proposed construction camp at Yevlakh.

7.4.3.4 Topsoil and subsoil storage

CONTRACTOR shall comply with the following SCPX ESIA commitments for topsoil storage:

4-02	Stored subsoil and topsoil will be segregated in a manner that avoids mixing.
4-03	Topsoil will be stored outside the running track used by construction plant, equipment and vehicles.
4-05	Topsoil stacks along the RoW will be free draining and stored in accordance with the Project Reinstatement Specification.
4-06	Soil storage areas will be protected from vehicle movements to avoid soil compaction.
4-08	The topsoil and subsoil stack surface will be compacted sufficiently with the aim of preventing erosion, without leading to the development of anaerobic conditions.
13-02	Gaps will be left in soil stacks at strategic locations to allow water through.

Topsoil shall be stored where it will not be compacted by vehicles (i.e. outside the running track) or contaminated and shall be stored in a manner that will minimise its loss and/or degradation.

Topsoil shall not be mixed with rocks or subsoil and shall be stored on the opposite side of the ROW to subsoil. If sufficient storage space exists, topsoil and subsoil may be stored on the same side provided precautions are taken to prevent them becoming mixed. In width-restricted areas, topsoil and subsoil shall be stored in accordance with the relevant specification for these areas. Signs or other identification shall be erected on the topsoil and subsoil stockpiles to make sure they are not mixed during removal and restoration activities.

Topsoil and subsoil stacks at the construction camps and permanent facilities should be positioned to shield communities from disturbance where possible and shall be maintained through aeration, seeding and water as necessary to maintain the soil fertility as far as possible.

CONTRACTOR shall comply with the following commitment at watercourse crossings:

3-23	At watercourses, bank and bed material will be stored separately, away from the active channels and will not be placed where flow or drainage will be obstructed.

CONTRACTOR shall ensure that watercourse bed and bank materials will be separately excavated, segregated and replaced following pipeline installation. CONTRACTOR shall not store stripped or excavated material at watercourses on steep slopes. CONTRACTOR shall maintain a sufficient distance between the watercourse bank and material storage areas to avoid erosion and sediment entering the watercourse.

7.4.3.5 Topsoil maintenance

CONTRACTOR shall undertake the following commitments:

4-04	If topsoil is stored for more than six months, the stacks will be monitored for anaerobic conditions and manual aeration will be undertaken if they develop.
4-13	Topsoil stacks will be regularly inspected for compaction and erosion; corrective measures will be implemented if compaction or erosion is identified.

CONTRACTOR shall be responsible for developing a monitoring procedure for topsoil maintenance that details the monitoring strategy, types of analysis to be undertaken and suite of corrective actions that meets the above commitments. Topsoil stockpiles shall be protected (e.g. using silt fences) from erosion to avoid washout and loss of topsoil during heavy rains.

Where anaerobic conditions occur in the topsoil this may affect the soil fertility and subsequent seeding and biorestoration performance and should be avoided to maximise chances of successful vegetative growth.

7.4.3.6 Reinstatement of soils

CONTRACTOR shall undertake the following commitments:

2-05	Backfill will be adequately (but not excessively) compacted to prevent future settlement
1-12	Care will be taken to ensure that the trench spoil is spread beneath the topsoil and is not left on the surface.

CONTRACTOR shall carry out monitoring to demonstrate soil compaction targets have been achieved and shall detail the monitoring procedure in the Reinstatement Implementation Plan.

CONTRACTOR's reinstatement implementation plan shall comply with the following commitments:

D5-086	To facilitate natural re-vegetation of the ROW, the separately stockpiled topsoil and vegetation debris will be spread over the surface of the ROW following completion of grading, as appropriate.
2-07	After backfilling, the subsoil beneath the running track will be ripped prior to reinstatement of agricultural land.
3-11	Once the topsoil has been replaced it will be stone picked to remove any large stones that are not in keeping with the surrounding soil texture.

Topsoil shall not be mixed with subsoil during replacement. Topsoil shall not be used for bedding material in the trench, and topsoil from unstripped/undisturbed areas shall not be used to cover disturbances.

Any make-up topsoil shall only be obtained from stockpiles of pre-excavated material and its use is subject to COMPANY approval. Topsoil shall not be used for padding material or to support line pipe or any other construction related uses.

Topsoil replacement in agricultural land shall include tilling etc. in accordance with COMPANY procedure.

Any imported soil will have similar physical characteristics to soil in the area where it will be deposited. The soil will be free from contaminants. The CONTRACTOR will undertake an analysis of the soil and maintain records for COMPANY review.

7.4.3.7 Soil cuttings control

Wooden fences or other methods to be proposed by the CONTRACTOR and agreed with the COMPANY (e.g. wire fencing, interlocked logs between trees, etc) shall be installed in areas of side slope and ridge construction to retain cuttings during construction and reinstatement of the ROW. CONTRACTOR shall implement the following commitment:

9-04	No side-casting of excess spoil outside the working area will be permitted.

CONTRACTOR shall ensure fences are capable of safely supporting the loads imposed. CONTRACTOR shall be aware that the use of wooden fences may pose localised problems. In certain areas, firewood is a valuable commodity; therefore, the fence material will be attractive to locals for firewood. Suitable geotextile material may be an alternative as approved by COMPANY.

Fences shall be regularly inspected to ensure safe operation and structural integrity. Fences shall be removed, unless directed otherwise by COMPANY, during reinstatement of the ROW.

7.4.3.8 Erosion control measures

The following SCPX ESIA commitments apply to erosion control and shall be addressed in CONTRACTOR's Reinstatement Implementation Plan.

CONTRACTOR shall undertake the following commitments:

2-03	Driving along the ROW will not be permitted in excessively wet conditions unless otherwise approved by the Company.
2-04	Temporary drainage will be provided where necessary ponding or waterlogging of the working area.
3-03	Erosion control measures will be implemented to achieve erosion Class 3 or better.
3-05	Temporary dewatering or trench stabilisation will be undertaken where required to minimise slumping of trench walls.
3-28	Temporary erosion control measures will be developed and implemented after initial land disturbance and if construction activity on the working areas is suspended over the winter before reinstatement has been completed.
4-07	Where the Project considers that ground is sufficiently steep (generally greater than 25%), topsoil stockpiles will be protected with silt fence to help reduce washout and loss of topsoil during heavy rains.
10-12	Sediment control fencing, drainage channels and trench barriers will be installed where appropriate.
3-30	When discharge velocities have the potential to create erosion, energy dissipaters will be used to establish sheet flow. Trenches will be dewatered in such a manner that no heavily silt-laden water flows into any wetland or water body .
3-33	Land will be temporarily acquired off the ROW for construction of any sediment pits/traps or other erosion control or sediment run-off measures where needed to assist in achieving satisfactory erosion control or reductions in sediment run-off
16-01	The land drainage system will be reinstated to achieve pre-existing functionality.

Temporary erosion control measures shall be installed and maintained by CONTRACTOR along the ROW during construction and reinstatement, as detailed in the Reinstatement Specification in order to protect the environment and to achieve the performance standards as set out in Section 7.4.2.3. Temporary erosion control measures shall also be installed at the facility construction sites during earth stripping work as required. Additional silt fencing shall be provided at the request of the COMPANY.

Erosion matting

Erosion matting shall be installed as per the Reinstatement Specification to provide an immediate protection to the slope against erosion, prevent washing-out of seeds and enhance the micro-climatic conditions in the soil for plant growth.

Erosion matting shall provide temporary protection to the soil surface until sufficient vegetation cover has been established to control erosion and meet the performance criteria

as set out in Sections 7.4.2.3 and 7.4.4. Erosion matting shall be biodegradable and meet the requirements of the Reinstatement Specification.

Topsoil preparation and seeding shall be undertaken by CONTRACTOR prior to laying erosion matting. CONTRACTOR shall make any holes in erosion matting required by COMPANY in advance of laying matting to allow shrubs to be planted.

Sediment interception

Where sediment runoff could affect a watercourse, wetland, water body or environmentally sensitive area, sediment interception shall be provided where required to prevent sediment leaving the ROW or facility construction sites. Sediment interception shall be provided for runoff that may occur during construction and reinstatement activities until the establishment of sufficient vegetation to meet the requirements of Section 7.4.4.

Sediment interception may take the form of the following devices.

Silt fence

Silt fences shall be installed in areas of low sheet flow and in accordance with the requirements of the Reinstatement Specification requirements regarding drainage area, flow path length, slope and filter fabric criteria.

Sediment shall be removed prior to the sediment reaching one-third of the height of the silt fence and collected and disposed of in accordance with the Waste Management Plan.

Straw bale barrier

Straw bale barriers shall be installed in areas where small amounts of temporary sediment interception are required.

Straw bale barriers shall not be installed where sediment control is required for periods greater than three months. Where they are installed on the working width, they should follow a slight gradient towards a natural channel, waterway, or lined chute. Barriers shall be installed in accordance with the Reinstatement Specification.

Filter berms

Filter berms shall be installed where there is a requirement to temporarily retain runoff water after a storm event, allowing sediment to settle.

Filter berms shall be designed to allow for the drainage area under consideration and site-specific requirements, in accordance with the Reinstatement Specification.

Sediment pits/traps

Temporary sediment traps shall be installed as required in the following locations:

- At outlets of ROW drainage systems
- At the outlet of any structure which concentrates sediment-laden runoff
- Above a storm water drain that is in line to receive sediment-laden runoff.

Land required for construction of sediment pits/traps or other erosion control or sediment run-off measures may need to be acquired in land off the ROW. Sediment traps shall be installed and maintained in accordance with the Reinstatement Specification to meet the requirements of each site. Sediment shall be collected and disposed in accordance with the Waste Management Plans.

7.4.3.9 Permanent erosion control devices

CONTRACTOR shall undertake the following commitments:

3-03	Erosion control measures will be implemented to achieve erosion Class 3 or better.

Permanent erosion control measures (which are described below) shall be installed, maintained and monitored by CONTRACTOR as per the Reinstatement Specification to meet the performance requirements in Sections 7.4.2.3 and 7.4.4.

Diverter berms

Diverter berms shall be placed across the slope of the ROW to intercept runoff and convey it to a safe outlet. Diverter berms shall be installed as detailed in the Reinstatement Specification requirements which includes details on the berm width and preliminary designs of site specific berm spacing. CONTRACTOR shall make minor adjustments to the berm spacing to ensure that each berm has a suitable and non-erosive outlet.

The berm shall be stabilised or seeded as needed in order to maintain structural integrity.

Diverter berm outlets

Water outlets shall provide disposal of runoff generated along the ROW. The run-off shall not cause soil erosion or sediment transportation.

Outlets shall be installed at the end of each diverter berm. Outlets shall effectively dissipate the energy of run off from the ROW and take the water to a disposal point that is safe and avoids environmental impact. At outlet locations where stable vegetation is not present, the outlet will be lined with rock, or erosion control matting will be positioned at the slope breaker outlet.

Gabions

Gabions and gabion mattresses shall be used where there is a requirement to form flexible, permeable, monolithic structures such as retaining walls, revetments and weirs for earth retention.

Gabion walls may be constructed and utilised for permanent recovery of the right of way and prevention or stabilisation of riverbanks and steep slopes.

Trench (ditch) breakers

CONTRACTOR shall undertake the following commitments:

3-07	Trench breakers will be installed where downhill flow within the backfilled trench may lead to soil erosion.
D5-065	In sloping terrain (usually 10 degrees and over), trench breakers (e.g. bags filled with soil/cement mix) will be installed across the width of the trench at suitable intervals up to the graded ground level.

Trench breakers shall be installed within the trench at locations along the pipeline route where the natural profile, drainage pattern and backfill materials may cause the trench to act as a drain.

CONTRACTOR shall design the spacing and location of trench breakers based on typical details provided in the Reinstatement Specification. Trench breakers may also be required at bases of slopes adjacent to wetlands and where needed to avoid draining of wetlands.

7.4.4 Seeding and Re-Vegetation

Seeding describes the first round of re-vegetation which is generally necessary to achieve an Erosion Class 3 or better, re-establish vegetative cover and initiate the biorestoration process. CONTRACTOR shall carry out seeding which is likely to be required on all areas designated as non-agricultural as is described in the Reinstatement Specification. At facility

construction sites, the need for seeding during the reinstatement of temporary areas will be carried out by the CONTRACTOR as agreed by the COMPANY.

COMPANY shall advise on detailed seeding locations and the location of all non-agricultural land shall be agreed between CONTRACTOR and COMPANY. CONTRACTOR shall carry out seeding as necessary to meet Erosion Class 3 and the near-term reinstatement targets, including vegetation cover, as described in Figure 7-1.

COMPANY shall be responsible for specifying seed mix (ensuring no invasive species are used), quantity and sowing locations. It is likely that the seed composition will include:

- The species originally found in each route section or Project area
- Other species, e.g. fast growth types, suited to the local environment and indigenous to the region
- An ecologically compatible mixture of these two groups.

CONTRACTOR shall be responsible for procurement of a commercially available seed, testing to ensure there are no alien and/or invasive species present, seed storage, seed bed preparation, seeding rates, application of additives, e.g. fertiliser, pesticides; watering, in accordance with method statements produced by the Ecological Management Contractor and approved by COMPANY (as described in the Ecological Management Plan).

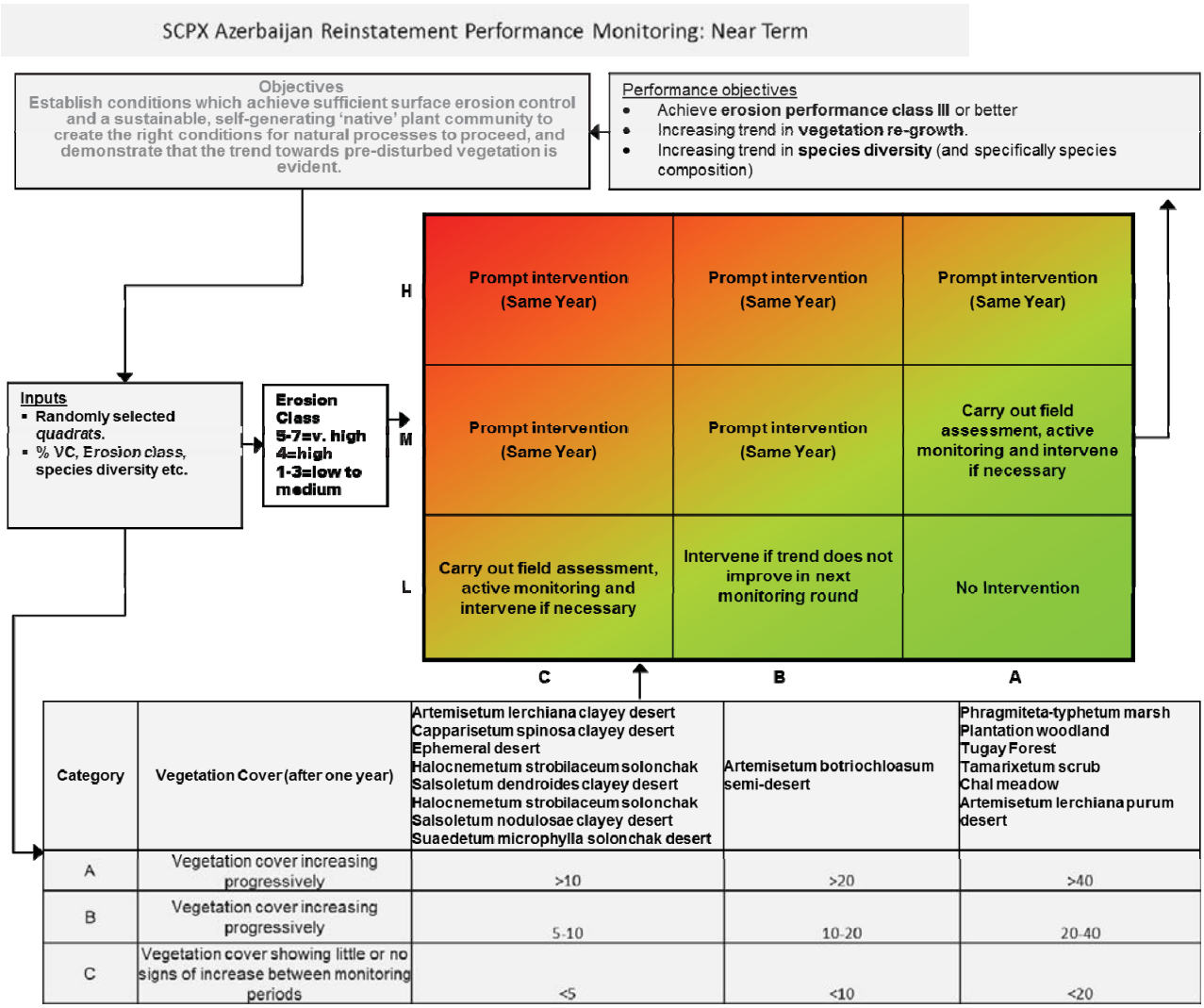
CONTRACTOR shall be responsible for all subsequent aftercare and monitoring to meet the vegetative cover target during the CONTRACT WARRANTY period, after which COMPANY shall retain responsibility.

CONTRACTOR shall undertake the following commitments:

18-02	No invasive species will be used in seed mixes for erosion control or biorestoration.

CONTRACTOR shall meet the near-term re-vegetation monitoring and performance requirements given in Figure 7-1.

This will minimise surface erosion and provide a sustainable, self-generating plant community. However, COMPANY recognises that actual rates of vegetation growth depend on site-specific soil, slope and climatic conditions. Any deviations from this requirement will be subject to CONTRACTOR justification and COMPANY approval. COMPANY will provide information regarding the location of the specific habitats.



Category	Vegetation Cover (after one year)	Artemisetum lerchiana clayey desert Capparisetum spinosa clayey desert Ephemeral desert Halocnemetum strobilaceum solonchak Salsoletum dendroides clayey desert Halocnemetum strobilaceum solonchak Salsoletum nodulosae clayey desert Suaedetum microphylla solonchak desert	Artemisetum botriochloasum semi-desert	Phragmiteta-typhetum marsh Plantation woodland Tugay Forest Tamarixetum scrub Chal meadow Artemisetum lerchiana purum desert
A	Vegetation cover increasing progressively	>10	>20	>40
B	Vegetation cover increasing progressively	5-10	10-20	20-40
C	Vegetation cover showing little or no signs of increase between monitoring periods	<5	<10	<20

Figure 7-1: Re-Vegetation Monitoring and Performance Requirements (Near Term)

CONTRACTOR shall ensure that:

17-11	Corrective measures will be implemented if establishment of vegetation is not successful or if, following survey and data analysis, the species composition is considered by a Project ecologist to be unsuitable for the area.

CONTRACTOR shall provide the option to appoint an appropriately experienced and qualified subcontractor for the Project duration to implement matting, seeding and re-vegetation in accordance with this plan. Subcontractor shall be approved by COMPANY and provided with appropriate vehicles, offices and administrative support by the CONTRACTOR.

7.4.4.1 Agricultural/developed areas

In agricultural and other developed areas CONTRACTOR shall return the land to the landowner in accordance with the land exit requirements as per the Land Management Plan. CONTRACTOR shall assume that the land is to be made ready for re-planting with crops: the land shall be graded and tined to remove compaction. Application of fertiliser and planting of seeds on permanent growing areas will be carried out by the landowner or tenant. Site-specific requirements shall be agreed within the pre-entry agreement.

CONTRACTOR shall undertake the following commitments:

3-19	Field boundaries will be reinstated to pre-existing condition on completion of construction.
2-07	After backfilling, the subsoil beneath the running track will be ripped prior to reinstatement of agricultural land.

All field boundaries (whether natural or man-made) shall be correctly reinstated in their correct location on completion of construction. ECOLOGICAL MANAGEMENT CONTRACTOR shall be responsible for any planting required to reinstate boundaries (as outlined in the Ecological Management Plan). CONTRACTOR shall retain a log of all boundaries which have been removed or damaged including the number of trees removed. CONTRACTOR shall be responsible for reinstatement of all other types of boundaries.

7.4.4.2 Non-agricultural areas/undeveloped areas

CONTRACTOR shall seed all undeveloped areas in accordance with COMPANY requirements (Section 7.4.4). Preliminary seeding locations are detailed in the Reinstatement Specification.

7.4.5 Surface Water

Many of the mitigations detailed above are also directly applicable in respect of drainage maintenance and management. The following specific measures are also applicable to watercourses.

CONTRACTOR shall include and detail in each crossing method statement measures to minimise erosion and sedimentation through erosion control devices such as silt fencing.

Site-specific method statements shall be produced for all watercourses that have CONTRACT detailed crossing drawings associated with them or occur in sensitive areas or agricultural areas.

The method statement shall ensure compliance with the following commitments which the CONTRACTOR shall undertake:

3-23	At watercourses, bank and bed material will be stored separately, away from the active channels and will not be placed where flow or drainage will be obstructed.
11-04	Any temporary dams in watercourses to be removed as soon as pipe installation and reinstatement at that crossing is complete.
10-14	Watercourse banks affected by the Project crossings will be restored to near original condition, which will be assessed individually for each watercourse or other area and defined in the Contractor's Reinstatement Implementation Plan. Any deviations (e.g. because hard reinforcement is required for erosion control) shall be subject to Company approval.
13-03	Any flood defence banks breached by the pipeline will be replaced during reinstatement.
X5-15	Non-open-cut crossing will be implemented at the Karabakh Canal with the intention of avoiding any impact on flow.
3-26	Surface water drainage from operational areas including access roads and temporary facilities will be designed to minimise soil erosion in accordance with sustainable urban drainage systems (SUDS) principles.

The principles of sustainable urban drainage systems (SUDS) should be applied to the construction areas to minimise surface run off and reduce flash increase in flow rates in local surface water and drainage ditches.

Watercourse banks shall be stabilised within 48 hours of backfilling. Where this is not possible CONTRACTOR shall propose site-specific solutions with engineering justification, this shall be included in COMPANY approved method statement.

All watercourses shall be inspected regularly in accordance with the requirements of the Reinstatement Specification.

7.4.6 Landscape and Social

CONTRACTOR shall implement the following ESIA commitments:

X4-10 KP321 - KP327 and KP344 - KP347	Following pipeline installation at KP321 - KP327 and KP344 - KP347, an assessment will be conducted and used to design the final landform. The aim will be to create a natural looking landform in keeping with the landscape character of the broader area , as far as practical, having due regard to the over-riding need to assure the integrity of the pipeline during operation.
17-05	Temporary works areas will be reinstated to near original condition (as compared to pre-construction survey reports or adjacent areas).

Topographical survey results and pre-construction survey results shall be referred to in order to demonstrate conformance with this requirement.

7.4.6.1 Reinstatement of third-party property

CONTRACTOR shall reinstate, or provide replacement of, any third-party property or infrastructure that is damaged, lost, or re-located as a result of construction activities, to the pre-construction condition or better. Such reinstatement or alternative provision shall be carried out before or immediately after the damage or loss has been incurred, except where there are relevant provisions in an agreement between the third party and COMPANY. (See also the Infrastructure and Services Management Plan).

7.4.6.2 Third-party land

CONTRACTOR shall reinstate third-party land in accordance with any pre-entry agreement, in accordance with this Reinstatement Management Plan and Land Management Plan and all other relevant ESMMP requirements. If there is no pre-entry agreement, CONTRACTOR shall fully reinstate any land disturbance caused by construction or associated activities to COMPANY satisfaction and provide a close out report of the reinstated site.

7.4.7 Special Areas and Sensitive/Priority Areas

7.4.7.1 Erosion Class > 3

At areas where the original erosion class is greater than 3, CONTRACTOR shall develop a site-specific method statement and submit to COMPANY for approval. This shall include a review and update as necessary of the reinstatement measures within the Reinstatement Specification.

Method statements shall include (but not be limited to) the following information:

- Scope of work, QA/QC Plan and HSE Plan
- Field sampling exercise to include physical description of the landscape, slope geometry, evidence of existing erosion, photographic survey, verification of geology and soil type, particle size distributions, nutrient sampling, etc.
- Identification of adequate sources of all necessary resources, e.g. jute matting.

The basis of the assessment shall be the Universal Soil Loss Equation as further described in the box below.

Universal Soil Loss Equation

This equation predicts the long-term average annual rate of erosion on a field slope based on rainfall pattern, soil type, topography, crop-system and management practices. USLE only predicts the amount of soil loss that results from sheet or rill erosion on a single slope and does not account for additional soil losses that might occur from gully, wind or tillage erosion. This erosion model was created for use in selected cropping and management systems, but is also applicable to non-agricultural conditions such as construction sites. The USLE can be used to compare soil losses from a particular site with a specific management system to 'tolerable soil loss' rates (see Reinstatement Specification). Alternative management may also be evaluated to determine the adequacy of conservation measures in planning.

Five major factors are used to calculate the soil loss for a given site. Each factor is the numerical estimate of a specific condition that affects the severity of soil erosion at a particular location. The erosion values reflected by these factors can vary considerably due to varying weather conditions. Therefore, the values obtained from the USLE more accurately represent long-term averages. The equation is written as follows:

$$A = R \times K \times LS \times C \times P$$

Where:

A	potential long-term average annual soil loss in tons per acre per year
R	rainfall and runoff factor by geographic location
K	soil erodibility factor
LS	slope length-gradient factor
C	vegetation and management factor
P	support practice factor

For further information, refer to:
http://www.omafra.gov.on.ca/english/engineer/facts/00-001.htm

CONTRACTOR shall use this methodology to determine the estimated removal rates and recommend appropriate mitigation measures required to meet the erosion performance and vegetative cover targets of this Plan (Sections 7.4.2.3 and 7.4.4).

CONTRACTOR shall demonstrate that this work has been completed in the Special Area Reinstatement Method Statements and shall provide the necessary competent personnel to execute this work. Method statements shall be submitted to COMPANY for approval.

7.4.7.2 Side slopes and cuttings

In all areas the side slope shall be restored to near original contours. CONTRACTOR shall produce a site-specific method statement to describe how this will be completed and submit for COMPANY approval.

As described in the Reinstatement Specification the subsoil layers shall be arranged so that the outer edges effectively restore the slope to its original (ground) level; on no account shall subsoil extend beyond the original line of slope or a new slope be created which is steeper than the original slope.

7.4.7.3 Sensitive/priority areas

CONTRACTOR will be informed on any additional sensitive area requirements separately. CONTRACTOR shall refer to Sections 8.4.2.2 and 8.4.3.1 for details of sensitive/priority areas.

7.4.8 Site Clean-up; Disturbance of contaminated land

7.4.8.1 Clean-up of sites

CONTRACTOR shall implement the following commitment:

D5-093	Before construction personnel and equipment are demobilised, temporary buildings and equipment, tools and any excess material brought on site or generated during the construction and commissioning programme will be removed.

On the ROW, CONTRACTOR shall, after backfilling and before replacement of topsoil, clean-up all areas affected by construction operations. In other Project areas, CONTRACTOR shall clean-up immediately on cessation of activity in that area. Clean-up includes removal of all plant, equipment and materials not required for replacement of topsoil. A further clean-up exercise shall be undertaken following topsoil replacement and a final clean-up after any seeding/ planting.

In pre-developed areas (either for agriculture or industry) the cleaned condition shall be near the original condition. As a minimum, all surface contamination and waste shall be removed whether pre-existing or not. The full remediation of contaminated land is not covered by this plan and reference should also be made to the Waste Management and Pollution Prevention Plans.

All waste materials shall be managed and disposed of in accordance with the requirements of the Waste Management Plan.

Clean-up shall be implemented in accordance with the Pollution Prevention Plan and to the satisfaction of COMPANY. For construction camps, WSAs and other facilities, clean-up will be dependent on the results of the due diligence assessment and site close out report (Section 7.4.2.2). Until COMPANY approval is received CONTRACTOR shall maintain capability on-site to undertake additional clean-up work to gain COMPANY approval.

7.4.8.2 Disturbance of contaminated land

All known pre-existing contamination, e.g. fly tips, within the right-of-way will be cleaned up by CONTRACTOR to COMPANY requirements prior to or during the Project construction (see Section 10.4.12, Pollution Prevention Plan). Where new contamination is discovered within the right-of-way, CONTRACTOR will be responsible for ensuring corrective action to COMPANY standards as detailed in the Waste Management Plan and the Pollution Prevention Plan.

7.4.9 Materials and Waste Management

Waste management for all construction work including reinstatement shall be in accordance with the Waste Management Plan. Further reinstatement specific requirements are detailed below

- CONTRACTOR shall assess alternative methods of excavation and make a selection for each Project area that minimises surplus excavated material as far as practicable. All material that is excavated shall be re-used to the maximum extent practicable
- Blasting will only be used where other excavation methods are considered technically impracticable or uneconomic
- Fill and padding materials for any purpose may be obtained by deliberate extraction or from a third party if those materials cannot be obtained practicably by re-use of surplus excavated material.

7.4.9.1 Management of waste soil and rock

Generally, all soil and rock shall be returned to the excavated areas where practicable. In some locations, however, there will be surplus subsoil or rock that cannot be returned, and this must be disposed of both safely and in line with the requirements of this plan. The CONTRACTOR'S implementation plan shall address the following items.

CONTRACTOR shall undertake the following commitments:

9-01	Re-contouring should be sympathetic and in keeping with the surrounding landscape, and as approved by the Company, where this is not precluded by risk to integrity of the pipeline or erosion considerations.
9-02	All potential subsoil disposal sites and disposal plans will be subject to an environmental and social review prior to their adoption.
D5-066	Any surplus subsoil from trench excavations will normally be spread within the working width and within zones that exhibit similar subsoil types. The spreading work will be carried out in a manner that avoids the mixing of soil types to the greatest extent possible.

Material remaining as surplus after final reinstatement shall be removed from the ROW as waste. CONTRACTOR retains the same responsibilities for excess soil and rock as for any other waste material as specified in the Waste Management Plan. CONTRACTOR shall be responsible for all transport of spoil and management of spoil disposal sites.

Excess soil and rock shall be managed according to the following priorities:

Irrespective of the disposal location, disposal of waste soil and rock shall not adversely affect re-use of an area by landowners. For example, rock shall not be buried in agricultural land where this is inconsistent with pre-existing condition and land access agreements. On cultivated land, the first priority will be to not dispose of surplus waste rock and material in the ROW or working areas.

First priority: ROW reuse:

Where surplus soil and rock is suitable for use as a construction material it will be first considered for reuse on Project area (e.g. Project infrastructure works materials; stability, erosion control, construction camps, roads etc.).

Second priority: ROW/Project-area disposal:

Excess material can be re-used or disposed of on the ROW or other Project areas (e.g. for hillside contour blending) as detailed in the Reinstatement Specification.

Note: all disposal on the Project areas shall be done without environmental impact to off-Project areas.

Third priority: Off-ROW reuse:

Transfer to third party for re-use purposes as raw or semi-finished materials (e.g. crushed rock that may be suitable for road construction materials or for rail ballast).

Fourth priority: Off-ROW disposal (all sites to be agreed prior to use with COMPANY):

Disposal sites for waste soil and rock: Potential disposal sites shall be identified and assessed by CONTRACTOR and a Waste Soil and Rock Disposal report submitted to COMPANY for approval. The report will contain technical and environmental assessments (in accordance with the Land Management Plan) on all the sites considered and propose, with justification, those to be used. CONTRACTOR shall plan, develop, operate and re-instate those sites. CONTRACTOR shall be responsible for obtaining and maintaining regulatory approval for the chosen sites. CONTRACTOR shall submit the Pre-Construction Survey of such sites and follow other requirements as described in Section 7.4.2.1.

Irrespective of the disposal location, disposal of waste soil and rock shall not adversely affect re-use of an area by landowners. For example, rock shall not be buried in agricultural land where this is inconsistent with pre-existing condition and land access agreements.

Further detail is provided within the Reinstatement Specification.

Spoil shall not be deposited:

- Without COMPANY approval for each disposal location
- Within sensitive/priority areas
- In, or adjacent to, watercourses or valley bottoms
- In windrows over the pipe
- Where it will potentially interrupt flow of rainwater along rills and gullies
- In such a way as to cause a landscape (visual) impact (credit may be taken for final condition); and
- On any open area where the slope exceeds 30°.

7.4.9.2 Sites for permanent disposal of waste soil and rock

Approved disposal sites for the disposal of excess excavated material will be reinstated in accordance with the Reinstatement Specification and to be similar to the original condition. Sites that are used only for the disposal of excess soil and rock shall be closed, capped and landscaped in accordance with the Specification, except as otherwise required by COMPANY. Each site shall be vegetated, as necessary, to meet the erosion control and vegetative cover requirements and to blend in with the local environment as required by COMPANY.

7.5 Verification and Monitoring

7.5.1 Reinstatement Monitoring and Reporting

All COMPANY and CONTRACTOR verification and monitoring activity related to the provisions of this plan shall be in accordance with the requirements given in Section 20.

7.5.1.1 Monitoring and corrective actions

CONTRACTOR shall undertake the following commitments:

3-08	Soil loss will be monitored and corrective actions taken if it exceeds erosion class 3, in accordance with the Reinstatement Plan.
3-15	Upon completion of subsoil and topsoil reinstatement, the construction contractor and Company personnel will inspect disturbed areas jointly for signs of erosion, slope stability, relief, topographic diversity, acceptable surface water drainage capacity and function, and compaction. Remedial measures will be implemented, if necessary, at locations where reinstatement does not meet the Project criteria.
17-11	Corrective measures will be implemented if establishment of vegetation is not successful or if, following survey and data analysis, the species composition is considered by a Project ecologist to be unsuitable for the area.
3-32	The ROW will be inspected regularly for signs of erosion and sediment run-off. The frequency of these inspections will be increased in sensitive areas.
X5-10	The Project will undertake increased monitoring for signs of erosion during the two year post construction warranty period at KP321 - KP324 and KP344 - KP345.
Post-CONTRACTOR warranty period the following commitments will be undertaken by the COMPANY and the ECOLOGICAL MANAGEMENT CONTRACTOR	
OP52	The Project will carry out annual maintenance operations until any new tree planting for off-setting purposes has established
OP51	Follow-up monitoring to record survival of planted or re-planted trees for off-setting purposes will be undertaken until sustainable growth is achieved.

During construction and until the end of the CONTRACT WARRANTY period CONTRACTOR shall be responsible for monitoring erosion and vegetative cover in accordance with the parameters and frequencies identified in the Reinstatement Specification. CONTRACTOR shall maintain the standard of reinstatement, taking all

corrective action as necessary (within the timeframe specified in the Reinstatement Specification) to ensure that the stated erosion class (Section 7.4.2.3) and vegetative cover targets (Section 7.4.4) are met.

The checklist below provides a guide to the reinstatement issues that need to be monitored. CONTRACTOR shall consider this list in development of the Reinstatement Implementation Plan to detail reinstatement monitoring requirements. It should be noted however that the list is a guide only and that further inspection and audit points will be developed as necessary.

- No risk of the depth of cover above the pipeline being reduced
- Very low risk of off-site pollution and sedimentation
- Low risk of damage to seeding/biorestoration by washing out of seeds and plants
- Continuous networks of channels over the slopes prevented, ensuring that the depth of material above the pipe is not reduced
- Bed and banks of each watercourse restored in line with pre-approved method statement packages, as documented by sign off
- Number of sediment control measure or device failures that repair work has not started on within 24 hours of inspection or notification
- Number of non-compliances with top soil management requirements in Reinstatement Plan
- Stripping of topsoil to the required depth, and over the required area of land
- Appropriate storage and handling of topsoil
- Compaction of backfilled material
- Provision and maintenance of suitable sediment interception devices
- Disposal of trench water so as to prevent erosion and sedimentation
- Provision and maintenance of suitable permanent erosion control devices
- Success of seeding establishment
- Landowner satisfaction with reinstatement, in agricultural/developed areas
- At river crossing locations, return of the river bed and banks to their pre-construction condition and contours
- Minimal landscape impacts after reinstatement
- Prevention or minimisation of disturbance to old landfills and contaminated land.

8 ECOLOGICAL MANAGEMENT PLAN

8.1 Scope

The scope of this management plan relates specifically to the following ecological management issues:

- Training
- Minimising habitat disturbance
- Preconstruction ecological surveys and translocation of flora and fauna
- Habitat and species protection.

8.2 HGA Standards and Practice

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered has been described below.

This plan has taken into consideration IFC's Performance Standard 6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources, and its accompanying guidance note.

Operators constructing similar projects to the SCPX Project generally adopt the following good practices to achieve sustainable management and use of resources:

- Projects preferentially use brown-field sites and minimise the footprint of all permanent and temporary facilities and access roads by:
    - Sharing with other operators in the area where this can reduce the cumulative footprint (e.g. shared roads, pipeline right-of-ways)
    - Using directional drilling, tunnelling etc in sensitive areas where conventional construction may result in permanent damage to plant or animal communities
    - Considering the offset of losses through the creation of comparable habitats or compensation to directly impacted users.
- Projects minimise any major, long-term change in land or water use or modification of a habitat that substantially reduces the habitat's ability to maintain viable population of its native species, and shall identify opportunities to enhance habitat and protect and conserve biodiversity
- Projects avoid significantly changing land or water use or modifying a habitat in a way that substantially reduces its ability to maintain viable population of its native species, unless there are no technically and financially feasible alternatives and any conversion or degradation is appropriately mitigated
- Projects use pesticides only as a last resort and only after alternative pest control methods have been considered, and in that case they select products that are low in human toxicity and are the least environmentally harmful type that are known to be effective against the target species, but have minimal effects on non-target species and the environment
- Projects do not intentionally introduce any new alien species unless it has been risk assessed in the ESIA as having a low risk of invasive behaviour and will exercise diligence to prevent accidental or unintended introductions.

In addition, the IPLOCA guidance (Vol.1, Appendix 6.3) states:

- Habitat disturbance and soil erosion can be mitigated by appropriate soil handling techniques during construction; limiting the amount of topsoil stripped to the absolute minimum required, and for as briefly as possible. In addition regular watering of stripped topsoil areas can help reduce dust generation and surface wind erosion, as can limiting traffic and speed of traffic on the pipeline spread. Appropriate storage of stripped and excavated soil, and limiting the gradients of slopes/trench sides during construction and timing construction works to avoid the wettest times of the year are also important considerations
- The spread of invasive or alien species and contaminated soils along pipeline routes can be mitigated by appropriate weed control measures, limiting vehicle movements and appropriate separate soil storage.

8.3 Roles and Responsibilities

COMPANY shall employ a specialist ECOLOGICAL MANAGEMENT CONTRACTOR who will be responsible for the activities listed in Section 8.3.3 below. References to CONTRACTOR in this plan refer to all main construction CONTRACTORs other than the ECOLOGICAL MANAGEMENT CONTRACTOR.

8.3.1 Company

COMPANY responsibilities are as detailed in Section 5 of this ESMMP.

8.3.2 Contractor

CONTRACTOR shall be responsible for:

- Developing an Ecological Management Implementation Plan that meets the requirements of this plan (as it relates to CONTRACTOR's scope of work)
- Carrying out the prescribed tasks listed in Table 8-1
- Adhering to and implementing the mitigation measures as determined by ECOLOGICAL MANAGEMENT CONTRACTOR'S pre-construction ecological survey as communicated through COMPANY
- Leading all Pre-Entry surveys as required in Section 7.4.2.1
- Giving a minimum of 30 days' notice to the ECOLOGICAL MANAGEMENT CONTRACTOR prior to entry into an area for construction to allow pre-construction and pre-clearance/vegetation cutting surveys to be completed
- Providing labour, equipment, HSSE and site supervision to pre-clearance surveys (Table 8-2)
- Providing labour, equipment and materials for relocation of wildlife/livestock from the open trench (in a humane manner) to an area of suitable habitat
- Facilitating biorestoration activities as carried out by ECOLOGICAL MANAGEMENT CONTRACTOR e.g. by allowing bulbs to be planted in advance of securing erosion control matting as communicated through COMPANY.

8.3.3 Ecological Management Contractor

ECOLOGICAL MANAGEMENT CONTRACTOR shall be responsible for:

- Developing an Ecological Management Implementation Plan that meets the requirements of this plan (as it relates to ECOLOGICAL MANAGEMENT CONTRACTOR's scope of work)
- Definition of the procedures, protocols and method statements by which the pre-construction surveys, translocation and biorestoration measures will be implemented
- Carrying out the prescribed technical tasks listed in Table 8-1

- Ensuring that the ecological management procedures established in the Ecological Management Implementation Plan are complied with
- Undertaking pre-construction ecological surveys
- Undertaking an inventory of all trees to be removed during construction
- Monitoring and verification of activities in accordance with the monitoring and verification requirements as applicable
- Record keeping including weekly updates and monthly reports identifying sensitive species and habitats
- Marking sensitive plants for avoidance, translocation or protection before construction
- Translocation of floral species as identified in the SCPX ESIA with assistance from CONTRACTOR who will provide the equipment and labour
- Undertake translocation of fauna to suitable habitat (in a humane manner) during pre-construction phase of work and providing specialist advice and assistance to the CONTRACTOR during construction phase
- Propagation of species as identified in the SCPX ESIA (if required)
- Collection of seeds from native flora for use during reinstatement
- Managing biorestoration of all Project areas
- Post-construction biorestoration monitoring.

8.3.4 Summary of Technical Responsibilities

The term 'execution' in the table below refers to the main party responsible for carrying out the work required for that particular key activity. The term 'interface' means there is an action or task required to be completed by another party to allow the main execution party to carry out their activity.

Table 8-1: Summary of Technical Tasks for Ecological Management

Key Issue/Activity	CONTRACTOR	ECOLOGICAL MANAGEMENT CONTRACTOR	COMPANY	Relevant Plan
General ecological management commitments	Execution		Monitoring and audit	Ecological MP
Provision of awareness training for the workforce	Execution		Monitoring and audit	Ecological MP
Preconstruction Ecological Surveys	Attendance and Implementation of Survey Results	Execution	Monitoring and audit	Ecological MP
Immediate preconstruction/pre-vegetation cutting checks for protected animal species and relocation from within the ROW and working areas, if needed	Interface: Notification of start of clearing and grading (minimum 48 hours notice required)	Execution - Immediately (within 48hrs) prior to construction clearing and grading to verify absence of sensitive fauna species. Fauna species moved where applicable or encourage to move to adjacent similar habitats	Monitoring and audit	Ecological MP
Translocation of fauna - preconstruction	Interface: Notification of planned entry to Ecological Management Contractor	Execution: To be completed prior to CONTRACTOR entry to site	Monitoring and audit	Ecological MP

Key Issue/Activity	CONTRACTOR	ECOLOGICAL MANAGEMENT CONTRACTOR	COMPANY	Relevant Plan
Vegetation cutting of uncultivated land where topsoil planned to be stripped during the breeding season	Execution	Interface – supervision of works and pre-cutting checks for protected fauna	Monitoring and audit	Ecological MP
Tree inventory	Interface: Notification of start of clearing and grading	Execution – detailed tree inventory included Red Data Book species	Monitoring and audit	Ecological MP
Translocation of sensitive plant species - pre-construction	Execution: Notification of planned entry to Ecological Management Contractor	Execution: To be completed prior to CONTRACTOR entry to site.	Monitoring and audit	Ecological MP
Translocation of fauna - construction from trench/working areas	Execution: Translocation of fauna from trench/working areas	Interface - specialist advice and assistance	Monitoring and audit	Ecological MP
Propagation of specific sensitive plant species (if required)		Execution	Monitoring and audit	Ecological MP
Collection and storing of seed (non-commercially available) for seeding and biorestoration	Interface: Notification of seeding schedule	Execution	Monitoring and audit	Ecological MP
Procurement and storage of commercially available seed	Execution	Specification of seed	Approves seed specification Monitoring and audit	Reinstatement MP/ Ecological MP
Seeding of all non-agricultural areas (ROW and temporary areas)	Execution during construction (seeding, fertiliser application; irrigation etc)	Specification of seed mix and timing; Fertiliser specification	Monitoring and auditing	Reinstatement MP/ Ecological MP
Biorestoration of natural/semi-natural habitats in temporary works areas	Interface: Notification of reinstatement schedule; Facilitate biorestoration measures e.g. holes in jute matting	Execution	Monitoring and auditing	Ecological MP/
Monitoring erosion control Seeding Success, Corrective Actions and Performance Reporting	Execution (During Construction and CONTRACT WARRANTY period)	Monitoring during CONTRACT WARRANTY period; Execution after CONTRACT WARRANTY period	Monitoring and auditing	Reinstatement MP/Ecological MP
Biorestoration monitoring, corrective actions and reporting		Execution	Monitoring and auditing	Ecological MP

8.4 Impact Avoidance and Mitigation

ECOLOGICAL MANAGEMENT CONTRACTOR AND CONTRACTOR shall implement the commitments as outlined below.

A summary of all commitments related to ecological management that have potential timing or seasonal constraints is included in Appendix F. This table should be consulted to identify activities that need to be carried out at a specific time of year, or periods when activities cannot be completed without COMPANY approval of a deviation.

8.4.1 Training

The SCPX ESIA has committed to including an understanding of ecological sensitivities in induction training.

With respect to ecology, CONTRACTOR shall ensure that all personnel understand:

- The ecological sensitivities of the pipeline sections, facility sites and access roads
- The potential ecological impacts of the Project, the mitigation measures that have been adopted to address those impacts and how and where to apply these measures
- Identification of the main sensitive species[3] that could be encountered in the works areas, e.g. spur-thighed tortoise
- The sensitivity of wildlife to physical disturbance and noise
- The need to avoid encroachment on habitats outside the demarcated work areas and approved access routes
- The need to protect mature trees from physical damage to their trunks, roots or crown
- The need to report any incident involving the accidental injury or death of fauna
- The risks of attack from animals that present a threat to human safety.

CONTRACTOR shall arrange more detailed training on ecological management issues for Managers and Supervisors with specific responsibilities in this area or areas with work with potential for significant ecological impact. The information gained by supervisors during training shall be cascaded to the rest of the work team, including labourers and general operatives, by routine toolbox talks that include updates on specific local issues such as seasonal constraints and the recognition of rare and protected species.

Site-specific method statements will address competency of staff for flora and fauna species identification and any additional training for staff required.

8.4.2 Pre-construction Planning

8.4.2.1 Planning and site preparation

Introduction
This section describes the actions that need to be taken by the CONTRACTOR and the ECOLOGICAL MANAGEMENT CONTRACTOR in the planning stage to avoid or mitigate potential ecological impacts. These actions are required because the ROW passes through some habitats that are especially sensitive to impacts, and there are some important wildlife species that occur on the route and in the surrounding habitat that could be affected by works. The key sensitivities potentially encountered on the route are:

- Habitats sensitive to soil compaction and slow recovery of vegetation cover (typically in the eastern part of the route in discrete sections between KP0 and KP157.1)
- Habitats with high plant species-richness sensitive to slow recovery of species-diversity (typically in the western part of the route in discrete sections between KP321 and KP390, where the topsoil is very shallow), potentially supporting RDB plant species
- RDB plant species known to occur on the ROW (*Iris camillae*) or potentially occurring there (there is suitable habitat for *Iris acutiloba* between KP0 and KP35)
- Fish in rivers (including some RDB and potentially some IUCN Red List species), particularly vulnerable during spawning – typically March to July depending on seasonality

[3] Sensitive species are defined here as any species listed on the Azerbaijan Red Data Book and / or in the IUCN Red List of threat categories above (but not including) Least Concern.

- River-bank-nesting fauna (e.g. Otter (*Lutra lutra*), particularly vulnerable in the breeding season, which is typically April to July depending on seasonality
- Reptiles and amphibians associated with rivers and streams (including some RDB and IUCN Red List species), which are particularly vulnerable when breeding (typically April to July) and hibernating (typically October to March)
- The Spur-Thighed Tortoise (*Testudo graeca*), which occurs widely along the route
- Ground-nesting birds, mostly comprising common species but with low potential for *Francolinus francolinus* (Black Francolin) –RDB, and wintering birds such as *Tetrax tetrax* (Little Bustard) – RDB, IUCN NT.

COMPANY will need to appoint a Project Ecologist to ensure that these sensitivities are taken account of during their works.

The avoidance and mitigation measures need to be applied at all stages of the project and within each stage, the mitigation commitments are presented in a consistent order relating to the aspect of the environment to which they refer i.e.:

1. Planning and Site Preparation
2. Pre-construction
3. Construction
4. Reinstatement and Operations
5. Verification and Monitoring.

Table 8-4 in Section 8.4.2.4 provides a summary of the mitigations required at these key stages of the project, and further detail on each stage is provided in the following sections.

CONTRACTOR shall provide the following equipment and labour in support of the pre-construction surveys as described in Table 8-2 below.

Table 8-2: CONTRACTOR Support Requirements for Pre-Construction Vegetation Clearance and Cutting Surveys

Location	Labour	Plant/Equipment
Identified from pre-construction survey	ECOLOGICAL MANAGEMENT CONTRACTOR	Paint; marker poles/tape or similar to mark sensitive features to be retained
Identified from pre-construction survey	CONTRACTOR	Tractor-mounted flail or disc-cutting equipment to bring vegetation down to around 5cm above ground. Mounted on a tractor with low axle load and low contact pressure – consider using 4WD or tracked vehicles
Identified from pre-construction survey	CONTRACTOR	Hand tools such as brush-cutters, strimmers and chainsaws for clearing larger shrubs and small trees (*Tamarix*) e.g. at river crossings

Minimising ecological impacts through planning and site preparation

The SCPX ESIA has committed to carrying out pre-construction ecological surveys that shall be executed by the ECOLOGICAL MANAGEMENT CONTRACTOR. The following commitment is specific to trees and there are further commitments to vegetation in other sections of this document.

ECOLOGICAL MANAGEMENT CONTRACTOR shall implement the commitment outlined below.

17-08	Compensation planting will be based on the number of trees to be removed. A re-planting ratio will be developed which will be species and region specific

ECOLOGICAL MANAGEMENT CONTRACTOR shall develop an Ecological Survey Plan that gives details of the surveys to be carried out (e.g. flora, fauna and waterways) including the areas to be surveyed, the survey methods to be employed and how the survey findings will be reported.

ECOLOGICAL MANAGEMENT CONTRACTOR, in coordination with CONTRACTOR, shall undertake staged, progressive pre-construction ecological surveys at all sensitive areas identified in the ESIA, taking account of seasonal constraints (e.g. migration patterns, breeding seasons and spawning seasons) when planning the surveys to:

- Identify ecological resources and dynamics that may be affected by construction work in the ROW or access roads or at the facility sites taking account of seasonal constraints, and compile a comprehensive photographic record including key habitats or topographical features of ecological significance (e.g. river crossings, woodlands, forests, meadows, gullies, canyons, slopes, outcrops, eroded terrain) prior to vegetation clearance, topsoil stripping, grading, cutting and other major earthworks
- Confirm the presence of floral or faunal species that may require translocation and any protection status (e.g. red book species)
- Identify the presence of floral species to be preserved by avoidance
- Confirm or identify seasonal constraints on work activities
- Facilitate the reinstatement of a similar plant community to that existing prior to construction and inform the reinstatement seed specification
- Revise the location specific commitments or propose additional mitigation measures as necessary.

At least 60 days before construction starts, ECOLOGICAL MANAGEMENT CONTRACTOR shall submit a pre-construction survey report to COMPANY on mitigations in sensitive areas that include:

- Minimisation of tree felling and scrub clearance
- Reduction of working width
- Seasonal restrictions
- Translocation of species or turfs
- The provision of fish passages
- Measures to minimise the impacts of heavy machinery (e.g. moveable equipment mats or plates)
- Close supervision by field ecologists throughout the construction and reinstatement period.

COMPANY shall communicate results of the pre-construction survey and any permit conditions and revised or additional mitigations, including any need to implement a seasonal constraint within a defined area (work shall be avoided in a pre-defined area as instructed by COMPANY), to CONTRACTOR. CONTRACTOR shall implement all mitigation measures as they relate to CONTRACTOR's scope of work.

Before construction starts ECOLOGICAL MANAGEMENT CONTRACTOR, with the presence and assistance of CONTRACTOR shall:

- Mark areas to be cleared and to be used as storage areas, such that plant cover is not excessively eliminated in sensitive areas

- Mark the limits of all areas to be cleared to ensure that clearance does not take place outside designated areas
- Mark and flag any sensitive plant situated immediately adjacent to or on the edge of the ROW before vegetation clearing and tree felling, topsoil strip and other earthmoving activities so that plant cover and other habitat elements (such as rocks) are not disturbed outside of approved work areas by clearing and grading or stockpiling of materials
- Existing third-party services and sensitive receptors that need to be avoided during construction (e.g. cultural heritage sites, or specific trees that are to be retained) will be marked
- Clearly mark any trees or sensitive flora within the ROW or construction areas that may be avoided as described above.

Before construction starts CONTRACTOR shall:

- Train personnel involved in clearing and grading activities about the need to protect sensitive plant species
- Place signs with environmental protection information in areas immediately adjacent to the ROW where sensitive flora has been identified during the Preconstruction Survey.

Ecological impacts can be minimised by keeping the works area as small as possible and avoiding works in sensitive areas.

CONTRACTOR's Ecological Management Implementation Plan shall include proposals to maintain and operate vehicles and machinery so that sensitive areas, where the potential for impact exists, are not disturbed by high levels of noise.

In order to implement the ecological mitigation measures, the ECOLOGICAL MANAGEMENT CONTRACTOR's Ecological Management Implementation Plan will include Site Specific Ecological Management Plans.

ECOLOGICAL MANAGEMENT CONTRACTOR shall prepare Site Specific Ecological Management Plans, with requirements which the CONTRACTOR shall include within site-specific method statements, which shall be agreed with the COMPANY prior to construction, to meet the commitments below:

19-10	The Company will prepare Site Specific Ecological Management Plans for priority areas. Contractor will incorporate the requirements of these plans into site-specific method statements.

This will include an Ecological Survey Plan that gives details of the surveys to be carried out including the areas to be surveyed, the survey methods to be employed and how the survey findings will be reported including:

- A pre-construction survey for *Iris acutiloba* on the ROW between KP0 and KP35;
- A pre-construction survey for *Iris camillae* and other RDB plant species in sections of the ROW identified in Table 8-3
- A pre-construction habitat assessment at HDD pit and micro-tunnel locations.

The Site Specific Ecological Management Plans will also be included method statements for the following activities:

- Assessing fish spawning habitat on open-cut river crossings if crossed during the spawning season
- Pre-clearance checks of terrestrial habitats on the ROW prior to vegetation clearance and topsoil stripping to search for important animal species and detailed

methods for their removal from the ROW including consideration of seasonal behaviour and requirements
- Pre-clearance checks of river bank habitat prior to vegetation clearance and topsoil stripping to search for important animal species and detailed methods for their removal from the ROW including consideration of seasonal behaviour and requirements
- Method statements for crossing sensitive/valuable areas of habitat.

The method statement for pre-clearance checks for important animal species will include principles and a plan for the translocation of Spur-thighed Tortoise. The plan will consider aspects that will affect the likely success of moving this species, such as avoiding moving animals during very high temperatures (or moving them to shade and providing water prior to release), and providing secure locations for animals moved during hibernation to avoid rousing them from torpor.

Movement of tortoises and nesting or hibernating animals identified by the ecologist should be carried out using suitable, secure and species appropriate containers (which may need to be temperature or light controlled). Suitable receiving habitat should be identified for the release site at least 50m away from the working areas.

In support of translocation, ECOLOGICAL MANAGEMENT CONTRACTOR's Site Specific Ecological Management Plans for pre-clearance checks of vegetation shall include a statement on:

- The proposed approach to the identification, trapping, capture, handling and relocation of amphibians and reptiles and other smaller mammals associated with site clearance activities
- The identification of safe zones for release of the translocated animals before they are captured, that are similar to the habitats from which the individuals were removed
- Methods of capture (e.g. hand, net, noose, traps or snake hook) that will not result in harm to the fauna
- How, and for how long, animals will be held and transported before release into safe zones.

For example, if *Testudo graeca* (spur-thighed tortoise) is found within the working areas, individuals will be moved to a safe distance (50m+) from the works by the Project ecologist. Any eggs or hatchlings will be placed in a box of sand and transferred by the Project ecologist to suitable nearby habitat where a nest will be created.

ECOLOGICAL MANAGEMENT CONTRACTOR shall keep a record of any plants or animals translocated.

Marking out sensitive receptors for avoidance

During pre-construction surveys, sensitive flora areas and mature trees will be demarcated by ECOLOGICAL MANAGEMENT CONTRACTOR for avoidance where possible as agreed with COMPANY.

Ecological impacts can be minimised by keeping the works area as small as possible and avoiding works in sensitive areas.

COMPANY will identify sensitive areas and protected areas within the Construction Constraints Schedule (by reference to the ESIA and accompanying constraints maps). Further updates to the constraint schedule will be provided and sensitive areas will be identified on the 'Approved for Construction' alignment sheets. Sensitive areas may be further defined during the pre-construction ecological surveys.

COMPANY has incorporated a narrowing of the working width at certain areas into the Project design to reduce permanent ecological impacts. CONTRACTOR shall at a minimum comply with working widths as specified on the alignment sheets to reduce ecological impacts.

CONTRACTOR shall plan facilities and work areas to minimise the area to be cleared to that strictly necessary for the safe construction and operation of the Project. In sensitive areas, CONTRACTOR shall consider the extent to which the working width/area and the width of any necessary access roads can be reduced without compromising safety.

To facilitate the physical avoidance of sensitive areas, CONTRACTOR shall clearly delineate the ROW, access road ROW and facility boundaries in accordance with the precise route alignment and site plans where the working width passes through or adjacent to such areas. Notices and signs shall be erected and maintained by CONTRACTOR to indicate the location of sensitive areas (e.g. watercourses, ecologically sensitive and protected areas). Workers shall be made aware of the location of sensitive habitat and species in the vicinity of work camps or the right-of-way and facility construction sites, and unnecessary access shall not be permitted.

Delineation in all areas, including sensitive areas shall take the form of:

- Staking/pegging out of agricultural and pasture land and meadow
- Taping of forested and scrub areas.

Should CONTRACTOR require additional access routes these shall also seek to avoid sensitive areas, minimise erosion and comply with the requirements of the other Management Plans, including the Land Management Plan.

During pre-construction surveys, sensitive flora areas and mature trees will be demarcated by ECOLOGICAL MANAGEMENT CONTRACTOR for avoidance where possible as agreed with COMPANY.

D5-045	Existing third-party services and sensitive receptors that need to be avoided during construction (e.g. cultural heritage sites, or specific trees that are to be retained) will be marked.

8.4.2.2 Habitats

Method statements for crossing sensitive habitats

Some sections of the route have been identified as having increased sensitivity, and additional precautions will be required here. These are listed in the table below, along with a brief description of the reason for their increased sensitivity. The location and extent of these sections has been determined through desktop assessment and field survey.

Table 8-3: Sections of the ROW with Increased Sensitivity

Start KP	End KP	Reason for Increased Sensitivity
0	3.2	Desert habitats with soils very prone to compaction
5	14	
5	24	Desert habitats with soils very prone to compaction and potential cumulative impacts in combination with slow recovery of vegetation on the adjacent BTC/SCP ROW
85	96	
138	158.1	
321	322.9	Species-rich vegetation where recovery of species-diversity

335.4	336.4	may be slow in the absence of additional mitigation
342	346	
346.1	351	
359	370	
383	390	

The reasons for slow recovery in these sections is probably largely due to the harsh environmental conditions (high winds and temperature variations, fine-textured soils prone to compaction). The method statement for these sections should take account of experience gained from BTC to implement additional precautions to facilitate vegetation recovery in these sections.

Prior to construction, the ECOLOGICAL MANAGEMENT CONTRACTOR will prepare a method statement for working in these sensitive habitats and any others that are identified during pre-construction surveys, to include precautions to avoid soil compaction and ensure maximum possible recovery of species-diversity. This will be developed in consultation with the CONTRACTOR and the roles and responsibilities of each will be clearly defined.

8.4.2.3 Fauna

Pre-clearance of vegetation

The ECOLOGICAL MANAGEMENT CONTRACTOR shall conduct faunal pre-clearance surveys (inspection and translocation if required) within areas with sensitive species and habitats (as identified by the Pre-Construction Survey Report) not more than 48 hours before entry to each section, to verify that animals belonging to protected species are absent from the construction area. CONTRACTOR shall notify ECOLOGICAL MANAGEMENT CONTRACTOR 48 hours minimum in advance of his intent to enter each section for clearance.

The route is potentially used by a range of animal species that may nest, forage or commute on or across it. This includes some RDB species that could be breeding on the route, such as the Spur-thighed Tortoise (*Testudo graeca*) – IUCN VU, RDB, which lays eggs underground. Animals using the route are more vulnerable in the breeding season, when they are less able to move away from sources of disturbance. They are most likely to be encountered in un-cultivated[4] sections of the route (*i.e.* the natural habitats where the soils have not recently been ploughed) where there is good cover from predators amongst vegetation. Therefore, removing the vegetation would discourage animals from using the route in advance of topsoil stripping, and thus avoid or minimise the risk of negative impacts on breeding animals.

This only needs to be undertaken on un-cultivated sections of the route that will be worked on during the breeding season (April to July inclusive).

The PROJECT will undertake the following commitment:

19-12a	The actual location and extent of cultivated and un-cultivated land on the ROW and working areas will be determined during a pre-construction survey. The survey will be completed in the year prior to construction.

[4] For the purposes of this ESMMP, un-cultivated sections refer to land that has not been tilled for agriculture i.e. it includes grazed land but excludes cropped land where the soil is cultivated annually and where disturbance is such that the presence of sensitive species is unlikely.

CONTRACTOR shall undertake the following commitments:

19-12b	The vegetation in areas of uncultivated land where topsoil stripping will occur between April and July (inclusive) will be cut close to ground level in the period between August and March prior to stripping, to discourage animals from nesting here.

Timing of works – river crossings
Some ecological receptors are more sensitive at certain times of the year, therefore some works will need to be planned and timed to occur at the time when they are least likely to have an impact. This applies specifically to nine rivers that will be open-cut and which potentially support IUCN Red List or Azerbaijan Red Data Book fish species during the spawning season: the Kurekchay, Ganjachay, Goshgarachay, Shamkirchay, Zeyamchay, Asrikchay, Tovuzchay, Hasansu and Kurudere. It is particularly important to avoid direct impacts (i.e. habitat disturbance in the channel) or increases in suspended sediments in the water in these rivers during the spawning season.

The fish-spawning season typically occurs between April and July, with peak spawning activity most likely to occur between May and June (depending on seasonality). Spawning activity is likely to tail off towards the end of the season, as water levels drop and the rivers begin to dry up. Therefore, the most sensitive period for construction of open cut river crossings in relation to spawning fish is between April and July.

CONTRACTOR will programme works to avoid construction of these rivers during April to July (inclusive).

X7-30	Works at the Kurekchay, Ganjachay, Goshgarachay, Shamkirchay, Zeyamchay, Asrikchay, Tovuzchay, Hasansu and Kurudere river crossings will be planned to occur outside the fish spawning season. If work must be undertaken within the fish spawning season (of any IUCN/ red data book species present nominally April to July, the exact timing of which will be determined following a pre-construction survey) it will only be done so following a site assessment and approval by the Company

If it becomes necessary to construct a river crossing on one of the nine rivers listed above during the spawning season, then the COMPANY's Project Ecologist should undertake an assessment of the watercourse and the level of spawning activity.

This should include:

- An assessment of the flow and weather conditions to determine if spawning is likely to be occurring at the precise timing of the crossing; and
- An assessment of the habitat at the river crossing and a stretch of the river 25m upstream and 150m downstream.

This may determine that fish spawning is unlikely to occur at the crossing point during the construction period, for example if the timing is late in the season and the river is dry, or if the timing is early in the season and the weather has been particularly unfavourable. In which case the COMPANY's Project Ecologist can recommend that construction may proceed.

8.4.2.4 Planning summary

Appendix F summarises all of the commitments that have potential timing or seasonal constraints. This table should be consulted to identify activities that need to be carried out at a specific time of year, or periods when activities cannot be completed without COMPANY approval of a deviation.

NOTE: Annual variations in seasonal constraints will be verified by pre construction survey and communicated to the CONTRACTOR.

8.4.3 Pre-construction Surveys and Works

It will be necessary for some survey works to be carried out prior to construction to assess and avoid potential impacts on important habitats or species. There is one known population of a Red Data Book Plant species on the ROW (*Iris camillae*), and it will be necessary to carry out a translocation of this species and a survey to ensure there are no other RDB plants on the ROW. Pre-clearance checks will also be required to minimise impacts on terrestrial fauna. These requirements will be incorporated into an over-arching 'ecological management plan', which is described in more detail below. The commitments below are divided up into those that need to be carried out in the year prior to construction, and those that need to be carried out immediately prior to construction.

8.4.3.1 One-year pre-construction

Pre-construction surveys of camps and pipe storage locations

Of the current camp and pipe storage locations, only Mugan camp option 3 is located in habitat that may be of high sensitivity. However, it is possible that the locations of the camp and pipe storage areas will change with the recent Phase 2 surveys carried out for new camp and additional storage area locations, and so prior to construction, the ECOLOGICAL MANAGEMENT CONTRACTOR will assess the ecological value and sensitivity of the habitats at the proposed camp and pipe storage locations.

17-18	A pre-construction survey between April and May inclusive will be undertaken at pipe storage and camp locations and any nearby watercourses that may be impacted, of the plants and animals present on site and identify any need for site-specific mitigation measures.

CONTRACTOR to aim to ensure that the buffer zone between the Saloghlu Pipe Storage Area boundary and the Garayazi State Nature Reserve is not accessed by Project personnel, plant and equipment.

X7-35 Saloghlu Pipe Storage Area	At the Saloghlu Pipe Storage Area, a buffer zone between the site and the protected area will be determined by COMPANY.

Habitats

Temporary works areas at non-open-cut river crossings

The location of temporary works areas for the non-open-cut river crossings is not yet defined. Once determined, the temporary works areas shall be surveyed to assess the ecological value of the habitats there. A number of commitments are given further in this section relating to pre-construction surveys for both plant and animal species.

Survey to confirm the extent of uncultivated land

The mitigations in this ESMMP relating to un-cultivated land are based on the current route alignment and a combination of desktop assessment and field survey of habitats. The precise extent of uncultivated and cultivated land will be confirmed in the year prior to construction.

19-12a	The actual location and extent of cultivated and un-cultivated land on the ROW and working areas will be determined during a pre-construction survey. The survey will be completed in the year prior to construction.

Pre-construction cutting of vegetation on uncultivated land where topsoil stripping is planned to occur in the breeding season

The pre-construction cutting of small shrubs to discourage wildlife nesting in semi-desert should consider the use of a tractor-mounted flail or disc-cutting equipment to bring vegetation down to around 5cm above ground (so as not to completely kill the plants, but to

remove cover for animals). Mounted on a tractor with low axle load and low contact pressure to avoid compaction, consideration should be given to using 4WD or tracked vehicles. The clearing of larger shrubs and small trees (*Tamarix*) e.g. at river crossings will need to be completed using hand tools such as brush-cutters, strimmers and chainsaws.

Red Data Book plants

Translocation of Iris camillae

Prior to construction, the ECOLOGICAL MANAGEMENT CONTRACTOR shall prepare a plan for the translocation of *Iris camillae* from between KP346 and KP347, where they are known to be present, onto a suitable receptor site off-ROW. This should be prepared and implemented in the year prior to construction, to allow sufficient time for the preparation of a translocation plan and the identification of a suitable receptor site. Based on experience from BTC, it is essential that plants are only moved once, and that they are re-planted into habitat similar to that from which they were removed, to ensure the greatest chance of survival for translocated plants.

Surveys for Red Data Book plants

Several sections of the route from SCPX KP312 onwards have species-rich vegetation and it is possible that there are RDB plant species growing here, which could include *Iris camillae* (which occurs on the proposed route between KP346 and KP347) or other RDB plant species. Prior to construction, the ECOLOGICAL MANAGEMENT CONTRACTOR shall undertake a survey for *Iris camillae* and other RDB species between the following KP locations[5] (Table 8-4) These KP locations have been identified from desktop review and field surveys, and therefore the precise survey locations should be determined in the field.

Table 8-4: Potential Locations of RDB Plant Species Requiring a Pre-Construction Survey

Start KP	End KP
312	314
321	322.9
335.4	336.4
342	346
346.1	351
359	370
378	380
383	390

The survey will be completed during the optimum time for growth and flowering of *Iris camillae* and other RDB plant species to give the greatest chance of seeing them if they are present. The timing is dependent on weather and seasonality, but generally the best time is between late April and mid-May. Ideally this survey should be undertaken in the spring preceding construction (e.g. if construction is scheduled for 2014, the survey should be undertaken in spring 2013). As the survey may encounter a range of plant species, the surveyor appointed to conduct it must be a qualified and experienced botanist familiar with the species that might be encountered.

If any RDB plants are found on the ROW or working areas during the survey, they will need to be translocated in advance of works commencing. Based on experience from BTC, it is essential that plants are only moved once, and that they are re-planted into habitat similar

[5] KP start and end locations approximate to the location and extent of species-rich habitats on the ROW. Survey design and execution shall take account of any subsequent variations, such as the cultivation of any of these sections, and amend the plan accordingly.

to that from which they were removed, to ensure the greatest chance of survival for translocated plants.

ECOLOGICAL MANAGEMENT CONTRACTOR shall undertake the following commitments:

X7-23	A Site specific ecological management plan to address Iris camillae on the ROW will be developed. This will be completed when the plants are visible i.e. during or after the flowering season between April and May.
X7-28a	Preconstruction surveys will be carried out by the Company at the most appropriate time of year (generally April-May depending on seasonality) and will be undertaken at the defined locations to seek to establish the presence of any RDB plant species.
X7-28b	A Site specific ecological management plan to address RDB plants are identified on the ROW or working areas during pre-construction surveys will be developed. This will be undertaken when the plants are visible i.e. during or after the flowering season between April and July, depending on the species.
X7-33a	Between KP321 - KP 322.9, KP335.4 - KP336.4, KP342 - KP346, KP346.1 - KP351, KP359 - KP370 and KP383 - KP390, seed will be collected from similar habitats where and to the extent feasible in the local area and re-sown onto the ROW during reinstatement.
X7-33b	If long-term monitoring shows slow recovery of the ROW between KP321 - KP 322.9, KP335.4 - KP336.4, KP342 - KP346, KP346.1 - KP351, KP359 - KP370 and KP383 - KP390, remedial action will be considered.
X7-37 KP205-250	A preconstruction survey between November and February inclusive will be undertaken at KP205-250 to identify any need for site-specific mitigation measures to reduce potential impact to gazelle during winter migration.

Surveying for Iris acutiloba

There are known populations of the Red Data Book plant species *Iris acutiloba* in the Gobustan area (although not on the SCPX ROW), and there is habitat suitable for this species on the SCPX ROW between KP0 and KP35. The ECOLOGICAL MANAGEMENT CONTRACTOR will carry out a survey of this section of the route to search for *Iris acutiloba*. The survey will be completed during the optimum time for growth and flowering of this species to give the greatest chance of seeing them if they are present. The timing is dependent on weather and seasonality, but generally the best time is between late April and mid-May. Ideally this survey should be undertaken in the spring preceding construction (*e.g.* if construction is scheduled for 2014, the survey should be undertaken in spring 2013), to allow sufficient time for the preparation of a translocation plan and the identification of a suitable receptor site.

If any *Iris acutiloba* plants are found on the ROW or working areas during the survey, they will need to be translocated in advance of works commencing. Based on experience from BTC, it is essential that plants are only moved once, and that they are re-planted into habitat similar to that from which they were removed, to ensure the greatest chance of survival for translocated plants.

CONTRACTOR shall undertake the following commitments:

X7-32	A preconstruction survey (in April or May depending on seasonality) will be carried out by the Company and will seek to identify the presence of *Iris acutiloba* KP0 - KP35 and a site specific ecological management plan will be developed. This will be completed when the plants are visible i.e. during or after the flowering season between April and May.

Fauna

Mitigating for bat roosts

There are several species of bats that could be found along the route, including some RDB species:

- Barbastelle bat (*Barbastella leucomelas*) – pRDB
- Greater Horseshoe Bat (*Rhinolophus ferrumequinum*) – pRDB
- Lesser horseshoe bat (*Rhinolophus hipposideros*) – pRDB
- Botta's Serotine Bat (*Eptesicus battoae*) – pRDB
- Lesser mouse-eared Myotis (*Myotis blythii*) – pRDB.

Bats roost in a variety of structures depending on the time of year (winter roosting requirements differ from summer roosting requirements). The general requirements are for locations sheltered from extremes of weather, out of the reach of predators and where there is a stable temperature. Features that could be encountered along the route where bats might roost include:

- Buildings (particularly those with roof voids)
- Large, old trees with cavities.

If the route crosses any such features (i.e. if buildings or trees will be removed (such as at Dallar Dashbulak) it will be necessary first to carry out surveys to determine if they are used for roosting by bats. In order to allow time for appropriate mitigation to be put in place, any such features should be identified and surveyed in the year prior to construction. The surveys should take two forms:

- Detailed inspection to search for evidence of bats (such as droppings, staining or feeding remains. This can be carried out at any time of year
- If the inspection finds that the feature is suitable for roosting bats, or if there is evidence of roosting, emergence surveys should be carried out. These need to be completed when bats are active – between April and August inclusive.

During evening emergence surveys ecologists visit the site at dusk - a time when the bats are likely to be emerging from their roosts. The surveys are undertaken from approximately half an hour before dusk to one and a half hours after dusk, when bats are likely to be exiting to their roosts. The surveyors stand at locations offering a good view of likely roost exit points, and watch for emerging bats. Bat detectors, recording equipment and sound analysis software are used to identify bats by their echolocation calls. The number of surveys required depends on the size of a roost and the number and species of bats concerned and should be determined by the ecologist. It is best to begin the surveys near the beginning of the season so that additional surveys can be completed if required.

ECOLOGICAL MANAGEMENT CONTRACTOR shall implement the following location-specific commitments:

X7-34	A pre-construction survey will be carried out and if bats are found to be roosting in any structures or trees that will be removed, a mitigation strategy will be designed to try to ensure that bats are protected.

Watercourses

Surveying for bank-nesting species at open cut crossings

There are some IUCN Red List or Azerbaijan Red Data Book animal species that are closely associated with river banks. The majority of main rivers crossed by the route could be used by species that nest or den in the banks. This could include:

- Eurasian Otter (*Lutra lutra*) – NT, RDB (although this species has not been recorded during surveys of the proposed route)
- European Marbled Polecat (*Vormela peregusna*) – VU, RDB

- Ladder Snake (*Elaphe hohenackeri*) pRDB
- Crested Porcupine (*Hystrix indica*) pRDB.

Several other widespread animal species also nest in burrows in river banks, including *Alcedo atthis* (Kingfisher) and *Merops apiaster* (Bee-eaters) and they are similarly vulnerable to disturbance or mortality. Prior to vegetation clearance at river banks, the COMPANY's Project Ecologist will undertake a survey for bank nesting fauna at all open-cut river crossings and any non-open cut where bridges or flume pipe crossings are installed to allow plant and machinery to cross over the river.

If any IUCN Red List or Azerbaijan Red Data Book species are found in the banks of open-cut river crossings that will be crossed during the breeding season (April to July) during the pre-construction surveys, they will be excluded from burrows once breeding has finished, and the habitat will be made unsuitable for their return prior to construction. The Ecological Management Contractor will include a detailed Method Statement for these activities in the Site specific ecological management plan, including details of safe and humane methods of moving any breeding animals, and suitable exclusion zones where required.

ECOLOGICAL MANAGEMENT CONTRACTOR shall implement the following location-specific commitments at all open-cut watercourse crossings and non-open-cut where vehicle crossings installed:

19-13a	A survey will be completed for bank nesting fauna on river crossings programmed to be constructed in April-July (inclusive). The survey will be undertaken between April and September in the year prior to construction. It will search in particular for IUCN and RDB species, which may include: Otter (*Lutra lutra*), European Marbled Polecat (*Vormela peregusna*), Ladder Snake (*Elaphe hohenackeri*), Crested Porcupine (*Hystrix indica*) and hole-nesting birds.
19-13b	If any bank-nesting IUCN or RDB species are found in pre-construction surveys of these watercourses, measures will be taken to aim to prevent inhabitation of the area during construction.

8.4.3.2 *Pre-construction checks*

Fauna

Pre-construction checks for IUCN Red List or Azerbaijan Red Data Book terrestrial fauna on the route

There are a number of terrestrial fauna species aside from *Testudo graeca* that are known to occur on the ROW and in adjacent habitats. Some of these species are rare at a national or international level (see Table 8-5). Of particular sensitivity and vulnerability is the Spur-thighed Tortoise (*Testudo graeca*) – IUCN VU, RDB. The Spur-thighed Tortoise is a widespread species that has been found along most sections of the ROW. It is a slow-moving terrestrial reptile that feeds mostly on vegetation. It generally mates after emerging from hibernation in spring (February – April), after which the female makes a nest in soft earth or burrows in the soil and lays a clutch of eggs. The eggs hatch after 70-100 days, and breeding is generally completed by end of July depending on weather conditions. During the summer it can be found foraging in a wide variety of habitats, and in winter (nominally after October depending on weather) they burrow into soil or underneath debris to hibernate.

Table 8-5: Important terrestrial fauna potentially occurring on the ROW

	Status	Breeding (March to July)	Hibernating (October to February)	Preferred Habitat
Black Francolin (*Francolinus francolinus*)	RDB	Y	-	Open, semi-desert vegetation, nests on the ground
European Marbled Polecat (*Vormela peregusna*)	VU, RDB	Y	Y	Semi-desert areas, close to dense vegetation (*e.g.* Tamarix scrub), breeds and hibernates in burrows
Ladder Snake (*Elaphe hohenackeri*)	pRDB	Y	Y	Riparian vegetation, nests and hibernates at the base of shrubs in dense scrub (*e.g.* Tamarix scrub)
Crested Porcupine (*Hystrix indica*)	pRDB	Y	Y	Dens and winters In burrows close to rivers and in dense scrub
Eastern Spadefoot (*Pelobates syriacus*)	RDB	Y	Y	Breeds in water then migrates away and burrows into loose soil during late summer and winter
Common Toad (*Bufo bufo*)	RDB	Y	Y	Breeds in water then migrates away and hibernates under debris (stones, piles of vegetation etc), can be up to 500 m from breeding sites
Reed Cat (*Felis chaus*)	pRDB	Y	Y	Breeds in dens in sheltered areas near rivers
Wild Field Cat *(Felis sylvestris*)	RDB	Y	Y	Breeds in dens in sheltered areas near rivers

Most of these species are wide-ranging and may breed, forage or hibernate over a wide territorial area. Their breeding and hibernating locations may change from year-to-year, so it is rarely possible to identify precise locations that should be avoided for their protection in advance of commencement of works. It is therefore necessary for the COMPANY'S Project Ecologist to undertake pre-clearance checks of any areas that might be suitable for these species on the ROW immediately prior to vegetation clearance and topsoil stripping are due to commence, and to take suitable action as appropriate depending on the species and the time of year that it is found. The basic principal is that impacts on breeding or nesting species will be avoided wherever practical, and at other times of year species will be moved away from the ROW in sensitive manner, as follows by the COMPANY and ECOLOGICAL MANAGEMENT CONTRACTOR:

19-11a	The Company will check the ROW and any other working area prior to vegetation cutting and topsoil stripping to identify any IUCN Red List or Azerbaijan Red Data Book species.
19-11b	If any IUCN Red List or Azerbaijan Red Data Book species are found on the ROW or other working area outside of the breeding (July to September inclusive), they will be moved a safe distance away from the ROW and released into suitable habitat in accordance with the methods in the Site specific ecological management plans.
19-11c	If any IUCN Red List or Azerbaijan Red Data Book species are found hibernating on the ROW or other working area during the hibernating season (October to March inclusive) they will be moved to a new hibernating site a safe distance from the ROW in accordance with the methods in the Site specific ecological management plans.
19-11d	If any IUCN Red List or Azerbaijan Red Data Book species are found nesting on the ROW or other working area they will be left undisturbed until a Company assessment has been carried out taking into account whether the species can be moved or whether it should remain in place until breeding has been completed and the young have moved away from the nest.

19-11e	The Company will produce a detailed Method Statement for the safe methods of moving any IUCN Red List or Azerbaijan Red Data Book species or other animals that cannot move easily away from the ROW, and suitable exclusion zones where required.

Watercourses

Pre-construction checks for breeding amphibians

Some species of amphibian are associated with all kinds of watercourses and breed in the open water. This includes:

- Eastern Spadefoot Toad (*Pelobates syriacus*) – RDB
- Common Toad (*Bufo bufo*) – RDB.

Amphibians are most likely to be found breeding in still or slow-flowing water, including some of the smaller irrigation channels and field drains crossed by the route. Where any such water bodies are crossed during the breeding season (February to May) the on-site ecologist will check for spawn and move it away from the works area prior to construction.

Other non-Red Data Book amphibians may also be found breeding in watercourses crossed by the route, but as it is difficult in the field to distinguish between the spawn of different species, this mitigation applies to any spawn found during pre-construction checks.

ECOLOGICAL MANAGEMENT CONTRACTOR shall implement the following location-specific commitments:

19-14	All open-cut or watercourse crossings or vehicle crossings constructed between April to July (inclusive) will be checked by the Company for amphibian spawn of suspected red data book species, and if any is found it will be moved to a suitable location upstream.

8.4.4 Construction

8.4.4.1 Introduction

This section describes the actions required to avoid and minimise potential impacts on wildlife during construction. It begins by discussing generic commitments and commitments in relation to terrestrial habitats, then discusses commitments relating to terrestrial fauna, and finally it discusses commitments relating to river crossings.

8.4.4.2 Generic

In order to prevent the spreading of invasive or injurious species, all plant and equipment shipped into country for the works will be checked to ensure it is free from soil and plant material. CONTRACTOR shall document the condition of equipment in a photographic record prior to shipping to the country of use, which shall be made available to COMPANY for auditing purposes on request. CONTRACTOR shall inspect all earth moving equipment to aim to ensure it is free from soil and plant material prior to any cross-border movements.

CONTRACTOR and COMPANY shall meet the following commitment:

18-05	The Contractor shall inspect and wash if required, all plant and equipment prior to shipping to the country of use with the aim of ensuring as far as practicable, it is free from soil and plant material.

8.4.4.3 Habitats

Treating topsoil to prevent the build-up of alien invasive species

Once stripped, topsoil stacks could become colonised by semi-ruderal species such as *Silybum marianum* (Milk Thistle). If left untreated, these species could build up in the seedbank and limit the success of biorestoration. CONTRACTOR will prevent the build-up

of alien invasive species on topsoil stacks, under the guidance of the ECOLOGIST MANAGEMENT CONTRACTOR. Treatment may include hand-pulling, spot-treatment or weed-wiping with a herbicide such as Glyphosate, taking care not to affect desirable species that may be growing in the topsoil stacks or nearby.

Preserving topsoil and retaining shrubs
Habitats between KP0–KP3.2, KP5–KP24, KP85–KP96 and KP138–KP158.1 have been identified as being of increased risk of slow vegetation recovery. The precise location and extent of these habitats has been determined through a combination of desktop and field surveys, and these should be verified in the field. The Method Statement for crossing sensitive habitats (17-13) will examine the practicality of retaining woody species in the topsoil during removal and reinstatement. Woody shrubs (*e.g. Artemisia fragrans* and *Salsola nodulosa*) are an important part of the function of the ecosystem. The above-ground parts provide shelter for smaller plants (particularly for germinating seeds and seedlings) from harsh, drying winds. The roots help to bind the topsoil and improve infiltration of water into the soil. Retaining and replacing them onto the ROW could improve recovery of vegetation, even if all of the woody shrubs removed do not survive in the long term, the physical presence of their remains (i.e. branches and roots) could improve recovery of vegetation.

Subject to this assessment, the CONTRACTOR will dig up individual shrubs or small groups of shrubs, along with soil surrounding the root ball, using a back-actor on a JCB digger or similar during topsoil stripping. These should be stored upright off the ROW, and re-planted onto the ROW during reinstatement. Ideally they will be out of the ground for only a short period and will be alive once they are re-planted. However, if some of the shrubs do not survive, they will still be of value because the topsoil surrounding the rootball will contain a seedbank, and the roots and above-ground parts will still perform some of the ecological functions of live plants.

CONTRACTOR shall implement the following specific commitment:

X7-25a	Due consideration will be given to the preservation of the topsoil structure and seedbank in identified

COMPANY will undertake remedial action, as required if long-term monitoring shows that vegetation is recovering more slowly than expected in spite of the additional precautions. The method statement should outline response variables and thresholds, and prepare a list of potential response interventions. These could include over-seeding with locally-sourced seed, planting of mature plants grown in a nursery from locally sourced seed or remedial action to address soil compaction.

X7-25b	If long-term monitoring of vegetation in identified habitats shows slow recovery, remedial action will be considered.

8.4.4.4 Fauna

Terrestrial species protection
CONTRACTOR shall implement the following commitments that will minimise disturbance or loss of wildlife:

X7-36 Kurdemir Pipe Storage Area Option 1 (Mususlu), Kurdemir Pipe Storage Area Option 2 (Mususlu)	At Kurdemir Pipe Storage Area Options 1 and 2 (Mususlu), any widening of the access track associated with these sites will be planned to take place during the summer or autumn with the aim of avoiding peak periods for wintering birds and breeding amphibians/reptiles/birds. If this is not possible then works will only be done following a site-specific survey and assessment and approval by the Company

Pipeline:

CONTRACTOR shall ensure that only short sections of pipeline trench are open (maximum 10km in any one spread) and that the open trench shall contain mechanisms to aid egress from the trench at a spacing of not less than every 500 m to permit any fauna that may enter the trench to escape.

CONTRACTOR shall erect temporary fences or protective barriers to protect retained trees from accidental damage during construction within and immediately adjacent to ROW and access roads.

CONTRACTOR shall store equipment on-site necessary to remove wildlife if they become trapped in the trench or other working areas.

Capping welded pipe strings

There is a risk that animals could enter un-sealed pipe strings and become trapped. This will be avoided by ensuring that welded pipe strings are capped to prevent animals getting inside.

CONTRACTOR shall undertake the following commitments:

19-04	Welded pipe strings will be capped to prevent entry.

Preventing hunting and fishing by workforce

There is a risk that people employed during construction will hunt for wild animals or fish in nearby rivers, which could have a deleterious effect on local wildlife. CONTRACTOR shall prohibit Project personnel from hunting, fishing and carrying of firearms, buying or selling live wild animals, obtaining or keeping pets at work areas or camp sites. CONTRACTOR shall report third-party hunters found on site to the appropriate authorities. CONTRACTOR's Ecological Management Implementation Plan shall prohibit Project personnel from collecting or gathering and selling wild plants and vegetation from the ROW and other work areas, and from buying wild plants or products made from them from protected plants from local communities.

The COMPANY, CONTRACTOR and the ECOLOGICAL MANAGEMENT CONTRACTOR shall implement the following commitment:

19-05	No hunting, fishing or unauthorised gathering of products (including plants and cultural heritage artefacts) by the workforce will be permitted within the Project footprint.

Leaving gaps in topsoil stacks and pipe string

Topsoil stacks and pipe strings could prevent a barrier to the movement of animals, so gaps will be left in them to allow animals to pass. CONTRACTOR will take steps to ensure that the ROW does not constitute a barrier or risk to terrestrial animals during construction and implement the following commitments:

20-01	Gaps will be left in soil stacks at strategic locations to allow passage of animals and people where the Project considers it safe to do so.
32-08	Gaps will be left in pipe strings where safe to do so and necessary to allow people, wildlife and livestock to cross the ROW.

Minimise time between welding and ditching

An open trench presents a risk to wildlife that could fall in and become trapped, and it also creates a potential barrier to the movement of terrestrial animals. CONTRACTOR shall minimise the time between pipe stringing and backfill in order to reduce the temporary

barrier effect on wild and domestic fauna and any risk of injury caused by falling into the trench.

Sloped ends of trenches
Where animals do fall into an open trench they could become trapped. Therefore, the CONTRACTOR shall ensure that only short sections of pipeline trench are open (maximum 10km in any one spread) and that the ends of the trench are sloped to aid egress from the trench.

Terrestrial species protection
CONTRACTOR shall implement the following commitments that will minimise disturbance or loss of wildlife:

Where animals are found within working areas during construction (after the execution of pre-clearance surveys by the ECOLOGICAL MANAGEMENT CONTRACTOR they shall be moved by a trained and competent CONTRACTOR representative, in a safe manner at least 50m away from the working areas.

CONTRACTOR shall implement the following commitments:

21-02	Each section of open pipeline trench will have sloped ends or other mechanisms to aid egress from the trench.

Checking the trench for wildlife
CONTRACTOR's personnel will inspect the open trench to check whether animals have fallen in and CONTRACTOR's E&S personnel should rescue them, if it can be done safely and relocate to a suitable habitat.

CONTRACTOR's Ecological Management Implementation Plan shall address these issues, and shall ensure that there are sufficient trench crossings to allow the passage of wild animals to implement the following commitment:

21-04	The trench will be checked regularly for wildlife (particularly in sensitive locations).

Camps
CONTRACTOR shall take steps to ensure that construction camps do not have a negative impact on wildlife in the surrounding area. There is a risk that feral cats and dogs will be attracted to camps, which can have a negative impact on local wildlife as the cats and dogs may kill small mammals and reptiles.

CONTRACTOR shall not prevent harmless invertebrates, amphibians, lizards, small mammals or birds from entering in work areas and camps so long as they are not exposed to risks or causing a nuisance. CONTRACTOR shall take lawful means to control infestations, pests and vermin that pose a risk to human health that are consistent with the requirements of the Pollution Prevention Plan.

If any reptile or mammal is found within camp and yard areas where they are at risk or pose a nuisance or hazard, CONTRACTOR's Environmental Manager will be advised and shall determine the appropriate actions to be taken for relocation.

Wildlife Incidents
On receiving an incident report regarding the accidental injury or death of fauna, CONTRACTOR's Environmental Manager will record the circumstances, time, species, size and habitat and determine the appropriate actions to be taken.

Non-native fauna

CONTRACTOR shall take any action necessary to prevent the introduction of non-native fauna into the ROW, work sites and camp facilities.

8.4.4.5 Aquatic environment protection

CONTRACTOR's Ecological Management Implementation Plan shall include proposals to preserve aquatic habitats, minimise diversions, maintain uninterrupted water flow and preserve the landscape in river crossing areas.

Where possible, CONTRACTOR shall construct small river crossings when streams are dry, and where this is not possible, CONTRACTOR shall maintain downstream water flow while the crossing is constructed. If techniques using dams and pumps are used to maintain the water flow, CONTRACTOR shall install meshes upstream and downstream of the works area to prevent the pump from harming fish, fry, shrimps and other aquatic organisms.

CONTRACTOR should cut back vegetation from river banks but shall not use methods that will disturb tree roots and destabilise the banks.

CONTRACTOR shall implement the following location-specific commitments:

X7-21b	Any bed reinforcement at the Kurekchay, Ganjachay, Goshgarachay, Zeyamchay, Asrikchay, Tovuzchay, Hasansu or Kurudere will be planned to occur outside the fish spawning season. If work must be undertaken within the fish spawning season (of any IUCN/red data book species present nominally April to July, the exact timing of which will be determined following a pre-construction survey) it will only be done so following a site assessment and approval by the Company.
D5-078	If water is sourced from rivers or channels no more than 10% of the watercourses' water flow will be extracted at any time.
D5-079	Before extracting water the Project will consider the presence of any IUCN/Red data book fish species particularly during fish spawning season (which normally occurs within the period May to September) and the mitigations such as 10mm fish screens will be determined by a site assessment and approval by the Company.

As part of its pre-construction survey, ECOLOGICAL MANAGEMENT CONTRACTOR shall locate and identify fisheries, fish farms and places where local communities use the river. ECOLOGICAL MANAGEMENT CONTRACTOR shall identify rivers which are important for migrating or breeding fish as part of their pre-construction ecological survey.

CONTRACTOR's Ecological Management Implementation Plan shall include method statements that pay special attention to sediment control measures where a pipeline crosses a river upstream of fisheries, fish farms, places where the river is used by local communities or if the river is important for migrating or breeding fish as identified during the survey referenced above.

Storage of bed and bank materials

Bed and bank materials excavated at river crossings have different ecological properties, and it is important that they are stored and replaced separately.

CONTRACTOR shall undertake the following commitments:

3.23	At watercourses, bank and bed material will be stored separately, away from the active channels and will not be placed where flow or drainage will be obstructed.

Fish catching and transfer around dams

Where dams are installed during river crossings, they could prevent fish from moving along the watercourse. Fish will be caught and transferred around dams. Where possible, CONTRACTOR shall construct river crossings when streams are dry, and where this is not

possible, CONTRACTOR shall maintain downstream water flow while the crossing is constructed. If techniques using dams and pumps are used to maintain the water flow, CONTRACTOR shall install meshes upstream and downstream of the works area to prevent the pump from harming fish, fry, shrimps and other aquatic organisms.

8.4.5 Reinstatement and Operations

8.4.5.1 Habitats

Wetlands

At KP35.6, the existing wetland and reedbeds will be reinstated by the CONTRACTOR in accordance with the site specific ecological management plan (prepared by the ECOLOGICAL MANAGEMENT CONTRACTOR.

Erosion control and seeding

Erosion control seeding of the ROW is crucial to successful biorestoration and ECOLOGICAL MANAGEMENT CONTRACTOR is required to provide technical expertise to facilitate the success of this activity. Seeding onto the ROW and works areas will only occur where it is required for erosion control or where it is part of mitigation for the restoration of sensitive habitats.

ECOLOGICAL MANAGEMENT CONTRACTOR shall produce an Ecological Management Implementation Plan which specifies the seed mix to be used by CONTRACTOR during seeding. The choice of species to be used for seeding shall be proposed by ECOLOGICAL MANAGEMENT CONTRACTOR based on the pre-construction survey records. This shall include a consideration of both seed collection and any seeds which are commercially available.
ECOLOGICAL MANAGEMENT CONTRACTOR shall specify the appropriate seed mix to be used during seeding the right of way and other Project areas that allow the variety and distribution pattern of the original plant species to be replicated with the aim of meeting both the Erosion Performance Targets within the Reinstatement Specification and the long term objectives to restore vegetative cover and species diversity as part of biorestoration. ECOLOGICAL MANAGEMENT CONTRACTOR shall ensure that this initial seeding does not preclude subsequent restoration of the natural vegetation.

The proposal should allow for the use of species originally found in each route section or Project area and/or rapid growth species that have a dense, fibrous horizontal root structure close to the surface and are resistant to damage by run-off or trampling in areas where erosion control is important. Proposals shall be consistent with planting restrictions along the pipeline centre line.

ECOLOGICAL MANAGEMENT CONTRACTOR's Ecological Management Implementation Plan shall consider alternative sources of local seeds, such as locally grown hay cut at the seed stage to allow for the eventuality that non-domesticated native plant species are not commercially available.

The SCPX ESIA has committed to selecting plant species that will not out-compete indigenous species and to ensure that invasive species are not used for biorestoration.

Seeding implementation

ECOLOGICAL MANAGEMENT CONTRACTOR shall produce a Seeding Method Statement for COMPANY review which shall allow for the seed bank of species remaining in the preserved topsoil to be supplemented by appropriate seeds, bulbs, and plants bought from suppliers.

Initial seeding shall be undertaken by CONTRACTOR to obtain Erosion Class 3, restore vegetative cover and return areas to a condition which is visually similar to the surrounding area during the CONTRACT WARRANTY Period.

The seeding method statement shall include the following:

- Species mix
- Seed source
- Quality control (including checking for alien and/or invasive species)
- Seed bed preparation measures
- Seeding rates
- Seeding methods
- Soil additives selection and use
- Watering requirements
- Seeding schedule (allowing for growing season and site specific meteorological conditions)
- Seed protection measures
- Use of pesticides.

The method statement shall:

- Ensure that sowing or planting is scheduled in appropriate growing seasons for a period that is likely to be followed by sufficient rainfall to promote germination and establishment
- Make allowance for testing seeds bought from commercial suppliers in advance of bulk purchase
- Propose seeding methods appropriate to each area, such as broadcast and hydroseeding methods
- Target seeding rates and species mixes that replicate initial conditions established in the preconstruction survey, where practical
- Ensure the use of any proposed pesticides is in accordance with the Pollution Prevention Plan.

In areas where rapid vegetative growth is necessary to control erosion, ECOLOGICAL MANAGEMENT CONTRACTOR's Method Statements may propose the application of low motility fertilisers (e.g. ammonium sulphate nitrate or calcium ammonium nitrate) so that the natural nutrient balances in the adjacent ecosystems are not altered. ECOLOGICAL MANAGEMENT CONTRACTOR should consult local universities, ministries and landowners for advice on rates of application for fertilisers, and shall conduct field trials to check them.

ECOLOGICAL MANAGEMENT CONTRACTOR's Ecological Management Implementation Plan shall include proposed Seeding and Biorestoration Method Statements to cover reseeding and replanting schemes, within the contracted period of post planting maintenance (e.g. watering, weeding and application of fertiliser) in each Project area for approval by COMPANY.

Non-competitive plant species for reinstatement

Where any work areas require re-seeding, the seeds used will comprise annual plants that are not persistent i.e. they will ideally be annual plants that can be cut before they seed. This will prevent the establishment of permanent cover of species that prevent the re-establishment of species-diversity appropriate to the local area.

CONTRACTOR shall undertake the following commitments:

18-01	No species that are considered likely to out-compete the indigenous plant species will be used in seed mixes.

Avoid using invasive plant species for biorestoration
Where seeds are sown as part of biorestoration, CONTRACTOR will ensure that the seed mix does not include invasive plant species. The SCPX ESIA has committed to prohibit the sale of vegetation from the ROW or facility construction sites to prevent the movement of alien or invasive species.

CONTRACTOR shall undertake the following commitments:

18-02	No invasive species will be used in seed mixes for erosion control or biorestoration.

Locally collected seed for biorestoration
Where seeds are sown as part of biorestoration, they shall comprise seeds that are collected locally. The collection of seeds will be the subject of a formally regulated contract that specifies the seed collection methods.

CONTRACTOR shall undertake the following commitment in semi-natural areas:

18-07	Where work areas need to be reseeded to promote biorestoration this will be done with locally collected seed. Any deviations to be approved by the Company.

Re-seeding of sensitive sections
Some sections of the route have been identified as having increased sensitivity to slow recovery of species-diversity. The reasons for slow recovery are likely to be different at the eastern end of the route from those at the western end of the route, and therefore the commitments for evaluation and action are slightly different.

CONTRACTOR shall undertake the following commitments:

X7-33a	Between KP321 - KP322.9, KP335.4 - KP336.4, KP342 - KP346, KP346.1 - KP351, KP359 - KP370 and KP383 - KP390, seed will be collected from similar habitats where and to the extent feasible in the local area and re-sown onto the ROW during reinstatement.
X7-33b	If long-term monitoring shows slow recovery of the ROW between KP321 - KP322.9, KP335.4 - KP336.4, KP342 - KP346, KP346.1 - KP351, KP359 - KP370 and KP383 - KP390,, remedial action will be considered.

8.4.5.2 Worker rules and regulations

CONTRACTOR's Ecological Management Implementation Plan shall establish worker rules and regulations for its personnel and sub-contractor's personnel which shall include the prohibition of the introduction of foreign or non adapted vegetation to ROW, camps, work areas and surrounding areas and the requirements detailed below.

Driving

CONTRACTOR shall prescribe the use of existing roads where practical to access the right-of-way, construction camps and other Project sites and limit the use of new access points. CONTRACTOR personnel will keep to these roads avoiding the need to travel off-road and disturb sensitive species except where COMPANY has given specific approval. CONTRACTOR shall not allow personnel, vehicles, and machinery to enter areas that have not been specifically authorised for Project activities, especially sensitive areas.

CONTRACTOR shall require construction personnel to keep within the right-of-way or the limits of the work site at all times while working (where applicable and practicable), and to keep out of areas demarcated for the purposes of protecting sensitive species or habitats.

CONTRACTOR shall train its drivers in toolbox talks to drive with caution, keep to approved roads, reduce speed when there are animals on the road and allow safe passage of wildlife across public roads and access roads.

The soils on the ROW are vulnerable to compaction from vehicle use, which can prevent the re-growth of vegetation.

The COMPANY shall implement the following specific commitment:

17-16	The Company will encourage EPPD security patrols to use existing access tracks wherever possible, and not to drive along the ROW.

Using horse patrols to minimise soil compaction

Compaction of re-instated soil is one of the main factors affecting the ability of vegetation to re-grow on the ROW. It is therefore required that the CONTRACTOR takes steps to minimise vehicle movements on the ROW.

Fires

CONTRACTOR shall prohibit Project staff from lighting fires in the ROW, at other work sites or at camps unless they have been specifically authorised by COMPANY.

8.4.5.3 Rivers

Maintaining habitat connectivity around reinforcements

CONTRACTOR will define the need for additional bank reinforcement on a case-by-case basis, to be agreed by COMPANY. Where bank reinforcement is required, the ECOLOGICAL MANAGEMENT CONTRACTOR will assess the impact on riparian habitats and riparian fauna (such as Otters) and if appropriate, the CONTRACTOR will be required to install mitigation to maintain habitat connectivity (such as creating ledges at water level along the front of hard reinforcement to allow riparian animals to move along the river bank) or offset any loss of riparian habitat by creating additional habitat. The type and scale of mitigation will be designed appropriate to the scale of impact, according to an assessment by COMPANY's Project Ecologist.

The CONTRACTOR shall implement the following specific commitments:

X7-21a	If artificial bank or bed reinforcement is required at the Kurekchay, Ganjachay, Goshgarachay, Zeyamchay, Asrikchay, Tovuzchay, Hasansu or Kurudere, an assessment of the potential impacts (including habitat connectivity) and identification of any necessary mitigation measures will be undertaken by the Contractor.

If artificial bank reinforcement is required at the Kurekchay, Ganjachay, Goshgarachay, Zeyamchay, Asrikchay, Tovuzchay, Hasansu or Kurudere, this will take account of potential impacts and mitigations for RDB spawning fish.

X7-21b	Any bed reinforcement at the Kurekchay, Ganjachay, Goshgarachay, Zeyamchay, Asrikchay, Tovuzchay, Hasansu or Kurudere will be planned to occur outside the fish spawning season. If work must be undertaken within the fish spawning season (of any IUCN/ red data book species present nominally April to July, the exact timing of which will be determined following a pre-construction survey) it will only be done so following a site assessment and approval by the Company.

Reinstatement of reed bed at the Korchay

The Korchay River crossing will go through an area of reed bed habitat, close to the existing BTC crossing. Approximately 500m downstream of the crossing the watercourse opens out into the Korchay Reservoir. Both the reed bed and reservoir are used by a wide range of wildlife including some RDB species such as *Bufo bufo* (Common Toad). Reinstatement of

the BTC crossing has been successful except for the section immediately above the pipeline, which has been flumed and used as a permanent access route for pedestrian and vehicular traffic. CONTRACTOR shall ensure that the SCPX crossing is fully re-instated to existing reed bed conditions, to ensure that there is no cumulative impact such as habitat loss or severance.

X7-29	At the Korchay, the existing reed bed will be re-instated and the watercourse will be reinstated rather than flumed permanently. A permanent access route across the watercourse will not be installed.

8.4.5.4 Habitats

Developing a monitoring plan and setting targets
After the CONTRACT WARRANTY period, ECOLOGICAL MANAGEMENT CONTRACTOR will also be responsible for carrying out any additional seeding and/or planting of areas as required to meet the above targets.

ECOLOGICAL MANAGEMENT CONTRACTOR's Method Statements shall make provision to protect seed and plants from damage by livestock or wild animals until successful re-vegetation has been achieved.

In areas where livestock or wild animals are present, ECOLOGICAL MANAGEMENT CONTRACTOR shall take precautions to prevent seeds and plants from damage. This may include a combination of security patrols; liaison and agreements with livestock managers; stock proof fencing and supplementary boundary fencing.

ECOLOGICAL MANAGEMENT CONTRACTOR shall develop after-care and maintenance procedures, which shall be defined on a location-specific basis and meet the following commitment.

8.4.6 Biorestoration

The COMPANY has committed to the following long-term targets for biorestoration:

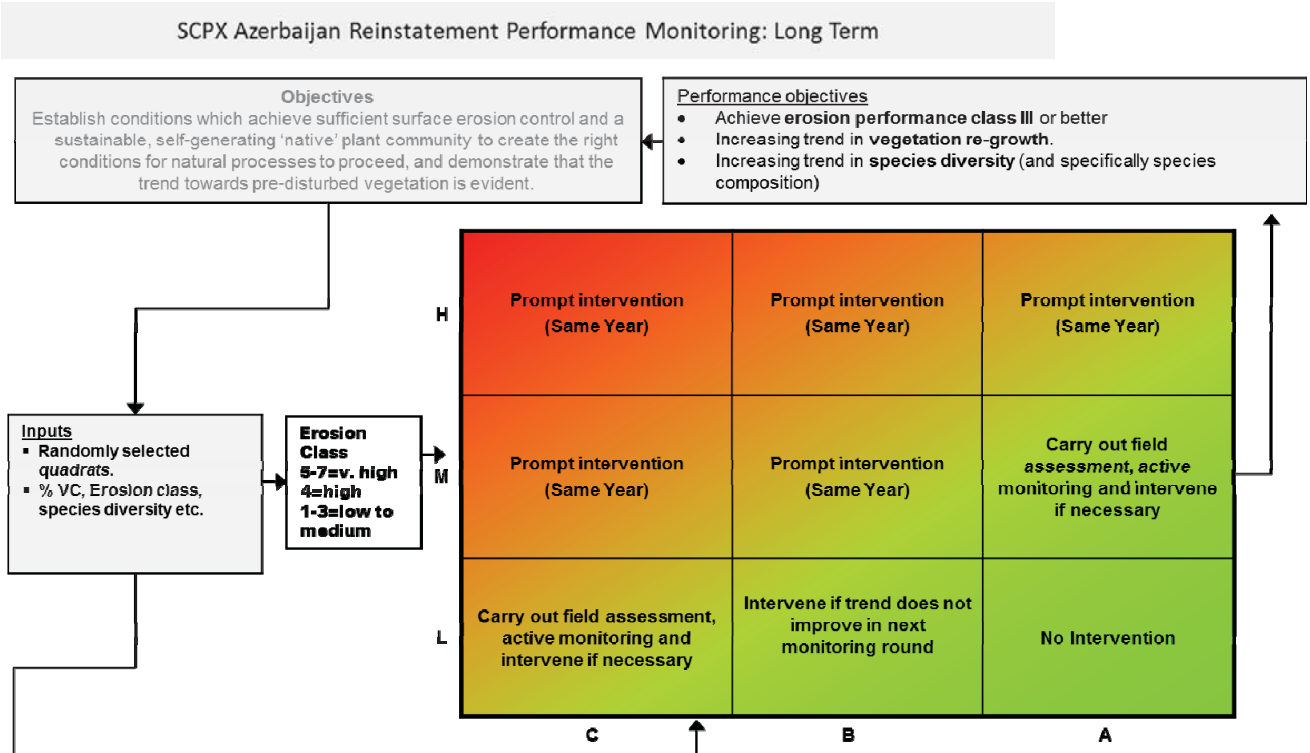
3-14	A monitoring plan will be developed to determine the success of re-vegetation and bio-restoration activities, including the appropriateness of species composition.
17-07	The Project will seek to achieve an increasing trend in vegetation re-growth and species diversity (specifically species composition) in reinstated areas with reference to nearby areas undisturbed by Project activities, as recorded by the percent similarity and commonality indices.

Biorestoration is the restoration of flora and fauna and the establishment of vegetation cover (post seeding) to return the vegetation cover and species diversity to meet the following long term target (taking account of COMPANY restrictions on planting adjacent to pipelines and the need for vehicular access for pipeline security and maintenance activities) on non-agricultural, temporary areas:

- Reinstate the variety and distribution pattern of the original plant species with the long-term objective of reinstating to a condition that is close as possible to the original.

This will involve a trend based annual monitoring approach for reinstated areas, involving the analysis of vegetation cover and species diversity (composition) with reference to adjacent areas which were undisturbed by project activities. This approach will be aligned with that currently used on the BTC and SCP pipelines in Azerbaijan, and expanded where necessary to take account of additional mitigations implemented on SCPX.

The COMPANY will endeavour to meet the long-term vegetation cover targets (based on BTC/SCP experience), within five years of reinstatement commencing.



Category	Vegetation Cover (after five years)	Artemisetum lerchiana clayey desert Capparisetum spinosa clayey desert Ephemeral desert Halocnemetum strobilaceum solonchak Salsoletum dendroides clayey desert Halocnemetum strobilaceum solonchak Salsoletum nodulosae clayey desert Suaedetum microphylla solonchak desert	Phragmiteta-typhetum marsh Tamarixetum scrub	Artemisetum botriochloasum semi-desert Plantation woodland Tugay Forest Chal meadow Artemisetum lerchiana purum desert
A	Vegetation cover increasing progressively	>30	>50	>60
B	Vegetation cover increasing progressively	20-30	30-50	50-60
C	Vegetation cover showing little or no signs of increase between monitoring periods	<20	<30	<50

Figure 8-1: Re-Vegetation Monitoring and Performance Requirements (Long Term)

ECOLOGICAL MANAGEMENT CONTRACTOR shall also undertake any planting to reinstatement field boundaries.

3-19	Field boundaries will be reinstated to pre-existing condition on completion of construction.

8.4.6.1 Planting and reforestation

A tree removal, replacement and offset planting strategy shall be developed by the COMPANY and the ECOLOGICAL MANAGEMENT CONTRACTOR that will take account of the species removed during construction, variety of species to be planted and the region-specific environmental characteristics.

17-08	Compensation planting will be based on the number of trees to be removed. A re-planting ratio will be developed which will be species and region specific.

As noted above, subject to planting restrictions adjacent to pipelines and the need for operational access for security and maintenance activities, reforestation of the right-of-way or adjacent areas will be undertaken wherever a forest existed before construction of the new pipeline, aiming to replicate the pre-construction composition and density (number/unit area) of the vegetation.

ECOLOGICAL MANAGEMENT CONTRACTOR shall develop method statements that shall include the following (as required):

- The removal of any trees, shrubs or plants prior to construction; their storage and maintenance and subsequent replanting
- The acquisition of tree and shrub cuttings and other plant species grown by commercial nurseries
- Translocation of rare plants that were removed from all Project areas.

ECOLOGICAL MANAGEMENT CONTRACTOR shall refer to the preconstruction surveys when deciding where translocated plants should be re-introduced as part of bio-restoration.

8.4.6.2 Aftercare and maintenance

After the CONTRACT WARRANTY PERIOD, ECOLOGICAL MANAGEMENT CONTRACTOR will also be responsible for carrying out any additional seed and/or planting of areas as required to meet the above targets.

ECOLOGICAL MANAGEMENT CONTRACTOR's Method Statements shall make provision to protect seed and plants from damage by livestock or wild animals until successful re-vegetation has been achieved.

In areas where livestock or wild animals are present, ECOLOGICAL MANAGEMENT CONTRACTOR shall take precautions to prevent seeds and plants from damage. This should include a combination of security patrols; liaison and agreements with livestock managers; and stock proof fencing and supplementary boundary fencing.

ECOLOGICAL MANAGEMENT CONTRACTOR shall develop after-care and maintenance procedures, which shall be defined on a location-specific basis and meet the following commitment.

17-07	The Project will seek to achieve an increasing trend in vegetation re-growth and species diversity (specifically species composition) in reinstated areas with reference to nearby areas undisturbed by Project activities, as recorded by the percent similarity and commonality indices.

ECOLOGICAL MANAGEMENT CONTRACTOR shall undertake the following commitments:

17-08	Compensation planting will be based on the number of trees to be removed. A re-planting ratio will be developed which will be species and region specific.

ECOLOGICAL MANAGEMENT CONTRACTOR's Ecological Management Implementation Plan shall include proposals for the bio-restoration of the pipeline working width, temporary areas and temporary roads (except for those that will be retained by local communities) to maintain habitat continuity as far as is practicable.

Where any trees are removed from the ROW during construction, compensation planting will ensure there is no net loss in the number of trees. CONTRACTOR will keep a record of any trees that are removed, including the number of trees, their location, size (diameter at breast height and height) and the species. Any re-planted trees will be the same species as those removed.

8.5 Verification and Monitoring

8.5.1 Ecological Monitoring

All COMPANY, CONTRACTOR (including ECOLOGICAL MANAGEMENT) verification and monitoring activity related to the provisions of this plan shall be in accordance with the requirements of the Environmental and Social Management and Monitoring Plan.

ECOLOGICAL MANAGEMENT CONTRACTOR shall be responsible for documenting the preconstruction surveys, for the implementation of mitigation actions (as described above), and for monitoring the success of the mitigation measures implemented under its own quality system.

CONTRACTOR shall monitor at least the following ecological management issues:

- The implementation of the pre-construction survey mitigation actions as they relate to CONTRACTOR's activities
- That construction workers have been trained, have received toolbox talks and are aware of/complying with CONTRACTOR's rules and regulations with regard to ecological protection
- That the required signs and notices have been erected
- That sedimentation control works at river crossings are effective and that sediment is not visible in the river water
- That works are not encroaching outside the designated works areas or on any sensitive habitats.

ECOLOGICAL MANAGEMENT CONTRACTOR shall monitor at least the following ecological management issues:

- That the Field Ecologists are suitably qualified
- That all the required pre-construction surveys have been undertaken in advance of construction
- That vegetation, nesting and roosting sites, holts, etc have been cleared where identified as an appropriate mitigation measure in light of a pre-construction survey
- That areas of ecological significance identified in preconstruction surveys have been clearly marked
- That their Ecological Management Implementation Plan addresses specific measures for protecting flora/habitats before and during construction and the restoration of each individual environmentally sensitive area
- That all ecological mitigation measures are implemented with respect to the successful reinstatement of habitats on the right-of-way (e.g. translocation of plants and animals, and the removal, nurture and replacement of turfs of endangered or threatened plant species).

CONTRACTOR and ECOLOGICAL MANAGEMENT CONTRACTOR shall each submit a monthly Environmental Report to COMPANY during the term of their respective CONTRACTs with details of the ecological protection and bio-restoration measures that have been implemented, and the monitoring inspections that have been carried out.

COMPANY shall develop and implement a monitoring programme for sensitive habitats and aquatic ecosystems before construction starts and maintain it throughout the construction period and into reinstatement and operation. The monitoring plan shall include a strategy for monitoring each applicable environmental component related to the Project. COMPANY shall develop an audit schedule to verify that CONTRACTOR and ECOLOGICAL MANAGEMENT CONTRACTOR are fulfilling the commitments for ecological protection and bio-restoration that COMPANY made in the ESIA. COMPANY shall assign a Field Environmental Supervisor to the Project who shall be responsible for checking

CONTRACTOR's and ECOLOGICAL MANAGEMENT CONTRACTOR's compliance with the requirements of this Ecological Management Plan.

CONTRACTOR will report the dates, locations, species and quantities of seeding/hydroseeding and planting undertaken and fertiliser used the following on a weekly basis. The report will include measures taken to control noxious/invasive alien species and other environmental aspects relating to air quality, noise, water quality, waste management and soil and erosion control and which are directly or indirectly linked to bio-restoration management.

8.5.2 Monitoring the Effectiveness of Species Translocation

ECOLOGICAL MANAGEMENT CONTRACTOR shall monitor the success of translocation of plants and inspect the sites to which they are transplanted to check that they are surviving.

ECOLOGICAL MANAGEMENT CONTRACTOR shall check regularly on the condition of stored turfs and topsoil.

ECOLOGICAL MANAGEMENT CONTRACTOR shall regularly inspect the safe zones in which small animals of limited mobility have been translocated to assess whether they are thriving at the new location.

8.5.3 Monitoring the Effectiveness of Bio-restoration

ECOLOGICAL MANAGEMENT CONTRACTOR shall monitor the success of translocation of plants, and inspect the sites to which they are transplanted to check that they are surviving.

ECOLOGICAL MANAGEMENT CONTRACTOR shall check regularly on the condition of stored topsoil.

Bio-restoration may involve seeding of species to provide new growth or planting bulbs, shrubs or trees.

ECOLOGICAL MANAGEMENT CONTRACTOR shall carry out any planting of bulbs, shrubs and or trees necessary to meet the above targets and shall produce Biorestoration Method Statements describing the planting process.

The SCPX ESIA has committed to monitor the effectiveness of biorestoration.

3-14	A monitoring plan will be developed to determine the success of re-vegetation and biorestoration activities, including the appropriateness of species composition.
17-10	The re-establishment of vegetation will be monitored following reinstatement until it has reached Project near- and long-term re-vegetation targets.
17-11	Corrective measures will be implemented if establishment of vegetation is not successful or if, following survey and data analysis, the species composition is considered by the Project Ecologist to be unsuitable for the area.

CONTRACTOR and ECOLOGICAL MANAGEMENT CONTRACTOR's Ecological Management Implementation Plan shall address these requirements as it relates to their scope of work and responsibilities. CONTRACTOR shall be responsible for monitoring and corrective action to the end of the CONTRACT.

ECOLOGICAL MANAGEMENT CONTRACTOR shall continue to monitor the re-vegetation of disturbed areas after the end of the warranty period until COMPANY has accepted that restoration is complete in accordance with the long-term re-vegetation targets.

ECOLOGICAL MANAGEMENT CONTRACTOR's Ecological Management Implementation Plan shall propose periodic evaluations by Field Ecologists of all re-vegetated areas and will

document plant development (e.g. survival, damage, species mortality rates, and the presence of noxious and invasive species) and prepare an aftercare and biorestoration maintenance plan to monitor and remedy any deficiencies with regard to the biorestoration objectives.

During the CONTRACT period, COMPANY's Field Environmental Supervisor shall:

- Verify the proper application of plant materials during re-vegetation activities, including density, distribution pattern, and species
- Verify that re-vegetation achieves vegetative coverage goals
- Verify that noxious and invasive species do not colonise the ROW and other disturbed areas
- Audit the success of physical restoration and re-vegetation.

9 WASTE MANAGEMENT PLAN

9.1 Scope

The scope of this Management Plan relates specifically to the following waste management issues:

- Identification and classification of waste
- Waste hierarchy and waste minimisation strategy (i.e. reduction at source, reuse, recycling, treatment stabilisation, and responsible disposal)
- Waste handling (i.e. collection, segregation, treatment, storage, transport and, disposal and documentation)
- Monitoring and reporting.

It does not cover wastewater effluent streams; these are addressed in the Pollution Prevention Plan.

9.2 HGA Standards and Practice

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered has been described below.

Specific guidance is listed below:

- IFC Policy on environmental and social sustainability (Performance Standard 3) - January 2012
- IFC General EHS Guidelines (1.6 Waste Management) - April 2007
- EU revised Waste Framework Directive (2008/98/EC), particularly Annex III defining hazardous waste properties
- The European Waste Catalogue (2002), issued under EU Commission Decision 2000/532/EC (as amended)
- Landfill Directive 1999/31/EEC
- EU Council Decision 2003/33/EC on the acceptance of waste at landfills
- Directive 2008/98/EC on waste management
- EU Directive (94/62/EC) on Packaging and Packaging Waste.

Operators constructing similar projects to the SCPX Project generally adopt the following good practices to achieve sustainable management and use of resources:

- Projects develop a waste management and minimisation plan that includes:
    - Identification and characterisation of all potential waste streams
    - Waste avoidance and minimisation, (e.g. use products that do not generate waste, return unused products or empty containers to vendors, reuse and recycling measures, toxicity reduction)
    - Segregation, treatment, stabilisation, labelling and storage requirements
    - Details of how each waste stream will be managed
    - Recording and manifesting requirements
    - The process for assessment, selection, management and monitoring of waste management
    - Reporting systems, including waste management KPIs for reduction or recycling
    - Training and awareness programmes.

- Projects forecast the nature, quantity and characteristics of anticipated waste streams and assess the HSE impacts and risks of waste. They review the capacity of in-country, regional and local waste management infrastructure and transport infrastructure to meet the Project's requirements
- Projects adopt a waste hierarchy that preferentially avoids or minimises waste generation at source and reduces the quantity of waste disposed to landfill by re-use, recycling and, if appropriate, treatment (e.g. incineration)
- Projects aim to minimise the handling and transportation of waste and complete a transportation risk assessment prior to transport, that includes consideration of:
    - Identification of potential hazards posed by transportation
    - The suitability of containers
    - Provision of suitable spill kits or equivalent
    - Appropriate labelling
    - Transportation documentation (e.g., transfer and delivery notes, information on the potential risks and hazards of the waste consignment)
    - Remedial clean-up requirements in the event of a spill.
- Projects put a process in place to segregate waste according to hazard classification and type (e.g. hazardous, non-hazardous, recyclable/non-recyclable), and label and store wastes in suitable receptacles
- Projects may treat waste prior to storage to render it less hazardous and reduce its volume
- Projects implement a waste tracking system governing all waste to be stored , re-used, treated and transferred to recycling and/or disposal sites
- Projects document the location, treatment, disposal or storage of all produced waste, and of proposed future management of wastes in storage
- Projects set up a system to periodically assess the waste management chain of custody documentation (from generation through to disposal, recycling or reuse).

9.3 Roles and Responsibilities

COMPANY intends to discharge its obligations in respect of waste management during pipeline construction, and in respect of the Project as a whole, through the CONTRACTOR which will have primary operational accountability for the safe and compliant management, treatment and/or disposal of waste.

Responsibilities relating specifically to waste management are defined below.

9.3.1 Company

COMPANY shall be responsible for:

- Approving the final destination for all waste streams ensuring that a "cradle to grave" solution is applied and that disposal sites comply with appropriate requirements.
- Ensuring that list of approved waste management subcontractors is kept up to date and that waste management contractors maintain all necessary permits.

9.3.2 Contractor

It is CONTRACTOR's responsibility to adequately handle and dispose of contractor generated wastes under COMPANY supervision and according to the requirements in this plan.

CONTRACTOR shall put these responsibilities into effect by:

- Undertaking removal of waste from Waste Collection Points (from camps, RoW, work sites, etc.) to the Waste Storage Areas (WSAs) in Project-approved vehicles for segregation, treatment, stabilisation, labelling and storage. Providing sufficient competent personnel to undertake the required actions in this plan including: a waste

advisor to be located at each camp site and/or facility construction site if the two are not co-located and support staff along the Project worksites
- Carrying out an initial waste identification, estimation, minimisation and classification study, identifying appropriate handling/treatment options, for different classes of waste expected to be generated and including this information in their tender documents for costing purposes
- Designing and constructing bunded and sheltered waste management areas at all main campsites. Layout designs of waste management areas shall require COMPANY approval
- Undertaking segregation (at the source and at the WSA) and transfer of the waste they generate in full compliance with this plan and SCPX Project requirements
- Segregation, collection, treatment and final disposal of all organic/putrescible waste and food contaminated waste
- Reduction of waste volume at source including but not limited to the provision of composters and/or incinerators, compactors and balers (for paper, plastic, cardboard, aluminium cans, metal shavings, paint cans, etc.) aerosol piercers and crushers; oil filter bleeding and crushing, drum washing and crushing, shredding, bulb and fluorescent tube crushing and mercury recovery
- Transporting segregated re-usable and recyclable waste from WSAs to COMPANY approved recycling facilities
- Supply and maintenance of portable toilets at worksites
- Transporting portable toilet sewage from all worksites to the CONTRACTOR's site Sewage Treatment Plants (STPs)
- Transporting surplus uncontaminated soil to its approved disposal locations where surplus soil will be landscaped in accordance to SCPX Reinstatement and Landscape Management Plans
- Designing and establishing appropriately designed Waste Collection Points and WSAs in accordance with this WMP and the Pollution Prevention Plan
- Handling, transporting, treating and disposing of medical waste in accordance with SCPX Project requirements e.g. autoclave and/or thermal treatment (incineration)
- Treatment and disposal of drilling and tunnelling muds/fluids
- Preparing hazardous waste for collection and ensuring waste is within clearly labelled fit for purpose containers for transportation
- Ensuring the return of all surplus hazardous materials and empty receptacles to vendor, and where possible, left over hazardous material to vendor
- Implementing effective monitoring of waste streams, recording quantities, storage locations, transport and disposal of wastes
- Receiving sewage waste from remote work areas for treatment in CONTRACTORs STPs
- Transporting non-hazardous, non-recyclable, non-reusable, non-putrescible waste from Waste Storage Areas to the COMPANY approved landfill site or other COMPANY approved facility
- Transporting hazardous waste from WSAs to COMPANY approved treatment or storage area
- Transportation and bioremediation of oil contaminated soils
- Undertake transfer of the waste generated and implement the final treatment/re-cycling/disposal option in full compliance with this plan and SCPX Project requirements
- Supplying appropriate containers e.g. skips or similar to store waste at the WSA and to be used to transfer to the final destination
- Ensuring that the supply of appropriate containers for transport and final storage is sufficient and compatible with the types of waste produced and stored
- Reporting weekly and monthly waste statistics and status (including each type and quantity of waste generated) in a format agreed with COMPANY.

9.4 Impact Avoidance and Mitigation

9.4.1 Training in COSHH

CONTRACTOR shall train personnel to understand the potential of Project waste activities and the environmental consequences of failure to contain hazardous wastes.

Site induction training will be supplemented by regular 'toolbox' talks with site staff and technicians if inspections or audits highlight failings in waste management.

9.4.2 Prediction of Waste Types and Quantities

Upon award of CONTRACT, CONTRACTOR shall undertake a Waste Study. The study shall be a component of CONTRACTOR'S Waste Management Implementation Plan (WMIP) and shall be carried out using a cradle-to-grave approach, identifying all potential waste streams at their point of generation, their nature (classification) and quantity likely to be generated during construction. CONTRACTOR shall maintain the predictions of waste and produce updated six-monthly forecasts.

CONTRACTOR shall keep the waste identification study data up to date, including new waste streams, or waste streams that have not yet been classified, and/or approved disposal locations in accordance with COMPANY requirements.

9.4.3 Identification and Classification of Waste

9.4.3.1 Waste classification

CONTRACTOR shall classify wastes as hazardous, non-hazardous or inert by applying the principles described below:

9.4.3.2 Hazardous

Hazardous wastes pose potential risks to public health and environmental quality because they exhibit one or more of the following inherent characteristics:

- Ignitability
  - Flammable, highly flammable or explosive.
- Reactivity
  - Corrosive
  - Oxidising.
- Biologically harmful
  - Toxic or eco-toxic
  - Infectious, irritant, carcinogenic, mutagenic, teratogenic.

Medical waste (including sharps, syringes, needles, dressings and surplus medicines) is a sub-category of hazardous waste that is associated with causing biological harm.

Radioactive waste is a sub-category of hazardous waste that is associated with causing carcinogenic, mutagenic or teratogenic harm to organisms.

CONTRACTOR shall refer to the EU revised Waste Framework Directive for further definition of hazardous waste.

CONTRACTOR shall ensure that a team of personnel trained in the use of spill kits will be mobilised in the event of any spillage of hazardous materials (as required by the Pollution Prevention Plan).

9.4.3.3 Non-hazardous

Non-hazardous waste is waste that is neither hazardous, nor inert, nor wastewater. Types of waste that do not have inherently harmful properties are categorised as non-hazardous. These include:

- Material that is chemically inert
- Material that will rapidly biodegrade.

9.4.3.4 Inert waste

Inert Waste is any waste as defined in Article 2 of the Landfill Directive 1999/31/EEC and includes non-degradable, non-leaching and non-reactive material such as stone, gravel, glass, bricks, etc. For the purposes of this project it will also include cured and clean cement (cement where diesel or oil spills have occurred will be treated as hydrocarbon contaminated soil).

CONTRACTOR shall re-use inert waste for Project construction to the fullest extent practicable; for example, for erosion protection measures, road construction, site fill material. If necessary it shall be pre-treated; for example, excavated rock should be crushed and used as padding and back-fill.

CONTRACTOR shall implement the following commitment:

1-14	Excavated subsoil will be screened and reused for padding, wherever practicable.

9.4.3.5 Waste streams

Waste stream identification shall include, but not be limited to:

Hazardous waste:

- Medical waste
- Used oil
- Hydrocarbon contaminated material (rags, drums, soil, used spill response equipment)
- Paint and solvents
- Used oily filters
- Batteries (dry-cell/lead)
- Used drums (chemical cans, drums, containers, packages should be treated and disposed as hazardous waste if their content was defined as hazardous material)
- Contaminated soil (any other waste process chemicals, oily water, fluorescent tubes).

Non-hazardous waste

- Rubber tyres
- Glass
- Paper and card
- Plastics
- Scrap metals
- Wood
- Domestic waste.

Inert waste

- Surplus uncontaminated soil (including uncontaminated waste rock).

Waste stream identification and classification shall be carried out according to COMPANY regional guidelines which will be supplied to CONTRACTOR.

9.4.3.6 Contaminated soil as waste

CONTRACTOR's Waste Management Implementation Plan shall propose methods for removing, containing and handling contaminated soil (hydrocarbon, dangerous substances, other hazardous or non-hazardous waste) as hazardous waste and transferring it to the WSA.

6-16	The preferred options for the treatment of contaminated soil will be based on the risks posed by the material. In keeping with the aim of minimising the transportation of hazardous materials and minimising waste generation, preference will be given to in situ and low technology remedial approaches.

CONTRACTOR shall be responsible for removal from the WSA, transport and treatment of contaminated soil.

9.4.4 Waste Avoidance and Minimisation Strategy

CONTRACTOR's WMIP shall adopt a waste hierarchy that preferentially avoids or minimises waste generation at source and reduces the quantity of waste disposed to landfill by re-use and recycling. COMPANY shall monitor CONTRACTOR'S performance in reducing the amount of waste generated.

9.4.4.1 Reduction at source

CONTRACTOR shall undertake a Waste Study which will identify waste minimisation options by means such as selecting materials for use that avoid waste generation (e.g. purchasing in bulk) and contracts to be established to allow return of excess product to vendor.

9.4.4.2 Minimisation

CONTRACTOR shall implement waste minimisation techniques such as maceration, dewatering and composting of food waste and sludge, and treatment (see Section 9.4.6) prior to transport from site. All waste minimisation options shall be approved by COMPANY. The CONTRACTOR shall return surplus material to vendors where possible.

CONTRACTOR shall within procurement and supply contracts ensure the return of all unused hazardous materials and empty receptacles to the vendor and, where possible, surplus non-hazardous material.

9.4.4.3 Re-use and recycling of materials

CONTRACTOR shall identify any of its waste streams that include waste materials that could be segregated for re-use or recycling (e.g. packaging wood for reuse in Project construction and plastic bottles, cardboard/paper or metal for recycling).

CONTRACTOR shall identify organisations in the region that carry out processes to re-use and recycle waste materials and recommend them to COMPANY for approval.

CONTRACTOR shall not release waste materials to individuals or non-commercial or non-community entities without the approval of COMPANY.

9.4.5 Waste Collection and Handling

CONTRACTOR's WMIP shall establish plans for waste collection areas to allow the collection of waste at source (Waste Collection Points, or WCPs) as well as secure transfer/ storage locations (Waste Storage Areas or WSAs). A Duty of Care will be imposed on Contractors to ensure that waste is stored and disposed of safely and legally and that the risk of escape is reduced.

9.4.5.1 Waste collection points (WCP)

Waste collection containers shall be placed at numerous strategic points around the construction site and/or pipeline spread by CONTRACTOR and be sized in accordance with the type of activity planned and numbers of personnel.
Locations for waste collection around the campsites can include offices, warehouses, equipment yards, kitchen facilities, etc.

CONTRACTOR shall provide a combination of waste containers of different type and volume that are fit for purpose around the each site. Waste containers shall include wheelie

bins; hippo hopper bins; euro-bins; drums, waste skips and lockable standard bins for medical waste.

CONTRACTOR shall clearly label all waste containers (with labels of the appropriate colour) in order to clearly indicate the waste for which they are to be used.

The containers shall be clean drums or other rigid walled vessels properly labelled for particular types of waste.

Hazardous Waste	Colour Code
Medical waste	Yellow
Oily solid wastes (rags, filters, etc.)	Black
Other hazardous wastes (fluorescent tubes; aerosol cans, chemical handling equipment etc.)	Red (Segregated depending on type of waste with specific label)
Non-hazardous waste	
Glass	To be advised
Paper and Card	White
Plastics	Grey
Scrap metals	Blue
Wood	Brown
Food waste	Green

This will allow for greater segregation of recyclable waste, reusable, treatable and waste for disposal.

All waste containers at the WCP (bins, skips, drums etc.) shall be clearly labelled in appropriate languages (Azerbaijani and English) to show which wastes can be disposed into them and which wastes they contain. Any previous labelling will be removed or covered to avoid confusion.

CONTRACTORs WCPs shall have illustrated information posters about the principles for segregation and the precautions to be taken when handling waste. WCPs shall be accessible to appropriate transportation equipment (e.g. forklifts) for transfer to the WSA as appropriate.

Different types of wastes shall be segregated as detailed in Section 9.4.5.2. Waste storage containers used shall be appropriate in terms of volume, composition, shape, and opening for the material that is being stored. Containers shall be maintained in good condition, with no holes, gashes, dents, or excessive rust and must be equipped with lids.
Containers shall have a cover, depending upon their contents and needs for litter or dust control, prevention of bird access, or to keep rain out of the skips. Skips containing paper or cardboard for recycling shall be protected from rain. Bungs and lids will be securely fastened or other forms of covering shall be provided.

Waste will be stored and disposed of by CONTRACTOR in a way to prevent, as far as possible, attracting and access by stray dogs and vermin. Waste shall not be stored on the ROW overnight unless security is provided. Waste will only be stored for as long as necessary before being transferred off-site for appropriate treatment and disposal.

CONTRACTOR shall implement the following commitment:

19-08	Construction contractors will be required to manage the storage and disposal of food and organic wastes to avoid attracting vermin

CONTRACTOR shall ensure appropriate numbers and types of waste containers are available in their area (e.g. ROW, work site, camp offices, warehouse, equipment yard,

kitchen) in places that are easily accessible from the places that waste is generated and that allow for segregation at source.

Should any short-term storage of hazardous liquids (i.e., waste fuel, oil or chemicals) be required, as a minimum, a geomembrane lined and bermed storage shall be constructed or materials stored within a drip tray or similar. Camps, yards refuelling areas and other temporary worksites will have hardstanding bunds for the storage of hazardous liquids. These storage areas shall be able to contain at least one hundred and ten (110) per cent of the volume of the largest container. These wastes should be transferred to the WSA within 24 hrs.

All hazardous liquid or semi-liquid waste containers shall be bunded.

Solid waste will be stored in such a way as to prevent it blowing away in high winds.

CONTRACTOR shall exercise good housekeeping to remove waste and ensure that the ROW, facility construction sites, camp, pipe yards and work sites are tidy and appear well-maintained.

9.4.5.2 Waste segregation

Different types of wastes shall be segregated. This will typically require separate storage areas or physical separation for hazardous and non-hazardous wastes and/or the segregation of different types of hazardous wastes.

CONTRACTOR shall identify all waste at the source, and provide separate containers to allow for segregation of the following individual waste streams (not an exhaustive list):

- Hazardous waste streams:
  - Used oil
  - Hydrocarbon contaminated material (rags, drums, soil, used spill response equipment)
  - Paint and solvents
  - Used oily filters
  - Batteries (dry-cell/lead)
  - Used drums (chemical cans, drums, containers, packages should be treated and disposed as hazardous waste if their content was defined as hazardous material)
  - Any other waste process chemicals
  - Fluorescent tubes
  - Contaminated soil
  - Printer toner.
- Non-hazardous waste streams identified in CONTRACTOR's Waste Study, for which approved organisations exist that can recycle/re-use the materials, potentially including:
  - Scrap metal and welding waste
  - Rubber (e.g. end-of-life tyres)
  - Glass
  - Plastics
  - Wood
  - Paper and card
  - Organic/biodegradable waste
  - Other non-hazardous waste.
- Inert waste.

CONTRACTOR shall implement the following commitment:

7-08	Waste will be segregated to facilitate recycling and stored securely to reduce the risk of escape.

Only one category of hazardous waste may be placed in any one container. Solid and liquid wastes shall not be mixed.

If a hazardous waste is mixed with other waste the entire consignment shall be considered as hazardous.

CONTRACTOR shall segregate any waste that cannot be positively identified as non-hazardous and contain it as hazardous waste until identification or chemical analysis determines its correct classification.

At the WSA, CONTRACTOR shall segregate waste and treat waste (see Waste Treatment below) prior to transport.

9.4.5.3 Waste storage area (WSA)

CONTRACTOR shall establish a waste storage and segregation facility within each campsite or where camps are not used, at the worksite or at another COMPANY approved Project support facility. The size of the Waste Storage Area (WSA) shall be determined by the number of Project personnel (including COMPANY, CONTRACTOR, and subcontractors) and the anticipated volume of waste. The size of WSAs shall incorporate a factor of at least 1.5 above maximum capacity to account for unforeseen circumstances (e.g., inclement weather) and additional guests and personnel.

The CONTRACTOR construction camp plans shall include the locations of the waste storage area ensuring that living quarters are placed at a distance from waste locations in accordance with COMPANY's approved camp layout.

The CONTRACTOR shall submit the design for their waste management areas to COMPANY for approval, prior to construction. Waste management areas will be fenced have lockable gates and as a minimum will be bunded and sheltered where waste is segregated and treated and where waste liquids and hazardous wastes are stored.

Working areas and all emergency installations and escape routes shall be kept free from wastes. Safety areas (muster point, eye-wash station, etc.) shall be established and equipped with fire extinguishers and spill response equipment.

All wastes, shall be transported to the closest waste storage area from the worksites by the CONTRACTOR prior to distribution to the final disposal sites or to approved third parties for recycling. These facilities will serve as a collection, segregation, treatment, stabilisation, labelling, packaging, storage and transfer stations for both hazardous and non-hazardous wastes.

At the WSA CONTRACTOR shall segregate waste and treat waste (see Waste Treatment below) prior to transport.

The WSA shall comprise of a fenced and lockable area with concrete hardstand, shelters, storage containers, and secondary containment for hazardous liquid wastes (oils etc.). Separate storage containers shall be provided for prime recyclables (paper, cardboard, scrap metal), domestic waste, and hazardous waste requiring segregation including oils, oily solids, chemicals and batteries. Care will be taken to ensure that chemicals are kept in separate containers and stored taking into account compatibility in order to avoid a chemical reaction.

The CONTRACTOR WSA facilities shall comply with the following requirements:

- WSA shall be constructed on a concrete pad
- The area shall be fenced and access controlled
- No drums or containers shall be stored directly on the soil
- Facilities shall be designed to prevent any contamination of the adjacent ground

- Liquid wastes shall be stored within a bund that will contain 110 percent of the volume of the largest container or 25% of the inventory, whichever is greatest.
- Collection areas shall be covered to avoid the deterioration of materials
- Vehicle / equipment access shall be maintained
- Areas shall be ventilated
- Dedicated areas for segregated hazardous and non-hazardous wastes shall be provided
- Dedicated areas for the segregation of recyclable and reusable materials from those items intended for disposal
- Signage shall be installed informing employees about the hazard and PPE requirements within the WSA
- Winterisation if necessary, depending on the location of the site
- An oily water separator shall be provided which could service other parts of the site (e.g. vehicle/drum wash area, vehicle maintenance areas etc.). This shall be regularly maintained to prevent build-up of mud and ensure the separator is functioning efficiently. Residence time shall be increased if surfactants and detergents from washing activities enter the separator to ensure discharge meets the Environmental Standards - Appendix B.

CONTRACTOR shall submit the WSA design and location plans to COMPANY for review and approval as per the design requirements found within the Camp Specification. CONTRACTOR shall determine storage container requirements to ensure they are compatible with transport vehicles.

CONTRACTOR shall implement measures to control vermin and prevent the WSA from becoming a health risk.

CONTRACTOR shall display signs informing employees about site hazards and the requirement to wear PPE and shall equip the areas with fire extinguishers and spill recovery equipment as per COMPANY HSE requirements.

CONTRACTOR shall maintain an inventory, MSDSs and the quantity of each type of waste that is held at each the WSA.

The SCPX ESIA has committed to collect and store solid waste during the construction phase and CONTRACTOR shall implement the following commitments:

D5-028	In accordance with the SCPX Waste Management Plan, solid wastes generated by construction activities will be collected in waste storage areas (WSA) located at the camps.
7-08	Waste will be segregated to facilitate recycling and reuse.

The SCPX ESIA has committed to store hazardous waste temporarily and CONTRACTOR shall store segregated hazardous waste securely at the WSA to meet the following commitment:

7-03	A secure hazardous waste accumulation area that meets Project requirements will be used for temporary storage at Project sites prior to transfer to an approved final hazardous storage or disposal facility.

CONTRACTOR shall arrange transport of waste sufficiently frequently to avoid problems with odours, rodents and insects. Storage volumes for all waste types are to comply with permit and COMPANY requirements.

9.4.5.4 Waste handling

CONTRACTOR shall implement the following design commitment:

D5-029	All wastes from the SCPX Project will be managed with the aim of minimising (a) impacts to the natural environment and (b) potential health hazards to personnel. Where appropriate, waste materials will be reused or recycled, with disposal to landfill as a last resort.

CONTRACTOR shall have biodegradable wastes treated at or collected from the campsites at adequate intervals to avoid odours and avoid vermin.

Once pipeline, facility or road construction has been completed, and equipment removed from the ROW, work sites and/or the camp, CONTRACTOR shall remove any type of remaining material, including material left in the machinery maintenance and fuel storage areas, to the WSA for disposal as waste.

CONTRACTOR's WMIP shall explain the process by which vehicles utilised for transporting waste from the ROW and work areas to the transfer stations are selected, equipped, inspected, approved and maintained in accordance with COMPANY HSE requirements.

9.4.5.5 Medical wastes

CONTRACTOR's medical personnel shall collect any medical wastes generated at Project camps and work sites (including syringes, needles, dressings, body tissue, spent medicines), package it in puncture-proof boxes and yellow bags and store it in lockable containers made of appropriate materials. CONTRACTOR's medical personnel shall clearly label the containers as medical waste, make sure they are appropriately documented and have them transported to a COMPANY-approved facility. CONTRACTOR shall ensure the medical provider includes transportation and disposal services for medical waste in accordance with COMPANY requirements. Disposal of medical waste is a CONTRACTOR responsibility and shall be in accordance with the following commitment:

31-06	Medical waste will be disposed of via a Company approved medical contractor or a Company approved incinerator.

9.4.5.6 Food wastes

CONTRACTOR shall install macerators and de-waterers at each of the WSAs at the construction camps to treat food waste. It is assumed that wastewater from de-watered food waste can be disposed of via the site Sewage Treatment Plant (STP) and CONTRACTOR shall include this requirement in the STP specification (Section 10.4.6.2).

9.4.5.7 Drilling/tunnelling waste

The CONTRACTOR shall carry out an environmental risk assessment for the disposal of waste drilling mud or tunnelling fluid to determine appropriate disposal methods based on the material properties and the characteristics of the receiving environment. COMPANY shall approve CONTRACTOR's proposed method. CONTRACTOR shall implement the following commitments:

6-24	Disposal of the drilling mud will be subject to an environmental risk assessment.
39-06	Any additives proposed to be added to the drilling mud will be subject to an environmental risk assessment before their use is approved by Company.

9.4.6 Waste Treatment

CONTRACTOR shall treat waste prior to storage or disposal to render it less hazardous and to reduce its volume (e.g. crushing, drying, composting etc) where possible. Measures to reduce the volume of waste generated as source, shall be implemented by the CONTRACTOR, including but not limited to the provision of composters and/or incinerators, compactors and balers (paper, cardboard, plastic, aluminium cans, metal shavings, paint

cans, etc.); aerosol piercers and crushers; oil filter bleeding and crushing, drum washing and crushing, shredding, bulb and fluorescent tube crushing and mercury recovery.

CONTRACTOR'S WMIP shall propose treatment of waste at the WSA prior to storage or ultimate disposal to render waste less hazardous and reduce its volume.

CONTRACTOR shall immediately treat wastes that cannot be stored for long periods specifically organic/biodegradable waste and food contaminated waste. CONTRACTOR shall investigate the following options for the treatment and disposal of food waste – thermal treatment, biological treatment or other. All options shall be in compliance with national legislation and the HGA requirements (Section 3.1).

CONTRACTOR shall propose a plan for the treatment and disposal of organic/biodegradable waste and food contaminated waste and shall submit to the COMPANY prior to mobilisation. CONTRACTOR shall identify areas designated for waste treatment and their design and how treated waste could be used to improve soil fertility during reinstatement if applicable.

CONTRACTOR shall not burn waste or any material, including during ROW clearance. No burning (controlled or uncontrolled) or burial of waste shall be undertaken, with the exception of COMPANY approved incinerators.

CONTRACTOR shall implement the following commitment:

7-01	Controlled or uncontrolled burning of waste will not be allowed (with the exception of Company approved incinerators).

9.4.7 Waste Disposal

CONTRACTOR shall be responsible for transporting segregated re-usable and recyclable waste (at a minimum paper and cardboard, plastics, glass, scrap metal and any other waste streams where CONTRACTOR or COMPANY identifies suitable COMPANY approved re-use or recycling facilities) from Waste Storage Areas to COMPANY approved recycling facilities. Additional re-cycling and re-use destinations shall be identified and assessed by CONTRACTOR and approved by COMPANY and bulletins shall be issued when destinations are added or removed.

The SCPX ESIA has committed to dispose of hazardous waste to an approved site. CONTRACTOR shall be responsible for the final destination of hazardous waste.

D5-030	Hazardous waste will be forwarded to a waste disposal contractor licensed to receive and treat or export hazardous waste.

CONTRACTOR shall be responsible for the transport of all hazardous waste from the CONTRACTOR WSA to the COMPANY approved treatment or storage area. CONTRACTOR shall ensure that all wastes are packaged securely in containers appropriate to the nature and toxicity of the waste, and clearly labelled, in-accordance with COMPANY policy (including but not limited to the requirements of ADR (The European Agreement concerning the International Carriage of Dangerous Goods by Road).

The SCPX ESIA has committed to dispose of specific waste types at a COMPANY approved Project landfill site.

7-02	Waste will be disposed of at a Company- and Government-approved landfill site

All waste with the exception of surplus soil and sewage and medical waste and drilling/tunnelling mud shall be sent to the WSA. CONTRACTOR shall not make any

arrangements for routing waste or waste materials to any other location without COMPANY approval.

9.4.8 Waste Transport and Transfer Notes

CONTRACTOR shall develop a waste transfer and tracking system, incorporating the use of waste transfer notes (WTN) to track waste movements from the point of generation to the final destination.

Only authorised personnel (i.e. those that have received the appropriate training) will be allowed to complete the WTNs. WTN will be in both English and Azerbaijani). The CONTRACTOR's WTN's format will follow the same format as that currently used in existing operations by COMPANY.

CONTRACTOR shall apply the duty of care principles to waste management activities to ensure that waste is managed from "the cradle to the grave" in accordance with the requirements of this plan and that waste does not pose a threat to human health or the environment.

9.4.8.1 WCP to WSA

Each CONTRACTOR work crew shall be responsible for transferring generated waste to the WCP. CONTRACTOR shall also consider having a mobile waste crew to handle any accumulated waste at the end of the day.

CONTRACTOR shall minimise the handling and transportation of waste, and shall complete a transportation risk assessment of each transport route, that includes consideration of:

- Identification of potential hazards posed by transportation
- The suitability of containers
- Provision of suitable spill kit or equivalent
- Appropriate labelling
- Transportation documentation (e.g., transfer and delivery notes, information on the potential risks and hazards of the waste consignment)
- Remedial clean-up requirements in the event of a spill.

CONTRACTOR shall ensure that vehicles utilised to transport waste are legally compliant and fit for purpose and equipped to prevent leaks or spills of liquid waste and are covered to prevent dry or solid wastes from being dropped or blown away. CONTRACTOR shall ensure that all vehicles only load waste onto a vehicle that is authorised by the competent authority to transport the appropriate category of waste. CONTRACTOR is required to use vehicles for the collection of waste (liquid and solid) that are fit for purpose, roadworthy, and incorporate contractual safety features.

CONTRACTOR's WMIP shall identify COMPANY-approved routes for transporting wastes between the WCP and the WSA.

CONTRACTOR shall implement a COMPANY approved waste tracking system governing all waste transfers from the WCPs to the WSA and from the WSA to the final destination (see below).

At the WSA, CONTRACTOR shall enter waste volumes per the Waste Transfer Note WTN into an electronic register in a format to be agreed with COMPANY.

At a minimum, the following will be recorded:

- Waste originator
- Waste description and type(s)
- Consignment reference number

- Form (e.g. solid, liquid, sludge)
- Quantity(ies) (weight) and units (e.g. number of containers, drums)
- Name and signature of originator
- Name and signature of waste transporter plus receiving party.

CONTRACTOR shall keep waste records in accordance with the legislation cited above.

9.4.8.2 WSA to final destination

CONTRACTOR shall transport properly segregated non-hazardous, non-recyclable, non-reusable and non-putrescible waste and segregated hazardous waste from the WSA to its final approved destination (COMPANY Central Waste Accumulation Area; Waste Processing and Recycling Centre; COMPANY landfill or other COMPANY approved site).

CONTRACTOR shall be responsible for transporting segregated re-usable and recyclable waste (at a minimum paper and cardboard; plastics; glass; scrap metal and any other waste streams where CONTRACTOR or COMPANY identifies suitable COMPANY approved re-use or recycling facilities), from Waste Storage Areas to COMPANY approved recycling facilities.

In addition CONTRACTOR is responsible for the transport (if required) of putrescible waste residues, medical waste, uncontaminated soil and drilling/tunnelling mud to a COMPANY approved facility, in accordance with the requirements of this plan.

Transfer of waste from the WSA to a third-party facility shall be fully documented on a Waste Transfer Note. At a minimum, the following will be recorded:

- Waste originator
- Waste description and type(s)
- Consignment reference number
- Form (e.g. solid, liquid, sludge)
- Quantity(ies) (weight) and units (e.g. number of containers, drums)
- Name and signature of originator, and
- Name and signature of waste transporter plus receiving party.

Where appropriate, Material Safety Data Sheets (MSDS) will accompany waste consignments to identify any special waste handling requirements and properties. MSDS shall be provided by the CONTRACTOR for all hazardous wastes in both English and Azerbaijani.

The WTNs shall be signed by the WSA operator and by the driver when the waste leaves the WSA. CONTRACTOR shall retain a copy at the WSA and enter the data from it into an electronic waste management database.

Another copy of the WTN shall be signed by the receiver at the reuse/ recycling organisation or storage/disposal facility when the waste is delivered. This copy shall be kept on file by the receiving party. CONTRACTOR (depending on who is responsible for the transfer of the waste) shall keep a third copy of the completed Waste Transfer Note on file signed by all parties. A fourth copy of the WTN shall be returned to CONTRACTOR at the WSA. CONTRACTOR shall maintain all records of waste transferred.

Waste Transfer Notes will be regularly reviewed in order to confirm consistency between copies and identify any issues. In addition, an assurance check of Waste Transfer Notes will be undertaken by COMPANY in order to provide assurance that all WTNs are properly reconciled.

CONTRACTOR shall submit a monthly waste report to COMPANY stating the types and quantity of wastes received at the WSA, and the quantity of waste delivered to each recycling organisation or disposal facility.

9.4.8.3 Transboundary disposal of wastes

Transboundary shipment of wastes shall be restricted to those hazardous wastes for which there is no final disposal route available in Azerbaijan.

The transboundary movement of hazardous wastes and other wastes shall be:

- Reduced to the minimum consistent with the environmentally sound and efficient management of such wastes
- Conducted in a manner that will protect human health and the environment against the adverse effects that may result from such movement
- Restricted to countries that are party to the Basel Convention and who have not prohibited waste imports.

Information about a proposed transboundary movement of hazardous wastes shall be provided to the recipient country in accordance with the requirements of the Basel Convention, and shall include details of the effects of the proposed movement on human health and the environment within the context of the Basel Convention. All waste will be accompanied by a movement document (waste transfer note) from the point at which the transboundary movement commences to the point of disposal. Each person that takes charge of the waste shall sign the movement document upon either delivery or receipt of the waste. Confirmation of receipt and disposal of the waste by the final disposer should be received. If confirmation of correct disposal is not received, the appropriate authorities should be informed. The following information shall be provided on the movement document:

- Exporter of the waste
- Generator(s) of the waste and site of generation
- Disposer of the waste and actual site of disposal
- Carrier(s) of the waste 1/or his agent(s)
- Subject of general or single notification
- The date the transboundary movement started and date(s) and signature on receipt by each person who takes charge of the waste
- Means of transport (road, rail, inland waterway, sea, air) including countries of export, transit and import, also point of entry and exit where these have been designated
- General description of the waste (physical state, proper UN shipping name and class, UN number, Y number and H number as applicable)
- Information on special handling requirements including emergency provision in case of accidents
- Type and number of packages
- Quantity in weight/volume
- Declaration by the generator or exporter that the information is correct
- Declaration by the generator or exporter indicating no objection from the competent authorities of all States concerned which are Parties
- Certification by disposer of receipt at designated disposal facility and indication of method of disposal and of the approximate date of disposal
- Full name and addresses, telephone, telex or telefax numbers of the exporter, generator(s), disposer and carrier(s) of the waste, and the name, address, telephone, telex or telefax number of the person to be contacted in case of emergency.

Wastes that are to be the subject of a transboundary movement shall be packaged, labelled, and transported in conformity with generally accepted and recognised international rules and standards in the field of packaging, labelling and transport

9.5 Verification and Monitoring

9.5.1 Waste Monitoring and Reporting

The SCPX ESIA has committed to monitoring and auditing waste management.

CONTRACTOR shall implement the following commitment:

7-04	Waste management practices will be subject to regular monitoring and auditing.

CONTRACTOR shall maintain a record of waste management activities including but not limited to:

- An inventory of the quantity of each category of waste that is held at the WSAs
- A record and volume of waste deliveries from the specific WCPs to the WSAs by category and source
- A record and volume of waste deliveries from the WSA to final destination by category
- All completed WTN documentation.

CONTRACTOR shall:

- Maintain a record and volume of waste deliveries from the WSA to final destination by category and final destination
- Keep all completed Waste transfer note documentation
- Undertake audits and inspections of third-party waste management facilities in coordination with COMPANY.

9.5.2 Waste Reporting Requirements

CONTRACTOR shall provide to COMPANY monthly:

- A summary of its waste data
- A report of field inspection results, corrective actions implemented and close out of audit actions,
- A report of performance on the KPIs for waste (see Section 20.4).

10 POLLUTION PREVENTION PLAN

10.1 Scope

The scope of this Management Plan relates specifically to the following pollution prevention issues:

- Training in Pollution Prevention and COSHH
- Energy Efficiency
- Air emissions
- Wastewater Management (e.g. sanitary effluent, site effluent, hydrotest water)
- Noise and Vibration Management
- Oil and Chemical Management
- Hazardous Liquid Wastes.

10.2 HGA Standards and Practice

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered has been described below.

- World Health Organisation Air Quality Guidelines, Global Update 2005
- World Health Organisation Air Quality Guidelines for Europe, 2nd Edition, 2000
- EU Directive on ambient air quality and cleaner air for Europe (2008/50/EC)
- UK Air Quality Standards Regulations 2007 (enacting EU Directive (2008/50/EC)
- IFC Policy on environmental and social sustainability (Performance Standard 3) - January 2012
- IFC Environmental Health and Safety Guidelines: Onshore Oil and Gas Development, 2007
- British Standard 5228 Part 1; 2009 ‘Code of practice for noise and vibration control on construction and open sites – Part 1: Noise’
- British Standard 5228: Part 4: 1992 ‘Code of practice for noise and vibration control applicable to piling operations’
- British Standard 7385: Part 2: 1993 ‘Evaluation and measurement for vibration in buildings Part 2. Guide to damage levels from ground-borne vibration’
- EU Urban Wastewater Treatment Directive (91/271/EEC)
- UK Urban Waste Water Treatment Regulations (England and Wales, 1994)
- EU Freshwater Fish Directive (2006/44/EC)
- Model Procedures for the Management of Contaminated Land (CR11) (DEFRA and the Environment Agency, 2004)
- Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination (Environment Agency, 2006).

Specific guidance considered is described below:

- Projects apply pollution prevention and control technologies that avoid, minimise or reduce adverse impacts on human health and the environment while remaining technically and financially feasible and cost-effective
- Projects optimise energy efficiency and greenhouse gas (GHG) emissions by:
    - Promoting the reduction of Project-related GHG emissions

  - Use substitutes for halon in fire protection systems, and select refrigerants based on their environmental impact.
- Projects control air quality by:
  - Maintaining an emissions inventory
  - Identifying sensitive receptors and identifying ambient air quality guidelines
  - Specifying use of low sulphur content fuel
  - Implementing air quality monitoring.
- Projects control dust, noise, vibration, odour and light pollution by:
  - Minimising or modifying activities that lead to elevated dust levels, and watering areas from which topsoil has been stripped
  - Insulating and locating equipment to reduce noise where appropriate
  - Designing out odour
  - Creating opportunities to eliminate or minimise visual intrusion by lighting.
- Projects minimise their physical impacts and adapt for changes in climate by:
  - Designing, locating and constructing projects to minimise impacts associated with water runoff, leaching of contaminants and dust fallout
  - Selecting inert materials to stabilise pipelines or provide foundations
  - Evaluating the potential for changes to soil, surface water and groundwater properties from contamination caused by leaching, runoff and acid drainage (e.g., acid sulphate soils, pyritic soils and construction materials such as aggregates and from waste disposal sites such as landfills)
  - Assessing natural water and sediment flow (e.g. in streams, rivers, wetlands and as surface/sheet flow) during site evaluation and implementing mitigation measures (including bridge and culvert construction) to minimise disruption to natural water flow (taking account of flood conditions).
- Projects implement the following pollution prevention and control measures if pipeline hydrotest water is discharged to surface waters or land surface and in accordance with approval from MENR and other agencies:
  - Reduce the need for chemicals by minimising the time that test water remains in the pipeline;
  - Select chemical additives based on environmental criteria (concentration, toxicity, biodegradability, bioavailability, and bioaccumulation potential
  - Re-use the same hydrotest water for multiple tests
  - Using a lined and fenced holding pond to allow time for the toxicity of the water to decrease where necessary
  - Consider the volume and composition of the test water and the stream flow or volume of the receiving water body when selecting a discharge site. Dissipate the discharge flow with break tanks, riprap, sheeting, tarpaulins etc and Install sediment control methods (e.g. silt fences, sandbags or hay bales) to protect aquatic biota, water quality, and water users
  - Monitor receptors both upstream and downstream of any discharge to a water body
  - Select site for discharge to land that avoids flooding, erosion, or lowered agriculture capability of the receiving land.
- Projects carry out an assessment of soil, sediment and groundwater contamination for the Project impacted area (including an appraisal of pre-existing and existing soil and groundwater conditions) and implement appropriate measures to address any risks.
- Projects minimise wastewater and treat it to meet a quality specification by:
  - Treating grey and black water from showers, toilets and kitchen facilities to a specified standard
  - Using measurement, control and sampling methods that achieve the specified wastewater discharge standards
  - Maintaining the capability to segregate and store treated waste water that does not meet the specified standard to allow for subsequent treatment.
- Projects avoid the non-routine or accidental release of pollutants by installing bunding, drainage and treatment for areas that could be contaminated with oil and implementing fuelling restrictions near watercourses.

10.3 Roles and Responsibilities

Roles and responsibilities are defined in Section 4 of the ESMMP.

10.3.1 Company

COMPANY shall be responsible for:

- Developing an interface Emergency Response Plan, to link CONTRACTOR emergency response plan to COMPANY plan
- Assisting CONTRACTOR with response to Tier 1 spills
- Provision of a Spill Response CONTRACTOR to respond to Tier 2-3 spills.

10.3.2 Contractor

In addition CONTRACTOR shall be responsible for:

- Developing an Emergency response plan to respond to all Tier 1 spills and identifying protocols for reporting Tier 2-3 spills to COMPANY
- Providing assistance to response to Tier 2-3 spills as directed by the COMPANY
- Identifying locations where specific pollution prevention and control measures may be required
- Maintaining a register of all emissions and discharges.
- Providing and maintaining adequate stocks of pollution prevention and control equipment (e.g. drip trays, spill kits and booms) at locations to be agreed with COMPANY
- Ensuring that the workforce is adequately trained in the deployment and use of pollution prevention and control equipment
- Reporting any spills or pollution events to COMPANY in accordance with the Project Incident Reporting System
- Identification and agreement of ground or surface water abstractions and liquid effluent discharges with Government departments and support on site visits in accordance with permit/approval conditions.

10.4 Impact Avoidance and Mitigation

This section details measures that have been adopted by the Project to prevent pollution and mitigate impacts of any pollution that may occur during the construction or commissioning phases of the SCPX Project. CONTRACTOR shall develop a Pollution Prevention Implementation Plan that, as a minimum, complies with the measures included in this Pollution Prevention Management Plan.

10.4.1 Training in Pollution Prevention and COSHH

CONTRACTOR shall train personnel to understand the potential of Project activities such as the discharge of wastewater and hydrotest water to pollute water courses, and the environmental consequences of failure to contain potentially harmful chemicals.

The SCPX ESIA has committed to induction training on noise minimisation and to training personnel in the safe handling of hazardous materials and in response to spills.

CONTRACTOR shall implement the following commitments:

Pipeline, camps, access roads and all facilities:

6-09	Relevant personnel will be trained in safe use and handling of hazardous materials.
6-11	Relevant construction personnel will be trained in use of spill kits and disposal practices.

25-03	Project induction training will include instructions about minimising noise disturbance.
6-12	A trained rapid response team will be mobilised in the event of spillage of hazardous materials.

With respect to pollution prevention, CONTRACTOR shall ensure that all of its personnel fully understand:

- The importance of switching off equipment when it is not in use
- The potential environmental impacts of the Project with regard to noise, dust, wastewater discharges and the containment of fuel, chemicals and hazardous liquid waste
- The potential health impacts of exposure to fuel, chemicals and hazardous liquid waste
- The mitigation measures that have been adopted to address those impacts and how and where to apply these measures
- The positioning of machinery on site to reduce noise emissions to neighbouring communities
- Any restrictions on working hours to reduce noise impacts
- That fuel and chemical storage is only allowed in designated areas
- The procedures to be followed in the event of a non-compliance with the environmental requirements
- How to deal with unforeseen environmental incidents including spill response and reporting procedures
- Their roles and the roles of other CONTRACTOR staff and COMPANY personnel with respect to environmental issues.

CONTRACTOR shall arrange more detailed environmental training courses for those supervising refuelling activities and chemical handling, as well as those responsible for treating and discharging wastewater and hydrotest water into watercourses and other activities deemed to have the potential to cause pollution.

10.4.2 Air Emissions from Vehicles, Plant and Equipment

CONTRACTOR shall implement the following commitments:

Pipeline, camps, access roads and all facilities:

23-02	Equipment and vehicles will be regularly maintained in accordance with the manufacturer's recommendations to maximise fuel efficiency and help minimise emissions.
CONTRACTOR and COMPANY will implement the following commitment	
23-03	Preferentially, the project will use fuel that has low sulphur content of 0.1%, where practical and available within Azerbaijan.

CONTRACTOR shall select vehicles that are appropriate for the task required and are modern, well maintained and in good working order:

CONTRACTOR shall develop a routine maintenance and inspection programme, including a maintenance log, for all vehicles and stationary equipment (e.g. generators and boilers). Routine maintenance shall be to a high standard to ensure that vehicles and equipment are safe, operating efficiently and that emissions and noise are minimised. All vehicles and equipment shall be identified by CONTRACTOR using a sticker system or similar to demonstrate that they have a valid maintenance and inspection certificate.

All vehicles and equipment, including vehicles and equipment not purchased ‘as new’ after the CONTRACT award, shall be maintained by CONTRACTOR so that emissions levels are

maintained at levels that are as low as is reasonably practicable. Any vehicles or equipment seen to be emitting black smoke shall not be permitted to continue work and shall be sent for maintenance or replaced by CONTRACTOR.

CONTRACTOR shall establish a workshop area in the camps to perform maintenance work on construction machinery and vehicles, as needed. The area shall have a sealed (e.g. concrete) floor, a roof to protect from rain/snow and a bund to protect surrounding soils and provide containment measures in the event of a spill of lubricants, fuel or other potentially hazardous substances. The area shall be connected to an oil/water separator via an oily water drainage system and shall have a shut off valve with padlock.

CONTRACTOR shall ensure that its generators, including camp generators, comply with manufacturer's specifications.

CONTRACTOR shall use diesel fuel with a low sulphur content (0.1%).

CONTRACTOR shall carry out quantitative exhaust emissions monitoring on vehicles and equipment to ensure it meets manufacturer's specifications at COMPANY's request.

10.4.3 Dust Management

Before and during construction, CONTRACTOR shall, taking account of soil types, locations of communities, sensitive crops and weather conditions, identify areas where dust from the ROW and from access roads is likely to have an impact on human, plant or animal receptors within 300m, taking account of soil types, locations of communities, sensitive crops and weather conditions.

During construction, the CONTRACTOR shall implement the following commitments:

Pipeline, camps, access roads and all facilities:

24-01	Contractor will be required to have an adequate supply of bowsers and to regularly damp down the ROW, access roads and village roads used by construction traffic during dry conditions.
24-02	A strict Project speed limit of 30km/hr will be enforced for project vehicles using unmade tracks and the ROW.
23-06	Vehicles carrying fine materials will be sheeted to help prevent dust blow and spillages.
10-19	Protection measures will be put in place to prevent any water used for dust suppression from causing silt problems for nearby wetlands or watercourses.
24-07	Treated waste water will be used for damping down road surfaces to mitigate dust generation.

If CONTRACTOR is proposing construction work in such areas where dust has the potential to impact receptors, or is carrying out types of work that could give rise to wind-borne dust and chemical particles, it shall propose dust suppression measures that shall include:

- Water spraying the running track within the ROW and/or the surface of the access road with water; CONTRACTOR shall provide dedicated water bowsers for this task
- Imposing a speed limit of 30km/h on unmade roads
- Storing and handling soil, aggregate and chemicals in a way that presents fugitive particles (e.g. water spraying soil piles, water spraying when aggregate is mixed)
- Requiring vehicles transporting soil and aggregate to be covered for example using tarpaulins or covers that prevent the escape of dust, and prohibiting such vehicles from stopping near settlements
- Keeping site roads and approaches to watercourse crossings free from deposits of mud and silty material

- Using windbreaks, netting screens or semi-permeable fences to reduce dust emissions from working areas close to sensitive residential or agricultural locations or natural habitats.

The selection and frequency of dust suppression measures shall be dictated by site specific conditions and selected to prevent nuisance to local communities, dusting of crops or other flora. During windy conditions, it is likely that additional measures will be required compared to during calm conditions.

CONTRACTOR shall implement the following location-specific commitments:

24-12	The distances from the nearest dwellings to temporary working areas will be determined and commitment X8-04 implemented if any dwellings are close enough for there to be medium or high predicted impacts from dust during construction.
X8-04	At locations where the proposed SCPX route passes in close proximity to dwellings (KP62.2, BVR A06, KP104-KP108, KP116-KP120, KP121-KP125, KP287-KP289) and at camps and pipe storage yards close to dwellings, the Project will undertake monitoring for dust generation and damping down as necessary.
D8-05 Saloghlu Pipe Storage Area	There will be a 50m buffer zone between the herder's temporary dwelling and the pipe storage boundary fence.

Protection measures (e.g. silt fencing) will be implemented where necessary to prevent water used for dust suppression from causing silt problems for nearby wetlands or watercourses.

CONTRACTOR's Pollution Prevention Implementation Plan shall define measures for these locations and shall identify:

- The range of dust suppression measures and situations when they are to be applied
- The frequency of water spraying
- Dust monitoring methods to be used to demonstrate that dust suppression is effective
- Monitoring of dust levels to demonstrate conformance with the Project environmental standards.

CONTRACTOR shall obtain all necessary permits from the relevant authorities for the extraction of water used for dust suppression (or if treated wastewater is proposed for use in water spraying). If treated wastewater is to be used for water spraying CONTRACTOR shall demonstrate that it poses little or no risk to human health and is in compliance with the Project Standards.

10.4.4 Road and Rail Crossings

COMPANY shall incorporate the following commitments into the project design which shall be implemented by the CONTRACTOR during construction:

D11-02	There will be increased depth of cover at crossings: road crossings will generally be installed with 2.0m cover; rail crossings have at least 3.0m cover and unpaved roads will have at least 1.5m cover.
D11-03	Concrete slabs will be installed at open-cut road crossings to protect SCPX from future road construction activities and excavations along roads or the verges.

10.4.5 Watercourse Crossings

CONTRACTOR shall carry out the following commitments:

4-12	The construction contractor(s) will produce method statements incorporating plans for erosion control, sediment control and reinstatement before work begins at river crossings.
6-26	Drilling and tunnelling mud will be stored in impermeable lined bunded areas or tanks.
7-16	The river crossing contractor will prepare a plan to respond to an outbreak of drilling mud if this occurs during a non-open-cut crossing, including clean up and remediation for outbreak on land and liaison with downstream users in the event of outbreak in the water.
10-18	Only essential construction vehicles (as approved by the Company) will be allowed to enter rivers or streams and only with prior examination of the vehicles for fuel/lubricant leaks. Generally, the Construction traffic will cross watercourses via a flume/culvert (piped bridge), which will be sized so as not to restrict the flow in the watercourse and allow fish and other aquatic organisms to pass through
11-02	Construction design of river and stream crossings will seek to ensure minimal interruption to flow by using measures such as pumping, channel diversions and fluming.
11-05	Watercourse crossing methods will be developed with the aim of minimising the mobilisation of sediments.

CONTRACTOR shall implement the following location-specific commitments:

X5-17 KP221, KP240, KP261, KP277, KP303, KP323, KP324, KP345, KP369	Site-specific crossing designs for open-cut watercourse crossings will be prepared that will specify the depth of installation and set back distance, based on a hydrological assessment of the river, and will consider the need for protection works to protect the integrity of the pipe.

CONTRACTOR shall submit detailed method statements for river crossing construction to SCPX that include:

- The size and gradient of diversion pipes, channels or temporary flumes to channel the river flow away from construction works (forming bridges across watercourses where necessary)
- Flume pipe sizes used during flumed watercourse crossing construction will be calculated so that the maximum anticipated flow in the watercourse will not exceed 80% of the flume pipe(s) capacity. Flumes will be cleaned out during construction as needed to maintain adequate flow capacity
- Entry and exit of river water into the diversion at the normal river level (without cascade from the pipe or channel)
- The use of sediment filters (e.g. straw bales) and sediment barriers (e.g. fencing), bunds or settling tanks to minimise any increase in sediment load on the river
- Plans to reduce the potential impact of the works in the event of unpredicted water flow or flooding
- Spill response equipment (for leaks from construction equipment).

CONTRACTOR shall reinstate the banks and bed of the river at the crossing points to near original condition using rip rap or gabions where necessary to reinforce the river banks and prevent erosion as per the requirements of the Reinstatement Plan.

10.4.6 Wastewater Management

10.4.6.1 General

CONTRACTOR shall implement the following commitments:

Pipeline, camps, access roads and all facilities:

14-06	All wastewater discharges will be undertaken in compliance with the Project Environmental Standards.
14-09	The applicable discharge permits will be obtained for any new planned liquid discharges, prior to the discharge commencing.

CONTRACTOR shall ensure that discharge of wastewater (including sewage from the temporary construction facilities and hydrotest water to surface watercourses) does not impact surface water ecology.

CONTRACTOR's Pollution Prevention Implementation Plan shall address the discharges described below and shall include an identification of all potential wastewater sources, potential composition, treatment techniques and discharge points. CONTRACTOR shall carry out an environmental appraisal for each potential discharge location to demonstrate discharges will not impact surface water ecology or downstream water users, terrestrial ecology and will be in compliance with the Project Environmental Standards, Appendix B.

CONTRACTOR's Pollution Prevention Implementation Plan shall include control measures to prevent wastewater discharges causing erosion.

CONTRACTOR shall implement the following commitments:

Pipeline, camps, access roads and all facilities:

3-17	The rate of discharge of water will be controlled to reduce the risk of soil erosion.
10-15	Sediment reduction measures will be implemented including but not limited to discharge of pumped water via break tanks or sediment mats.

CONTRACTOR shall prohibit its staff and its subcontractors from bathing or washing clothes and vehicles/equipment in rivers or watercourses.

CONTRACTOR shall be responsible for obtaining all permits necessary for discharge of wastewater.

10.4.6.2 Sanitary discharges

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

D5-106	The camps will discharge domestic wastewater treated by a sewage treatment package designed to meet the Project standards and permit requirements.
D5-080	If permanently manned, domestic sewage and wastewater from the pigging station will either be treated on or off-site.

CONTRACTOR shall engage a specialist sewage treatment package vendor who will design, install, operate and maintain the sewage treatment packages at construction camps in accordance with the Project environmental standards (Appendix B) for the discharge of sanitary effluent.

CONTRACTOR shall ensure that the specialist sewage treatment package vendor supplies a dedicated, competent operator for each treatment unit. CONTRACTOR shall submit a contingency plan for treatment plant maintenance periods or downtime for COMPANY approval. This shall include as a minimum the provision of holding tanks which can be used to retain emergency overflows or discharges which do not meet the Project Standards.

CONTRACTOR shall install an industry recognised manufactured grease trap at the outlet of the kitchen(s) facilities in consultation with the STP vendor to prevent greases and fats from entering sewage treatment streams. CONTRACTOR shall provide self-clean and low maintenance grease traps with an effluent quality of less than 100ppm of oil and grease. Flow meters shall be installed at the entrance to all STPs.

CONTRACTOR shall preferentially discharge treated effluent, in accordance with the Project Standards, to land. Prior to any discharge CONTRACTOR shall evaluate the soil permeability and construct engineered soakaways where required to avoid impacts on land, surface water drainage and groundwater.

For areas located away from the construction camps e.g. along the ROW and at other remote work areas, toilets shall be provided by CONTRACTOR and installed at a designated area to prevent surface water, ground water or soil contamination in case of accidental spill. CONTRACTOR shall investigate the feasibility of using dry or composting toilets at remote areas.

Workers shall be appropriately trained by CONTRACTOR in the maintenance of these portable toilets, including in minimising the production of odours and eliminating pathogenic microorganisms and CONTRACTOR shall maintain toilets in a clean and hygienic condition.

Toilets provided by CONTRACTOR, shall be emptied regularly to prevent contamination of soil and water. Waste shall be transported for final treatment and disposal at the main construction camp by the CONTRACTOR. Sewage Treatment Units shall therefore be appropriately sized to allow for waste generated at the camp and for waste transported from remote locations e.g. the ROW which shall be discussed with the STP vendor.

All solid sanitary waste shall be disposed of in accordance with the Waste Management Plan.

10.4.6.3 Site effluent discharges

CONTRACTOR shall install wastewater treatment units where appropriate to remove oil, chemical residues, and suspended solids so that all its wastewater generated from ‘industrial’ sources (including vehicle maintenance, waste transfer stations, concrete batch plants and other not-normally clean sources) meets the Project environmental standards (Appendix B) before it is discharged.

10.4.6.4 Trench water management and disposal

CONTRACTOR shall undertake the following commitments for the discharge of trench water, which is uncontaminated water that has accumulated in excavations or within the construction site (reference to trench water in the commitments below shall include water from these additional sources):

Pipeline, camps, access roads and all facilities:

3-21	Measures to minimise scour and reduce sediment load will be implemented at locations where hydrotest water or other pumped water (including trench water) is discharged to surface watercourses or to land (e.g. controlled rate of discharge and deployment of geotextile mats or other physical erosion prevention measures).
3-24	At locations where trench water or hydrotest water or other pumped water discharges causes scour or soil erosion, eroded areas will be reinstated.

10-02	The Project will aim to avoid the direct discharge of trench water to watercourses, except where approved by the Company.
10-03	The locations for discharge of hydrotest water and where possible trench water, will be identified in the Contractor's Pollution Prevention Implementation Plan.
10-04	If discharge of trench water to a watercourse is unavoidable, discharge will be through a filtering medium.

CONTRACTOR shall implement measures to prevent silty/turbid discharge water from trench dewatering operations from entering any drain/water body/wetland, unless it is dry and well vegetated. All dewatering intake hoses will be elevated from the bottom of the trench to avoid drawing bottom silt through pumping operations. If the discharge point for trench dewatering is less than 30m from any watercourse, the discharge shall be directed through a filter bag or other filtering medium (to be approved by the COMPANY where there are downstream users which have the potential to be affected) and/or into areas contained by erosion control barriers. For discharges which are greater than 30m from a watercourse, depending on the local terrain and vegetative cover, filtering mediums may be required. CONTRACTOR shall assess the local conditions at the discharge location, considering these factors, and determine whether a filtering medium is necessary. This assessment shall be documented. Pumped discharges shall be made at a rate that does not cause riverbed disturbance. Sediment settling ponds shall be installed where other measures to control erosion and sediment in runoff are not effective.

10.4.6.5 Surface run-off

CONTRACTOR shall install such containment berms or ditches as may be necessary to prevent surface runoff originating from construction materials such as cement, fresh concrete, lime and clay, from reaching water bodies or changing the quality of the soil.

CONTRACTOR shall monitor surface water quality around the pipeline route and construction sites in waters that could be affected by run-off.

CONTRACTOR shall design new access roads with adequate slope and cross-fall drainage to channel run-off safely to off-road soakaways without causing erosion or siltation.

10.4.6.6 Storm water

Storm water drainage systems shall be designed to perform for local rainfall / snowfall conditions to ensure no surface water accumulation at the camp area.

CONTRACTOR shall provide an effective collection and disposal systems for storm water from all paved areas and buildings. Drainage shall be designed so as to prevent any inflow of storm water to camp sewerage system (e.g. via manholes) and to prevent any contaminated wastewater streams (e.g. vehicle wash area) from entering drainage systems.

CONTRACTOR shall design in precautions against flooding and erosion to maintain the function of the camp and worksites in high rainfall and flash flood conditions.

Design drawings of the site drainage system shall be submitted to and approved by COMPANY.

Potentially contaminated storm water shall be routed to wastewater treatment units to remove oil, chemical residues, and suspended solids so that all its wastewater generated from ‘industrial’ sources (including vehicle maintenance, vehicle wash areas, waste transfer stations, and other not-normally clean sources) meets the project environmental standards (Appendix B) before it is discharged.

CONTRACTOR shall consider routing all potentially contaminated wastewater (excluding sanitary wastewater) where appropriate to an, appropriately sized treatment unit capable of achieving the standards in Appendix B, Table 1-6.

10.4.6.7 Disposal of hydrotest water

CONTRACTOR shall implement the following commitments:

Pipeline:

10-03	The locations for discharge of hydrotest water and where possible trench water, will be identified in the Contractor's Pollution Prevention Implementation Plan.
10-06	Before hydrotesting, the Contractor will prepare, and submit for Company approval, a hydrotest plan.

CONTRACTOR shall be required to prepare a comprehensive plan for the implementation of hydrostatic testing, which will include information on the quantity and quality of water needed, the proposed use of any chemical additives, an evaluation of available water resources in the relevant regions and proposed abstraction points, as well as a discharge proposal in accordance with the requirements below, the project environmental standards (Appendix B) and any relevant specifications. This shall also be in accordance with the requirements of the Resource Management Plan, including the hierarchical approach to the sourcing and use of water and the use of chemicals (Section 11).

CONTRACTOR's Pollution Prevention Implementation Plan shall propose measures to minimise the environmental impact of the discharge of hydrotest water.

CONTRACTOR shall line any holding ponds used for the storage of hydrotest water with an impermeable liner. Any deviations to this requirement shall be subject to COMPANY approval and based on the results of a risk assessment, assessing the potential impacts of the deviation, which shall be undertaken by the CONTRACTOR and provided to the COMPANY.

CONTRACTOR shall undertake the following commitments:

Pipeline:

10-10	Water (including hydrotest water) will be tested before discharge and treated to meet the Project Environmental Standards.
10-11	Hydrotest water will be treated using diffusers to entrain oxygen in a break tank, and filtration will be used with the aim of minimising suspended solids, prior to discharge. Flow rate will be controlled to reduce the risk of soil erosion and disturbance to river bed sediment.
10-21	The direct discharge of hydrotest water to watercourses and soakaways will be subject to the results of the chemical risk assessment. The use of evaporation basins will be considered subject to the availability of land and an environmental and social assessment.

CONTRACTOR's Pollution Prevention Implementation Pan shall nominate locations for the discharge of hydrotest water.

CONTRACTOR shall assess the nominated discharge locations on the basis that:

- All discharges will be in compliance with the Project Standards
- Discharge into main rivers with significant volumes and flow has the potential for low impact if they can receive the discharges without altering their current regime. Selection of discharge locations with the greatest flow of water offer good dilution and prevent loss of fish
- Discharge back to the originating water body has the potential for low impact if the water quality parameters are no worse than those recorded when the water was abstracted

- CONTRACTOR's assessment should consider downstream uses of the river. Discharge into rivers with water not suitable for human consumption or irrigation shall be preferred
- Vegetated, non-erosive areas for discharge are preferable
- Discharge sites on land shall be selected to prevent flooding, erosion, or lowered agriculture capability of the receiving land. Direct discharge to land immediately upstream of community / public water intakes shall be avoided
- Discharge to areas of surface water vulnerability or groundwater vulnerability shall be avoided (as defined in the ESIA).

CONTRACTOR shall install erosion/scour protection at hydrotest water discharge points to slow the flow of the discharge and prevent substratum erosion. The use of sediment control measures before discharging into main rivers and/or water bodies (e.g. sedimentation ponds, sediment barriers, and water flow control devices) shall also be used to minimise any increase in sediment load on the river.

Facilities
With regards to hydrotesting during commissioning of facility equipment CONTRACTOR shall undertake the following.

10-06	Before hydrotesting, the Contractor will prepare, and submit for Company approval, a hydrotest plan.
10-03	The locations for discharge of hydrotest water and where possible trench water, will be identified in the Contractor's Pollution Prevention Implementation Plan.

For facilities the test plan shall also cover chemical cleaning of pipework and include a chemical assessment and quantify disposal quantities and disposal. Neutralisation is the preferred option and shall be implemented by CONTRACTOR, including the provision of competent analytical chemists and other specialists as necessary to design and implement the neutralisation process.

10.4.6.8 Vehicle and equipment washing and maintenance

The SCPX project has committed to the following which shall be implemented by the COMPANY and CONTRACTOR:

Pipeline

10-22	Washing of Project plant and vehicles in watercourses will not be undertaken.
10-18	Only essential construction vehicles (as approved by the Company) will be allowed to enter rivers or streams and only with prior examination of the vehicles for fuel/lubricant leaks. Generally, the Construction traffic will cross watercourses via a flume/culvert (piped bridge), which will be sized so as not to restrict the flow in the watercourse and allow fish and other aquatic organisms to pass through.

CONTRACTOR shall restrict vehicles and equipment from entering watercourses when water is present or prohibit them being washed in watercourses at any time.

Where vehicles must enter watercourses, they will be cleaned and inspected (using a pre-defined checklist) beforehand to prevent leaks of oil and lubricants into the watercourse. CONTRACTOR shall retain inspection checklists and these shall be made available to the COMPANY upon request.

CONTRACTOR shall require all machinery, vehicles and vehicle wheels to be washed and maintained in dedicated areas which use a re-circulatory system with no overflow, have sealed (e.g. concrete) floors, kerbs or bunds and drains leading to oil/water separators.

CONTRACTOR shall install and silt traps before the oil/water separator and regularly maintain the traps to prevent accumulation of sediment affecting separator performance. The effluent shall be contained for treatment and disposal in accordance with the project environmental standards (Appendix B).

10.4.7 Noise and Vibration Management

10.4.7.1 Noise control measures

The SCPX ESIA has committed to noise abatement and to restrict working hours.

Prior to construction the CONTRACTOR shall undertake the following commitment:

25-20	The distances from the nearest dwellings to temporary working areas will be determined and commitments 25.09, X9.03 and X9.04 implemented where dwellings are close enough for there to be medium or high predicted impacts from noise during construction.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

25-01	During construction, work will generally be undertaken in daylight hours (excluding specified operations). Where people live in close proximity to the works, or there is a high potential for disturbance, a location-specific risk assessment will be undertaken for activities undertaken between 7pm and 7am.
25-05	Noise will be monitored periodically against the Project Environmental Standards.
25-09	During construction of the pipeline and facilities and operation of the construction camp and pipe storage areas, where the works are less than 400m from residential buildings for longer than one month, periodic noise monitoring readings of ten minutes duration (in accordance with the Project procedure), will be measured at the building facade at the start of the potentially noisy activities. If the noise exceeds project standards, measures will be implemented to aim to reduce noise levels (e.g. hoardings).

CONTRACTOR shall undertake the following commitment:

25-08	The project will avoid vehicle reversing where practical, and will preferentially use white noise type reversing alarms.

CONTRACTOR's Pollution Prevention Implementation Plan shall identify activities that generate high noise levels and propose to carry them out in normal daytime working hours only. Night time activities shall be at COMPANY approval and shall be subject to a site specific noise risk assessment which shall consider any exceedance of the project environmental standards (Appendix B); the duration of the noise impact; additional control measures to meet project environmental standards and community liaison measures which should be implemented.

CONTRACTOR shall implement best practice in Noise and Vibration control as defined in BS5228 (2009) Parts 1 and 2 in so far as it does not conflict with the other requirements of this plan, including notifying local residents before undertaking noisy activities that could disturb or alarm people or animals, especially during approved 24-hour activities (e.g. hydrotest).

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

25-04	Local residents will be forewarned of planned activities that are considered by the project to be noisy (e.g. pile driving and release of test pressure).

CONTRACTOR shall provide adequate warning that loud activities will take place to residents that could potentially be impacted by the noise source. Near settlements, CONTRACTOR shall schedule works and limit the speed of construction traffic to minimise disturbance by noise.

CONTRACTOR shall consider the noise level when selecting equipment and preferentially select equipment that generates low levels of noise, and operate it in a manner sympathetic to the ambient noise environment (e.g. not leaving equipment idling unnecessarily or revving engines unnecessarily). CONTRACTOR shall carry out documented machinery noise level checks as part of routine maintenance and before set up on site. All equipment shall be adequately maintained to minimise noise emissions.
The SCPX ESIA has committed to responsible use of vehicles to reduce disturbance due to noise.

COMPANY and CONTRACTOR shall implement the following commitment:

37-16	Drivers will be trained to adopt 'low-noise' driving practices, for example, by strictly observing speed limits, switching vehicles off whenever possible during periods of inactivity, minimising the use of horns, not accelerating or braking aggressively.

25-02	Driver training will include advice on behaviours to reduce the potential for disturbance, including use of horn, loud radios with windows open, switching engines off when not in use, strictly observing speed limits and not accelerating or braking aggressively.

CONTRACTOR shall require mufflers to be fitted to vehicle exhausts, machinery and heavy equipment and maintained so that tonal, impulsive or low frequency noise is eliminated.

CONTRACTOR shall locate power generators as far as possible from worker resting areas, populated areas, and sensitive ecosystems. Plant known to emit noise strongly in one direction will, whenever possible, be orientated so that the noise is directed away from noise sensitive areas.

CONTRACTOR shall implement noise screening measures if it is likely that the project environmental standards (Appendix B) will be exceeded. Noise screening should include:

- Housing noisy equipment in soundproof enclosures
- Erecting earth mounds or solid fencing between the sound source and affected dwellings
- Stockpiling site materials, soil or spoil where it can provide additional screening.

Special consideration shall be given to any sensitive receptors including schools, hospitals and nursing homes to ensure the project environmental standards (Appendix B) are adhered to.

During commissioning and testing, COMPANY shall undertake the following commitments:

25-11	During commissioning and testing, noise emissions from equipment will be minimised through use of acoustic insulation as deemed appropriate by the Project.
OP148	During early operations, 10-minute readings will be taken at the nearest noise sensitive receptors to the pigging station to confirm that the site will meet the appropriate Project Environmental Standards.

10.4.7.2 Vibration control measures

CONTRACTOR's Pollution Prevention Implementation Plan shall identify activities that generate unusual levels of vibration (e.g. blasting, piling, heavy vehicle movements).

Vehicle movements
CONTRACTOR shall implement the following measures to minimise vibration damage of buildings and to protect CONTRACTOR and COMPANY against spurious claims for compensation.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

25-15	The validity of any damage claims will be assessed; repairs will be undertaken or appropriate compensation paid if damage is associated with construction vehicle movements.
25-16	Correct tyre pressures will be monitored and maintained.

Contractor shall also comply with commitments in the Infrastructure and Services Management Plan including 37-08 which requires regular inspections of roads, particularly close to fragile buildings. The record of condition at vibration-sensitive locations shall be organised and maintained by CONTRACTOR with participation by COMPANY.

10.4.8 Light Emissions

CONTRACTOR shall design lighting to modern specifications to keep light spill to surrounding areas to a minimum. It will illuminate the ground but not the night sky as far as possible. Day light sensors should be used where possible to prevent unnecessary lighting. CONTRACTOR shall consider the use of low level, low impact bollard lighting in the camp accommodation areas where possible.

CONTRACTOR shall implement the following commitments:

8-04	Lights will be shrouded or directed with the aim of reducing off-site light spill at the construction sites, camp and pipe storage areas.

10.4.9 Oil and Chemical Management

CONTRACTOR's Pollution Prevention Implementation Plan shall demonstrate how the storage and handling of fuel and chemicals will be managed so that they are contained and are not discharged into the soil, groundwater or water courses.

CONTRACTOR shall implement the following commitments:

2-02	Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency).
6-21	All mobile plant (excluding vehicles) will be integrally bunded or will be equipped with a bund or drip tray that will be regularly inspected and emptied to prevent rainwater accumulating.
X6-01 KP32, KP169 - KP390, Saloghlu Rail Spur and Offloading Area, Saloghlu Pipe Storage Area and Saloghlu Camp	A site specific risk assessment of the potential for impacts on groundwater will be undertaken if it is proposed to have static hazardous waste, chemical or fuel tanks between KP32, KP169 - KP390 (which includes the Karayazi aquifer from KP358 - KP390), or at the Saloghlu Rail Spur and Offloading Area, Saloghlu Pipe Storage Area and Saloghlu Camp during construction. This will be used to develop any additional mitigation measures required.

10.4.9.1 Chemical selection and inventory

CONTRACTOR's Pollution Prevention Implementation Plan shall identify the chemical products that will be used, and wherever possible it will propose to replace environmentally

harmful chemicals with less harmful alternatives. CONTRACTOR shall apply the following principles when selecting chemicals:

- CONTRACTOR shall reduce the environmental risk by selecting effective hazardous materials with the lowest environmental impact, where practicable
- CONTRACTOR shall select hazardous materials with reduced health impact wherever possible, in accordance the Control of Substances Hazardous to Health (COSHH) principles or equivalent
- The use of any hazardous materials that may cause tainting, known endocrine disruptors or heavy metals shall be avoided
- Ozone Depleting Substances (ODS), as defined by the Montreal Protocol, shall not be used
    - CONTRACTOR shall not design for the use of halon-based fixed and portable fire suppression systems
    - CONTRACTOR shall not design and install new refrigeration systems that utilise hydrochlorofluorocarbon (HCFC) and chlorofluorocarbon (CFC) (note this requirement does not apply to air conditioners fitted to vehicles, hermetically sealed domestic-type appliances (e.g., refrigerators, chilling units and portable air conditioning with an inventory less than 3kg)
    - All new equipment shall be free from all HCFCs and CFCs.
- Persistent organic pollutants, as defined in the Stockholm Convention, shall not be used unless no alternative is available. Alternatives shall be reviewed and the choice of chemical justified. Use and disposal of any chemicals listed in Annex A of the Convention shall be strictly in accordance with the provisions of the Convention and will be approved for use by COMPANY
- CONTRACTOR shall select chemical pesticides for pest control as a last resort and only after alternative pest control methods (such as biological) have been considered.
- When pest management activities include the use of pesticides, projects should consider the following:
    - Reducing the levels of harmful active substances by replacing the most dangerous with safer (including non-chemical) alternatives
    - Selecting pesticides that are low in human toxicity, known to be effective against the target species, and have minimal effects on non-target species and the environment
    - Designing the pesticide application regime to minimise damage to natural enemies and reduce the likelihood of pesticide resistance.

The SCPX ESIA has committed to minimise stored volumes of chemicals.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

6-08	Procedures will be established to determine acceptability of material storage and to promote the minimisation of storage volumes.

CONTRACTOR shall maintain a comprehensive chemical inventory for each chemical storage area. CONTRACTOR's Pollution Prevention Implementation Plan shall include procedures for inventory control to minimise stored volumes, and track incoming and outgoing chemical materials in a chemical control register.

10.4.9.2 Fuel and chemical transport and storage

CONTRACTOR shall complete a hazard assessment for the transport of all hazardous materials, including: management actions, preventive measures and emergency responses, as well as the characteristics of the hazardous material and a history of any previous

accidents and existing criteria for the safe transportation of hazardous materials. The assessment shall document any mitigation measures that are required to reduce risk.

Storage requirements

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

14-03	In areas of wetland and areas where the groundwater supplies wells for irrigation or potable use, the storage and use of hazardous materials will be carefully controlled.
6-06	The Contractor's Implementation Plan will detail requirements for record keeping and on-site maintenance of material safety data sheets (MSDS).
6-07	Materials that can potentially react with each other will be segregated during storage.
6-04	Requirements for the establishment of hazardous materials storage areas (e.g. bunding, impermeable surfaces, secure drainage, limited access, labelling) will be identified in the Contractor's Pollution Prevention Implementation Plan.
7-10	Diesel storage tanks at temporary sites (e.g. construction camps, rail spur, offloading and pipe storage areas), on the ROW and at the AGIs will be located in suitably sized secondary containment with an impermeable liner. The secondary containment volume will be designed to no less than 110% of the tank volume. Loading and off-loading connections will be located over secondary containment.
7-11	Hazardous chemicals will be securely stored on site in special containers in a designated storage area

CONTRACTOR shall store fuel and chemicals either:

- In double-skinned (capable of 110% containment of product) storage tanks with the filling connection within the outer skin, or
- In storage tanks/drums located in a concrete (or other suitably impermeable material) bund that is impervious to water and fuel/chemicals that has a capacity at least 110 % of the largest tank/drum within the bund
- The bund shall have no external drain and any penetration of the bund wall shall be sealed into the wall. The filling connection shall be within the bund. The bund shall be drained to the oil/water separator via a locked valve which is normally closed
- Bunds shall be regularly inspected and emptied (only after inspection) to prevent the accumulation of rainwater
- The loading and offloading area shall be hard-standing (e.g. concrete) and kerbed and/or bunded to allow vehicle access with no connection to external drains.

All chemical and fuel storage areas (excluding large volume diesel tanks) shall be stored in roofed areas.

Chemical and fuel storage areas and refuelling areas shall have a sealed surface (e.g. concrete), be bunded and drain via a sump to a wastewater treatment system with an oil/water separator. Oil water separators shall be installed at fuel storage, refuelling and maintenance areas. They shall be industry recognised manufactured oil water separators with an effluent quality of less than 10ppm of oil and grease.

Underground storage tanks shall not be used unless with COMPANY approval which will be subject to a review of the results of a risk assessment which the CONTRACTOR shall prepare.

CONTRACTOR shall implement measures to protect fuel storage tanks from vehicle impact damage. Measures should include restricting unauthorised vehicular access, speed limits (20km/h or as directed by COMPANY), minimising reversing requirements and signage (e.g. Danger, Inflammable Fuel).

If CONTRACTOR proposes a temporary fuel tank to be used at a worksite, a temporary containment system shall be installed (e.g. impermeable geo-membrane and sand bags) capable of holding 110% of the volume stored. Filling connections shall be within the bund.

CONTRACTOR shall store chemicals (small volume containers) on shelves or pallets in covered and lockable buildings and flame-proof stores, in which temperature, ventilation and humidity conditions can be monitored to assure that storage meets the recommendations included in the manufacturer's Material Safety Data Sheet (MSDS). Chemicals shall be segregated as per the MSDS requirements. Cupboards and buildings should be bunded (internally or externally) to ensure that chemicals are contained and recovered in accordance with the MSDS and do not enter open floor drains.

All fuel and chemical storage areas shall be secured by CONTRACTOR to prevent unauthorised access.

All labelling and signage shall be in both English and Azerbaijani and other languages as necessary to ensure understanding within CONTRACTOR workforce. MSDS sheets or a synthesis of the applicable requirements shall be stored in an accessible place within all chemical storage areas.

Location

The SCPX ESIA has committed to protect water courses and groundwater from stored hazardous materials, and to store such materials under controlled conditions. The following commitments shall be addressed in CONTRACTOR's Pollution Prevention Implementation Plan:

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

6-03	The storage of hazardous materials will be restricted to designated impermeable hazardous materials storage areas located at least 50m from any surface watercourse or seasonal water channel.

CONTRACTOR shall not locate fuel storage tanks, refuelling and maintenance points within 50m of any watercourse or dry riverbed or on steep river banks.

CONTRACTOR shall store oil and chemicals supplied in drums in an impermeable lined and bunded designated storage area and / or in the metal drip trays capable of holding 110% of the volume stored; at least 50 m away from any surface water bodies. The storage of hazardous materials in areas of known groundwater vulnerability[6] (i.e. the area to the west of Yevlakh and in particular the Karayazi aquifer area) will be carefully controlled under pollution prevention procedures.

CONTRACTOR shall restrict the storage of fuel and chemicals within the camps and at the work site to designated areas.

10.4.9.3 Use of chemicals in hydrotest and chemical cleaning water

The following section applies to use of chemicals for hydrotesting the pipeline and facility pipework (if required) plus chemical cleaning of facility pipework

CONTRACTOR shall undertake the following commitments:

[6] Groundwater vulnerability is defined as the tendency and likelihood for general contaminants to reach the water table after introduction at the ground surface

Pipeline and facility:

10-08	A risk assessment will be undertaken before any chemical additives are used in hydrotest water..

CONTRACTOR's Pollution Prevention Implementation Plan shall include a review of the ecotoxicity data from the MSDS and demonstrate negligible risk to the aquatic environment from the residual chemicals in the hydrotest water or from the discharge of wastewater from chemical cleaning. CONTRACTOR may also refer to the results of ecotoxicity testing COMPANY has undertaken previously in relation to specific hydrotest chemical additives. COMPANY will supply this information on CONTRACTOR's request.

Chemical additives shall be evaluated for their toxicity, biodegradability, bioavailability, and bioaccumulation potential. CONTRACTOR should design the hydrotest programme to minimise the residence time of hydrotest water in the pipeline to avoid or minimise the use of chemical additives.

COMPANY shall approve the use of any chemicals. All discharge shall meet the quality requirements for water discharge as specified in this Plan.

CONTRACTOR shall produce a comprehensive plan with supporting method statements for hydrostatic testing which will comply with the requirements of this plan and include the following:

- Information on quantity and quality of water needed and regional availability
- The proposed use of any chemical additives and appropriate risk assessment
- Proposed hydrotest water abstraction points
- Hydrotest water discharge proposal including proposed treatment and actual discharge locations.

CONTRACTOR shall produce a comprehensive plan for chemical cleaning which will comply with the requirements of this plan and include the following:

- Information on quantity and quality of water needed and regional availability proposed water abstraction points (if water is required)
- The proposed use of any chemical additives and appropriate risk assessment
- Chemical cleaning wastewater or chemical waste disposal including proposed treatment and actual discharge locations.

10.4.9.4 Refuelling and chemical handling

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

6-05	A refuelling procedure will be developed by the Contractor, which will include a restriction on refuelling within 50m of any watercourse. Any deviation will be subject to approval by the Company.
6-20	Vehicles delivering fuel or hazardous liquids will carry appropriate spill kits to allow an initial response to any spill to be deployed.

Approval to refuel within 50m of a watercourse shall be subject to COMPANY approval.

CONTRACTOR shall ensure that all people involved in fuel and chemical handling have been appropriately trained.

CONTRACTOR shall implement measures to prevent spillage while handling fuel and chemicals, including:

- Prohibiting smoking
- Ensuring there are no naked flames within 50m
- Requiring vehicle engines, radios and other electronic equipment to be switched off and earthing lines to be connected to vehicles during transfers
- Restricting access to the fuel and chemical handling areas to authorised vehicles and personnel
- Stationary refuelling facilities to be equipped with automatically shut off refuelling guns on dispensers (with deadman type switch)
- Attendants are not allowed to leave refuelling equipment without supervision, and
- Requiring personnel in charge of transfers to closely monitor levels to prevent overfilling of tanks.

Vehicles transporting fuel, chemicals, or other hazardous materials including waste shall carry appropriate documentation such as MSDS or as required.

10.4.9.5 Refuelling in the field

CONTRACTOR's Pollution Prevention Implementation Plan shall identify the need to refuel certain vehicles and equipment on the ROW (e.g. side booms and trenching excavators) or at construction sites. Fuel tankers will transport fuel from the storage tank to the right-of-way, and transferred using transfer pumps. Fuel tankers shall carry a spill kit and drip tray on board and re-fuelling operators shall be trained in the use of such equipment.

CONTRACTOR shall refuel using impermeable and suitably sized drip trays. Refuelling shall be at least 50m away from any surface water bodies and vulnerable unconfined aquifers.

CONTRACTOR shall develop mobile refuelling procedures to be approved by COMPANY.

CONTRACTOR shall require drip trays to be used under standing plant and equipment. CONTRACTOR shall use drip trays under large items of plant which will be stored in the field overnight e.g. cranes, side booms etc. Drip trays shall be emptied regularly and contaminated water treated through the oily water separators at the construction camps.

CONTRACTOR shall require the wheels of all vehicles involved in in-field refuelling shall have chocks used on unlevelled surfaces while refuelling is in progress.

CONTRACTOR shall undertake any scheduled maintenance activities for heavy plant and equipment, such as lubrication and oil changes, at least 50 m away from any surface water bodies and vulnerable unconfined aquifers.

Pumps requiring in-field refuelling shall be installed on a platform at least 50m from any watercourse that is provided with secondary containment.

CONTRACTOR shall prohibit the discharge of oily materials of any kind be discharged into waterways or channels leading to waterways.

10.4.10 Hazardous Liquid Wastes

CONTRACTOR's Pollution Prevention Implementation Plan shall identify work that will generate hazardous liquid wastes and shall propose measures to ensure that they are contained. All hazardous liquid wastes will be disposed of in accordance with the Waste Management Plan

10.4.11 Spill Response

CONTRACTOR shall develop a Spill Response Procedure to handle all potential spills associated with their scope of activities and shall procure the necessary equipment to achieve this. This procedure shall be integrated within the Project Emergency Response Plan. This shall include any unintended or unauthorised release of a potentially hazardous

material, identify locations where oil spill response equipment will be provided and include procedures for its deployment. It shall also include contact details for the rapid response team (and ensure that they always have access to an off-road vehicle) and Spill Response Organisation. This procedure shall also address the following commitments:

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

6-10	Spill response equipment (absorbents etc.) will be available in hazardous materials storage areas.
OP130	All personnel are required to understand their roles and responsibilities described in the ERP and undertake training and instruction necessary such that they are competent to carry out their roles and responsibilities. Regular drills, musters and training are detailed in the annual emergency response exercise programme that will be updated to include SCPX-specific training and emergency drills.

CONTRACTOR shall ensure that an adequate supply of oil and chemical spill kits shall be available onsite at all locations where fuel, lubricants, chemicals and liquid waste is stored or handled to remediate any accidental spills and within equipment where spills are especially likely such as fuel tankers. Each work team supervisor shall carry a spill response kit within their vehicle at all times, to ensure that each work team has easy access in the event of a spill. Equipment working on its own or remotely shall also carry a dedicated spill kit.

Contractor's spill kits shall be logged, inventoried and maintained to ensure adequate spill response material is available if needed.

Responsibilities between the COMPANY and the CONTRACTOR are defined below for Tier 1-3 spills. Irrespective of the response organisation CONTRACTOR retains all liabilities associated with response, clean-up and remediation.

All spills shall be reported in accordance with the COMPANY's Incident Reporting requirements.

Tier 1 (Minor Spills)

CONTRACTOR is responsible for providing spill response personnel and equipment to, contain, clean-up and remediate Tier 1 spills.

Tier 1 events are defined as are defined as small local spills requiring no outside intervention from outside the CONTRACTOR organisation. Tier 1 spills can be managed using on-site resources such as spill response kits. Tier 1 spills have the potential to arise during activities such as refuelling.

The clean-up will be effected using the Spill Response Kits held at each work location plus the provision of additional spill response equipment (if necessary) by the CONTRACTOR.

Tier 2 (Emergency)

Following CONTRACTOR notification, COMPANY is responsible for providing a Spill Response Organisation to respond to, clean-up and remediate Tier 2 spills (with CONTRACTOR assistance).

Tier 2 incidents are larger spills, which require additional local (regional) resources and manpower. Tier 2 spills are likely to be resulted from integrity failure of safety and protection systems and equipment or large fuel losses.

This level of response requires the Incident Management Team (IMT) to mobilise additional BP Azerbaijan (and potentially also Georgia if the spill is close to the border) operations in-

country manpower/resources and the Spill Response Organisation (Azerbaijan). These will be sourced from the nearest BTC oil spill equipment base and additionally from the other bases.

In addition the rest of the country-based oil spill response equipment and recourses could be mobilised from the Spill Response Organisation.

Tier 3 (Crisis Events)

Following CONTRACTOR notification, COMPANY is responsible for the provision of a specialist Spill Response Organisation to respond, clean-up and remediate Tier 3 spills (with CONTRACTOR assistance).

Tier 3 incidents are very large, possibly ongoing spills, which will require additional resources from outside Azerbaijan and Georgia. Such spills are considered to be very unlikely during SCPX construction.

10.4.12 Contamination

10.4.12.1 Existing contamination

COMPANY shall incorporate the following commitments into the project design which shall be implemented by the CONTRACTOR during construction.

X5-12	Further investigation will be undertaken of the hydrocarbon contamination at KP8 to determine the extent of hydrocarbon contamination.
6-22	The Company will carry out a due diligence exercise to identify and manage the risk of anthrax.

Known areas of contamination located within the ROW and other Project areas as identified by CONTRACTOR's pre-construction survey (described in the Reinstatement Plan) shall be recovered and disposed of by the CONTRACTOR in accordance with the Waste Management Plan.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

31-04	The project will apply a risk assessment approach to contaminated land management to evaluate the potential impact of soil, surface water or groundwater contamination on local receptors.
6-01	A baseline survey of visible contamination, has been carried out and will be repeated before construction begins to include camp and pipe storage areas.
6-02	All known areas of surface contamination (within the project footprint) will be cleared before construction begins.

CONTRACTOR's Pollution Prevention Implementation Plan shall propose mitigation to prevent contaminated run-off from soil piles where contaminated soil is excavated and piled (segregated from uncontaminated soil) before disposal and could potentially impact on surface water and groundwater.

CONTRACTOR shall carry out a risk assessment using the approach defined in the project environmental standards (Appendix B) if contamination is identified.

10.4.12.2 Unexploded ordnance (UXO)

CONTRACTOR shall implement the following commitments with regard to impacts associated with UXO (Unexploded Ordnance).

40-01	UXO safety and security briefing will be provided to all personnel during induction.
40-02	Where the risk of UXO is identified, these will be cleared prior to construction.

10.4.12.3 Contamination chance find

If unexpected contamination (e.g. oil contaminated land, general fly tipping, animal burial pits, Unexploded Ordnance) is encountered during the Project, CONTRACTOR shall notify COMPANY, who will assess the risk and advise CONTRACTOR on appropriate remedial action. CONTRACTOR shall provide training to construction staff on the implementation of this procedure, and shall designate a member of staff with the responsibility for monitoring earth moving activities for contamination.

In general, the process in Figure 10-1 shall be followed.

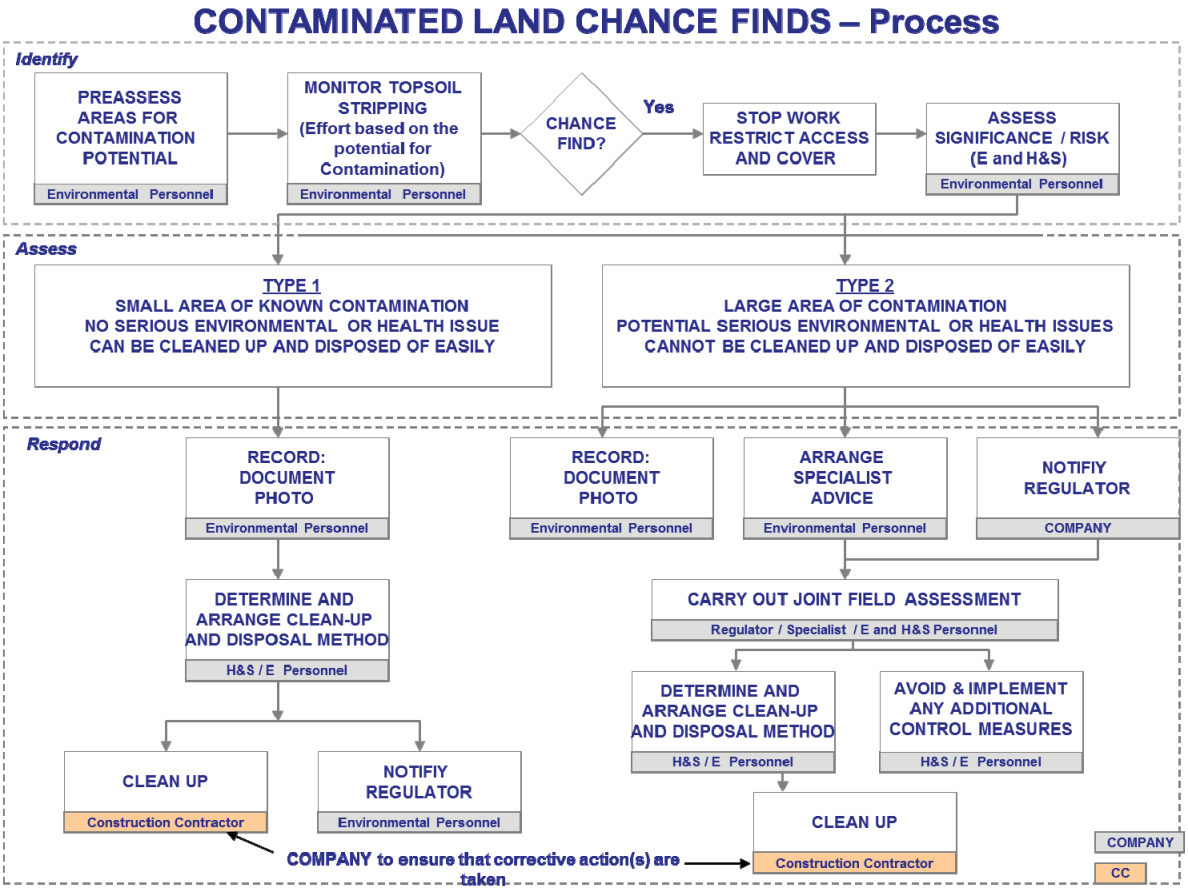


Figure 10-1: Contamination Chance Finds Framework

10.4.12.4 Remedial action

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

6-13	The need for remedial work in any specific area will be determined on the basis of the observed contaminants, sampling and analysis to determine their concentrations and the risks that they may pose to local receptors (social and environmental) in accordance with Project Standards.

6-14	In each area of identified contamination, a site-specific remedial action plan will be developed. The plan will include a summary of the environmental risks posed by the contamination and the procedures that are to be adopted to mitigate those risks.
6-16	The preferred options for the treatment of contaminated soil will be based on the risks posed by the material. In keeping with the aim of minimising the transportation of hazardous materials and minimising waste generation, preference will be given to in situ and low technology remedial approaches.
6-18	Any contaminated material storage areas will be provided with containment measures (for example bunds, ditches, impermeable base membranes, covers) to help minimise run-off and airborne losses.
6-25	If any animal burial pits are identified during construction, works will cease in this location until the affected area has been subject to sampling by qualified personnel to determine if there is a risk of anthrax.
7-05	Contaminated soil will be segregated from uncontaminated materials and stored at least 50m away from any surface water or seasonal surface water bed.

Low technology remedial approaches can include for example bioremediation.

CONTRACTOR shall assess the impacts of potential soil, surface water and groundwater contamination caused by any unintended releases from project activities. Site clean-up and restoration shall be in accordance with the project environmental standards (Appendix B) and shall be further detailed in the Oil Spill Response Procedure.

10.4.13 Concrete Batch Plants and Extraction Sites

In addition to the requirements above, the following requirements are applicable to concrete batch plants and extraction sites (borrow pits and quarries).

10.4.13.1 Project-owned concrete batch plants or asphalt batching plants

Should CONTRACTOR develop a Project specific concrete batching plant it shall be located to minimise disturbance to the environment and local communities in accordance with the requirements of the Resource Management Plan.

CONTRACTOR shall design plants to minimise dust emissions including engineering design measures (shrouds or water mists, covered conveyor belts, central bag house collection line etc.), handling and wetting procedures and other dust suppression measures as necessary and in line with the general requirements above. The design shall be approved by COMPANY.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

10-01	Concrete batching plant (if required) will be sited at least 50m away from sensitive receptors such as watercourses; wash pits to be lined with an impermeable liner.

CONTRACTOR shall make sure there is no concrete washout directly on the ground or into the watercourse. CONTRACTOR shall ensure all mixer truck drivers are appropriately trained to comply with the requirements of this plan. CONTRACTOR shall not wash out concrete waste to the ground and/or pump straight into a drainage/watercourse. CONTRACTOR shall use washout pits with impermeable liners to capture and hold concrete waste and washout runoff. Wastewater shall be analysed and disposed of in accordance with the requirements of this plan.

Sediment control measures shall be in place (sedimentation ponds) to ensure there is no direct discharge of the water from aggregate washing facility to the river. Fuel/lubricant

storage area shall be provided for all hazardous substances on site in accordance with this plan. CONTRACTOR shall be responsible for waste management on site.

CONTRACTOR shall design washing facilities to maximise the reuse of water.

CONTRACTOR shall be responsible for waste management on site.

10.4.13.2 Project-owned extraction sites (borrow pits/quarries)

Sediment control measures shall be in place (sedimentation ponds) to ensure there is no direct discharge of the water from aggregate washing to the river. Fuel/lubricant storage area shall be provided for all hazardous substances on site in accordance with the Pollution Prevention Implementation Plan. CONTRACTOR shall be responsible for waste management on site.

10.5 Monitoring

CONTRACTOR shall monitor the implementation of the measures in its Pollution Prevention Implementation Plan Project in accordance with the requirements in Section 21 of this ESMMP.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

7-12	Regular inspections and maintenance will be carried out of secondary containment area at camps to confirm that they are functioning effectively.

10.5.1 Water Quality

The SCPX ESIA has committed to monitoring of groundwater, if applicable at locations where abstraction is carried out. In addition, monitoring of surface water at watercourse crossings will be undertaken while construction work is taking place.

Pipeline, camps, access roads and all facilities:

CONTRACTOR shall undertake the following commitments:

10-16	Daily visual monitoring of turbidity will be undertaken at river crossings while works are being undertaken at that river. This will be supplemented as necessary by probe monitoring.
15-09	If groundwater is extracted for Project use, from either new or existing boreholes at temporary facilities, the water quality and sustainability will be monitored to confirm that the supply meets Project standards and does not impact adversely on other users.
10-10	Water (including hydrotest water) will be tested before discharge and treated to meet the Project Environmental Standards.
14-08	Periodic analysis will be undertaken of controlled stormwater, sanitary and industrial discharges and any receiving surface water upstream and downstream of the discharge point.

10.5.2 Monitoring and Recording of Emissions, Dust, Noise and Vibration

Monitoring shall be in accordance with the monitoring programme specified in Appendix D and any additional requirements below.

CONTRACTOR shall carry out, record and document daily site inspections to check:

- Exhaust emissions from vehicles and machinery is clean

- Dust suppression water spraying is effective.

CONTRACTOR shall:

- Notify COMPANY of any accidental spill which has the potential to harm the environment
- Notify immediately where the spill poses a threat to sensitive receptors and/or has a pathway to sensitive receptors
- Notify within 24 hours of any spills to land in excess of one litre
- Notify immediately where hydrocarbon or other potentially hazardous material spills are in excess of 50 litres, or any volume of spill to water
- CONTRACTOR shall maintain a written record of all spills and shall submit to COMPANY on a weekly basis.

CONTRACTOR shall follow COMPANY reporting requirements and in addition, the reporting requirements of the Local or National Authorities permits or approvals.

CONTRACTOR shall implement the following commitment:

23-05	Dust generation and concentrations in the air will be visually monitored during construction where activities are near communities. If dust is visible, additional mitigation measures, such as the imposition of tighter speed limits, will be implemented with the aim of avoiding causing disturbance on residents or land users.
X8-05	If incineration is chosen as an option for waste treatment at the camps, an air quality and emissions monitoring programme will be developed and implemented in accordance with applicable permit requirements.

CONTRACTOR's Pollution Prevention Implementation Plan shall address this requirement.

At appropriate times CONTRACTOR shall monitor:

- Noise levels at sensitive receptors including houses, communities (for example at the start of new activities, operation of new machinery, etc.)
- Hard standing areas and access roads for the presence of mud and dusty materials (during construction).

The SCPX ESIA has committed to periodic noise and vibration monitoring which the CONTRACTOR shall undertake:

25-09	During construction of the pipeline and facilities and operation of the construction camp and pipe storage areas, where the works are less than 400m from residential buildings for longer than one month, periodic noise monitoring readings of ten minutes duration (in accordance with the Project procedure), will be measured at the building facade at the start of the potentially noisy activities. If the noise exceeds project standards, measures will be implemented to aim to reduce noise levels (e.g. hoardings).
25-13	Vibration sensitive locations will be determined by the Contractor and listed in their Pollution Prevention Implementation Plan, together with details for monitoring vibration before and during movement of heavy equipment. Further actions will depend on the outcome of vibration monitoring.

There are a number of vibration sensitive locations including Shusha village and archaeological and cultural heritage locations that will be on the alignment sheets and in the Construction constraints document. CONTRACTOR shall carry out vibration monitoring at representative locations to determine that vibration levels are within the acceptability criteria identified in the Project environmental standards (Appendix B). Vibration monitoring requirements are described in Appendix D.

During construction, where the works are less than 400m from residential buildings, CONTRACTOR shall undertake noise measurements for a duration of 10 minutes during the works to demonstrate compliance with the Project environmental standards. A measurement may be required on several different occasions during the works if it is considered necessary to achieve readings representative of the entire works (for instance if the noise levels change significantly during the works). If the noise exceeds Project environmental standards, appropriate measures to reduce the impact of the noise levels shall be implemented. Appropriate measures could be mitigation such as screening, equipment substitution or maintenance and time constraints.

A measurement may be required on several different occasions during if it is considered necessary to achieve readings representative of yard and camp activities. If the noise exceeds Project standards, appropriate measures to reduce the impact of the noise levels will be implemented.

During commissioning and testing:

- During commissioning and testing noise emissions from equipment will be minimised through use of acoustic insulation as deemed appropriate by the Project.

When the pipe yards and camps come into operation, CONTRACTOR shall undertake noise measurements for a duration of 10-minutes of activities to demonstrate compliance with the Project environmental standards. A measurement may be required on several different occasions if it is considered necessary to achieve readings representative of yard and camp activities. If the noise exceeds project standards, appropriate measures to reduce the impact of the noise levels shall be implemented such as hoardings and shielding noise sources.

CONTRACTOR's Pollution Prevention Implementation Plan shall address these issues.

CONTRACTOR shall record the findings of the inspections and monitoring and establish an Action Plan to implement such additional mitigation measures as may be required to prevent pollution. CONTRACTOR's CLO will also record any complaints that relate to emissions, dust, wastewater discharges, noise or failure to contain fuels and chemicals and CONTRACTOR's Pollution Prevention Implementation Plan will develop measures to address them.

10.5.3 Analysis of Wastewater before Discharge

CONTRACTOR shall meet the following commitment:

10-10	Water (including hydrotest water) will be tested before discharge and treated to meet the Project Environmental Standards.

CONTRACTOR's Pollution Prevention Implementation Plan shall propose monitoring of all wastewater discharges in accordance with the monitoring requirements detailed in Appendix D to ensure the Project Environmental Standards (Appendix B) are met.

CONTRACTOR's Pollution Prevention Implementation Plan shall propose to analyse wastewater discharges from the sewage treatment plants, oily water separators and other sources in accordance with Appendix D.

CONTRACTOR's Pollution Prevention Implementation Plan shall propose to carry out analysis of grab samples from any receiving waters, upstream and downstream of discharges of wastewater or hydrotest water during the discharge in accordance with Appendix D.

In addition, for hydrotest water discharges, CONTRACTOR shall conduct sampling at the point of discharge in accordance with the Project Environmental Standards and additionally

the measurement of dissolved oxygen, turbidity/suspended solids, temperature, iron, colour, odour, visible oil and grease and conductivity to ensure the hydrotest water is suitable for discharge into the receiving body which will allow the recovery of the dissolved oxygen levels in the discharged water.

CONTRACTOR shall also monitor, in accordance with Appendix D:

- The content of the sediments in water pumped from trenches or hydrotest water at the discharge point, and 200 m below, to prevent loss of fish (when discharging water that contains an excess of sediments)
- Groundwater quality at wells.

10.5.4 Reporting Requirements for Emissions, Wastewater Discharges and Noise

CONTRACTOR shall provide to COMPANY Daily Reports that shall include details of any pollution incidents with the potential to result in a stoppage of work.

CONTRACTOR shall provide to COMPANY a fortnightly update that includes a summary of the daily reports and describes any pollution prevention incidents that have not been resolved within 7 days.

CONTRACTOR shall provide to COMPANY Monthly Reports giving details of:

- Impact avoidance and mitigation measures planned and implemented,
- All emissions and discharge monitoring results
- The fuel inventory reconciliation with tank measurements to determine whether there have been any losses, and
- Records of the findings of inspections and analyses.

11 RESOURCE MANAGEMENT PLAN

11.1 Scope

The scope of this Management Plan relates specifically to the following resource management issues:

- Training
- Aggregates Management
- Water Management
- Energy Efficiency
- Timber.

11.2 HGA Standards and Practice

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Sec 3.1). Specific guidance considered has been described below.

- IFC General EHS Guidelines 1.1 Air Emissions and Ambient Air Quality (April 2007)
- IFC General EHS Guidelines 1.2 Energy Conservation (April 2007)
- IFC General EHS Guidelines 1.4 Water Conservation (April 2007)
- IFC General EHS Guidelines 3 Community Health and Safety (April 2007)
- IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources (January 2012)
- IPLOCA : 'Onshore Pipelines – The Road to Success' (2009 Draft), Section 6: 'Best Practice in Planning and Construction Techniques'. S.6 Best Practices in Planning and Construction Techniques.

Specific text from the guidance documents above is presented below.

- Projects endeavour to minimise the use of natural resources and to use renewable resources where practicable.
- Where renewable or living resources are being used, projects:
    - Assess the use of the resources and the function the resource plays in the ecosystem (including potential cumulative impacts associated with using the resource)
    - Maximise benefits from use of the resources and minimise waste of the resources
    - Use a precautionary approach to avoid depleting the level of the resource available.
- Where the Project uses external suppliers of natural resources that are central to the Project's core functions, the projects adopt a sustainable resource procurement policy, and implement procedures and action plans to:
    - Identify the origin of the resources and purchasing them only from a legal and sustainable origin
    - Prevent the use of resources from international protected areas or sensitive areas
    - Demonstrate through independent verification or certification the sustainable management of the resource.

- Projects assess the potential positive role that local communities may play in assisting Project activities to promote sustainable ecosystem use.

- Projects measure and monitor water use with appropriate equipment and develop a water balance that accounts for actual water use.

11.3 Roles and Responsibilities

General responsibilities for environmental and social management are defined in Section 5 of the ESMMP. Responsibilities relating specifically to resources management are defined in this section.

COMPANY shall be responsible for:

- Applicable permits as described in Appendix C.

CONTRACTOR shall be responsible for:

- With the exception of those permits and authorisations obtained by COMPANY as mentioned above, CONTRACTOR shall obtain all local and government work permits and authorisations related to all required work activities including but not limited to permits/authorisations for the extraction of fill, sand, gravel and other construction materials, building permits, hazardous materials transportation/storage permits, water abstraction approvals, approval of liquid discharge into surface water body, approval of air emission limits, spoil disposal permit, transportation permits, etc.
- Obtain any easements from public and private agencies and parties required to perform required work with the exception of those obtained by COMPANY.

11.4 Impact Avoidance and Mitigation

11.4.1 Training

CONTRACTOR shall document the training delivered to its personnel and to its subcontractor's personnel, recording the training date, name of recipient, name of trainer and a brief description of training content.

The SCPX ESIA has committed to including energy minimisation in workforce training.

CONTRACTOR shall supply training that includes as a minimum:

- Guidance on minimising energy consumption
  - Drivers and operators of equipment shall be trained to use fuel efficiently
  - All personnel shall be trained to avoid wasting electricity.

- Guidance on minimising water consumption:
  - Personnel involved in hydrotesting shall be trained to be aware of the abstraction requirements and the benefits of re-using water
  - All personnel shall be trained to avoid wasting water.

CONTRACTOR shall train the personnel responsible for sourcing and supplying aggregates to be aware of the environmental impacts of aggregate extraction and transport.

11.4.2 Aggregates

11.4.2.1 General requirements

Before starting construction activities, CONTRACTOR shall estimate the amount of aggregate materials that will be needed.

The SCPX ESIA has committed to use aggregates from licensed sources and to maximise re-use of excavated material.

CONTRACTOR shall implement the following commitments:

1-01	Aggregates will only be sourced from licensed sources as approved by MENR.
1-07	All excavated materials will be screened and reused to the extent deemed feasible by the Company to minimise the need for new aggregates.

Wherever the material excavated from the pipeline trench is suitable (including after crushing which shall be implemented by the CONTRACTOR) for use as bedding and fill around the pipeline CONTRACTOR shall use it rather than sourcing quarried material for that purpose. CONTRACTOR shall study the disposal of excess soil and rock and incorporate the priorities for reuse. Fill and padding shall not be obtained by extraction from third-party facilities unless CONTRACTOR can demonstrate to COMPANY's satisfaction that it cannot practically be obtained through reuse and/or processing of Project spoil.

CONTRACTOR shall conduct an E&S assessment for aggregate sourcing and spoil disposal sites. A pre-entry agreement (initial agreement between CONTRACTOR and third party) and close-out letter is required for each third-party portion of the land. Land exit will be subject to the requirements of the Land Management Plan.

Extraction shall be restricted to avoid altering the course of rivers and associated aquatic habitats. Extraction from rivers shall not be undertaken near any pipeline crossings (e.g. BTC/SCP).

CONTRACTOR shall ensure that the extraction of aggregate from existing or newly established quarries will be undertaken in a manner that verifiably minimises environmental and social risks and which is open to managerial and technical scrutiny.

Extraction areas shall be reinstated as per the project Reinstatement Plan.

11.4.2.2 Transportation

CONTRACTOR shall define routes by which aggregate will be transported to the point of use, and shall estimate numbers of traffic movements, speeds and times of travel to transport aggregate materials to the site.

If the aggregate has to be transported through residential areas, CONTRACTOR shall propose measures that will be used to ensure the safety of the community and minimise the nuisance impact of traffic movements. In this case, CONTRACTOR must justify selection of the proposed transportation route and if necessary take appropriate mitigation measures to avoid/minimise nuisance. CONTRACTOR shall monitor aggregate transportation and shall set clear recording of transported/used material.

11.4.2.3 Project facilities

Borrow pits

The SCPX ESIA has committed to assessing the environmental and social impacts of opening aggregate extraction sites (borrow pits) and to reinstate them when they are closed.

The CONTRACTOR shall implement the following commitments:

1-03	The project will give preference to using existing borrow pits and/or spoil disposal pits where reasonably practical.

CONTRACTOR's Resource Management Implementation Plan shall address these issues.

If no existing aggregate extraction operations that meet the needs of CONTRACTOR are identified in the proximity of the pipeline route, CONTRACTOR shall consult with the relevant government agencies to identify the permits and procedures associated with the establishment of new aggregate extraction operations. CONTRACTOR shall identify

suitable sites for quarries or borrow pits, make formal applications for approval to the relevant authorities and obtain the necessary permits and licences before extracting aggregate, and develop plans for the reinstatement of the quarries and borrow pits (in accordance with the Reinstatement Plan).

11.4.2.4 Third-party aggregate extraction, asphalt and batching facilities

The SCPX ESIA has committed to source aggregates legally from approved suppliers.

CONTRACTOR shall only source aggregates from licensed facilities. CONTRACTOR shall consult with the relevant government agencies (including the Ministry of Ecology and Natural Resources) to identify licensed quarries and borrow pits, and shall examine their authorisation documents before procuring any materials.

Third-party supplier-run sites such as existing quarries, gravel extraction and batching plants shall be formally inspected by CONTRACTOR prior to use to determine:

- Whether the off-site facility/site is compliant with the permit and regulatory conditions
- Whether the off-site facility management has a consistent track record of regulatory compliance
- If there are any complaints lodged against the environmental and social performance and if so whether they have been dealt with efficiently and effectively
- Whether there is record keeping system in place
- The extraction site's potential impact on environmental receptors (residential area, waterways, agricultural land, inhabited dwellings, surface water bodies, cultural heritage sites, sensitive habitats and groundwater)
- Whether the quarry maintains documents that demonstrate compliance with its permit conditions, and details of water/air/noise monitoring systems in place;
- The nature of any complaints, dust, noise, or contamination of soil surface waters, or groundwater and how the issues were closed out
- If the camps are to be supplied with water from either existing abstraction wells or new wells, they will be subject to a sustainability assessment
- The measures taken to prevent dust, prevent and respond to fuel spills, and to manage waste
- How often the quarry has been inspected by the permitting authorities.

On-site HSSE practices will be used as criteria for supplier selection. Inspection and audit reports shall be made available to COMPANY on request. Approval shall be subject to the general conditions of the CONTRACT.

CONTRACTOR shall undertake the following commitments:

1-06	Use of borrow pits will be managed in a manner that seeks to ensure that no illegal extraction (including by a third party) takes place.
1-05	Environmental audits will be undertaken at any proposed third-party borrow pits and/or spoil disposal pits before they are used. Periodic audits will be undertaken thereafter as considered appropriate by the Company.

CONTRACTOR's Resource Management Implementation Plan shall address this issue.

Extraction areas and access roads shall be reinstated as per the Project Reinstatement Plan. They shall be returned to conditions similar to their original state as practicably possible with stabilisation and re-vegetation done on a case by case basis and as approved by COMPANY.

11.4.3 Water management

CONTRACTOR will use water for dust control, compacting soils, hydrotesting the pipeline, drilling, tunnelling and for domestic purposes in camps.

Before any abstraction from surface waters or groundwater takes place, CONTRACTOR shall obtain water use permits from the appropriate Azerbaijan authority and compliance with the following commitments:

15-01	All necessary permits/consents to drill and abstract groundwater will be obtained before water is abstracted for construction or domestic use. Groundwater will not be used for pipeline hydrotesting.

11.4.3.1 Water supply

Sources and abstraction

The SCPX ESIA has committed to identify other users that could be affected by abstraction of water for the Project and to determine the impacts of water abstraction and to construct river crossings in a way that minimises flow interruption.

The CONTRACTOR shall implement the following commitments:

15-02	All new and existing water abstractions for use by the Project will be subject to an environmental and social assessment to assess potential impacts; decisions on the acceptability of the source and appropriate abstraction rates will be based on the results of the review, in accordance with the abstraction permit.
15-03	River flow will be assessed before and during abstraction; abstraction rates will be set taking into account information that the Contractor is able to acquire about downstream users.
15-04	The abstraction borehole, when completed, will be test pumped and a sustainable yield will be determined together with aquifer characteristics such as hydraulic conductivity and radius of influence.
15-05	Water features such as abstractions (boreholes, wells, springs) or environmental features (wetlands, springs, streams or surface water features in continuity with groundwater) will be identified within the likely radius of influence of the abstraction point.
15-07	Water conservation initiatives will be undertaken at construction camps.
15-09	If groundwater is extracted for Project use, from either new or existing boreholes at temporary facilities, the water quality and sustainability will be monitored periodically to confirm that the supply meets Project standards and does not impact adversely on other known users.

If the camps are to be supplied with water from either existing abstraction wells or new wells, CONTRACTOR shall carry out a sustainability assessment to avoid adverse effects on other users.

CONTRACTOR shall estimate the likely radius of influence of each abstraction point on the groundwater or surface water and shall adjust abstraction rates so that existing uses will not be compromised.

CONTRACTOR's Resources Management Implementation Plan shall identify any water sources where the proposed rate of abstraction could affect the amount of water required for local use, and propose measures to prevent reduction in the water supply of local communities.

CONTRACTOR's Resource Management Implementation Plan shall address this issue.

Water conservation

CONTRACTOR shall monitor water consumption and record the litres used. Water meters will be installed to measure the quantities of water used at the camps water meters should be registered and sealed by relevant authorities in accordance with the Mineral Extraction License requirements.

The CONTRACTOR shall implement the following commitments:

14-04	Waste water will be reduced by efficient use of raw water and the implementation of water management schemes that require water to be reused, whenever practicable, prior to treatment and disposal.

CONTRACTOR's Resource Management Implementation Plan shall propose management procedures to maximise water use efficiency and meet the above commitment. The design of the camps will include measures to ensure this is achieved.

Water treatment

CONTRACTOR's Resource Management Implementation Plan shall propose treatment of abstracted water as per Project specification.

11.4.3.2 Hydrotest water

The CONTRACTOR shall implement the following hierarchical approach to hydrotest water use and management:

- Water shall be abstracted from and discharged to the same watershed where the Project determines this is necessary
- The use of chemicals shall be eliminated where possible by reducing residence time of water in the pipe
- If chemicals are used (subject to COMPANY approval) they shall be biodegradable and the water shall be treated by the CONTRACTOR to neutralize chemicals prior to discharge
- Water treated with chemicals shall be reused in different sections as far as possible.

This hierarchy shall be the basis for the Hydrotest Management Plan which the CONTRACTOR shall prepare and submit to the COMPANY for approval.

Sources and abstraction

CONTRACTOR's Resource Management Implementation Plan shall detail water abstraction requirements and procedures to avoid harm to the environment or significant effects on downstream users.

CONTRACTOR shall implement the following commitments:

11-01	Construction of the surface water crossings will seek to ensure minimal impacts from interrupting river flow by identifying downstream users and determining their river water supply needs.
11-02	Construction design of river and stream crossings will seek to ensure minimal interruption to flow by using measures such as pumping, channel diversions and fluming.
11-03	If temporary damming is required, a pre-construction engineering, social and environmental review will be undertaken with the aim of planning the work to minimise the duration of the flow interruption and determining the need for pump around to maintain flows.

CONTRACTOR's Resource Management Implementation Plan shall seek COMPANY's approval of extraction locations for hydrotest water. CONTRACTOR shall source hydrotest

water from watercourses and not from groundwater supplies. CONTRACTOR shall avoid extraction at times of drought or low flow. The abstraction rate will be determined using the following flow diagram in Figure 11-1.

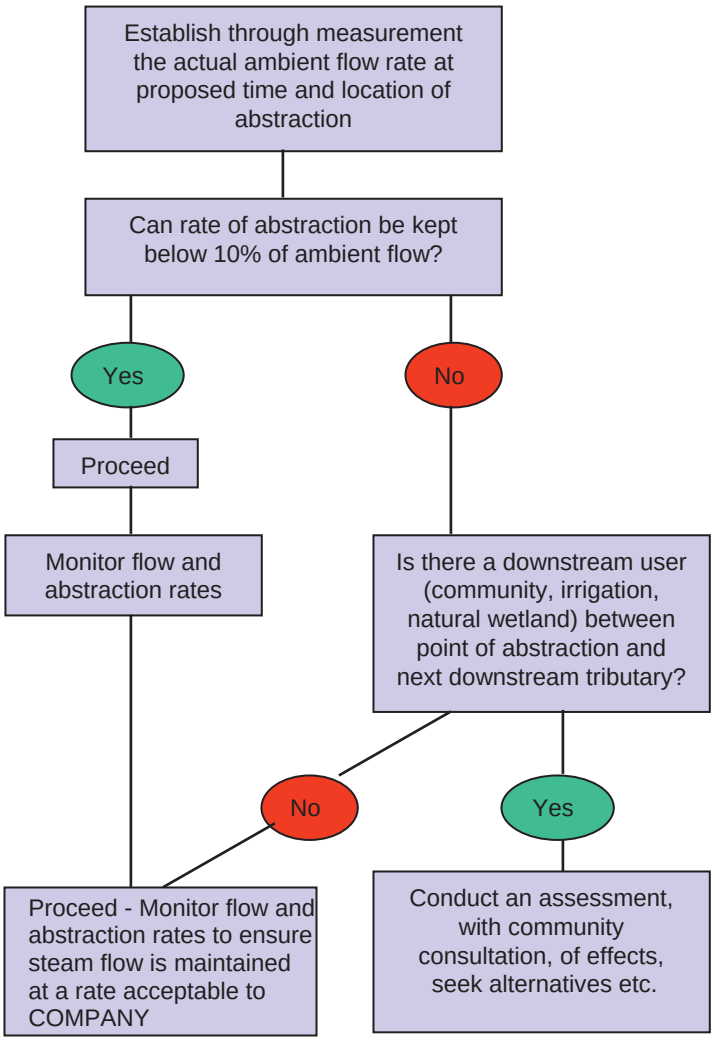


Figure 11-1: Hydrotest Abstraction Rate

Before extracting hydrotest waters from a water source, CONTRACTOR shall submit a sampling method statement and shall engage an independent laboratory, approved by COMPANY, to sample and analyse its water quality.

CONTRACTOR shall filter water extraction points to reduce the entrainment of fish, sediment and residues in the hydrotest water.

Containment and re-use

Where possible, CONTRACTOR shall recycle hydrotest water, or cascade it into adjacent test sections for re-use. A Hydrotest Management Plan will be submitted that demonstrates maximum re-use, and will be approved by COMPANY.

The CONTRACTOR shall implement the following commitment:

Pipeline:

10-09	Hydrotest water will be re-used between sections, where practical, to minimise the volume required.

11.4.4 Energy Efficiency

The CONTRACTOR shall implement the following commitments:

22-01	Energy efficiency in the camps will be monitored against key performance indicators (KPIs) and measures will be identified and implemented with the aim of continual improvement.
22-02	The workforce training will include advice on minimising energy consumption.

CONTRACTOR's Resource Management Implementation Plan shall address energy management and how use will be monitored and minimised.

11.4.4.1 Fuel

CONTRACTOR shall monitor fuel consumption and record the litres used.

CONTRACTOR's Resource Management Implementation Plan shall propose methods to minimise fuel use and comply with the following commitment:

23-02	Equipment and vehicles will be regularly maintained in accordance with the manufacturer's recommendations to maximise fuel efficiency and help minimise emissions.

CONTRACTOR shall propose to use vehicles and equipment that are appropriate for the tasks required and maintain them properly with a view to maximising fuel efficiency.

CONTRACTOR shall implement journey planning that minimises unnecessary travel.

CONTRACTOR shall implement procedures to turn off engines of vehicles and equipment when it is not in use. In winter, CONTRACTOR shall implement measures that allow vehicle engines to be turned off without their fuel freezing (e.g. use car ports, anti-freeze etc.).

11.4.4.2 Electric power

Procedures for saving electricity
CONTRACTOR's Resource Management Implementation Plan shall detail measures to manage energy use and implement energy efficiency measures. These shall include, but not be limited to the following measures:

- CONTRACTOR shall monitor the consumption of electricity and record the kWh used.
- CONTRACTOR's Resource Management Implementation Plan shall propose methods to minimise electricity use.
- If CONTRACTOR uses electricity from the grid, its Resource Management Implementation Plan shall propose measures to prevent the Project's energy draw having a negative impact on community access to power.
- CONTRACTOR shall implement procedures to turn off non-essential electrical equipment when it is not in use, and shall plan the warm-up or charge-up time where equipment requires it to minimise unnecessary time turned on.
- CONTRACTOR shall select electrical equipment of a size that is appropriate for the functions to be performed with a view to maximising energy efficiency.

11.4.5 Timber

Any removal of trees shall be carried out by CONTRACTOR in accordance with the requirements of the Ministry of Ecology and Natural Resources (MENR) requirements.

CONTRACTOR shall be responsible for obtaining all necessary permits as per Appendix C.

Land agreements for the removal and disposal of trees need to be made with the landowner (which is generally a private individual, municipality authorities or the Government for state land) and agreed by COMPANY.

11.4.5.1 Forest fund of Azerbaijan Republic

Trees on land designated as forest fund land shall generally remain the property of the MENR who will grant permission for tree removal.

In summary CONTRACTOR shall:

- Advise MENR of the area that requires removal including an inventory of trees that have Red Data Book status (CONTRACTOR shall liaise with the ECOLOGICAL MANAGEMENT CONTRACTOR who will identify these species)
- Obtain forest use agreement with MENR, which will identify tree removal and disposal strategy
- Produce a detailed forest/area inventory in coordination with the MENR representatives that shall be submitted to MENR
- Trees shall be disposed of as directed by the MENR and agreed by COMPANY.

11.4.5.2 Non-forest land

Ministry of Ecology and Natural Resources of Azerbaijan Republic (MENR) together with the agencies related to it, has the purpose of ensuring current legislation compliance, efficient usage of plants not included into the forest fund, and prevention of their illegal cutting.

For other land, similar requirements including detailed inventory and identification of RDB and other species will apply. However, the agreement for the removal and disposal of trees on private land needs to be made with the landowner (which is generally a private individual, municipality authorities or the MENR) and agreed by COMPANY.

Trees that are not required by MENR or landowner shall be offered to the local community in sizes that are easily transportable or mulched and stored for use during pipeline reinstatement.

CONTRACTOR shall source any timber required for construction legally from sustainable suppliers. CONTRACTOR shall submit proposals for supply of timber that demonstrate this, to COMPANY for approval.

11.5 Verification and Monitoring

CONTRACTOR is responsible for managing and tracking its own actions.

CONTRACTOR shall be responsible for documenting resource use over time and for monitoring the success of the measures implemented under its own Resource Management Implementation Plan to promote sustainable use of resources. CONTRACTOR shall routinely submit monitoring data so COMPANY can evaluate the environmental performance of the Project.

CONTRACTOR shall record KPI data as specified in Section 20.4.

CONTRACTOR shall carry out site inspections to identify work practices that could be changed to reduce the requirement to aggregate to be supplied or water to be extracted, and to improve fuel efficiency or reduce electricity use.

CONTRACTOR shall submit to COMPANY a monthly report containing the following quantitative measures:

- Cubic metres of water used at Camp
- Cubic metres of water used for hydrotest
- Cubic metres of water abstracted from boreholes and rivers
- Cubic metres of aggregate material used for construction
- kWh electricity used at Camp
- Litres of fuel used
- Cubic metres of discharged wastewater.

CONTRACTOR shall submit data as necessary to the regulator as per the terms and conditions of any licences or consents which they hold.

12 CONSTRUCTION CAMP MANAGEMENT PLAN

12.1 Scope

This Construction Camp Management Plan relates specifically to the following issues:

- Restriction of access to camp and use of its facilities
- Induction briefings on camp rules and awareness of local issues and sensitivities
- Camp HSE requirements.

12.2 HGA Standards and Practice

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered has been described below.

The main international guidance on camp management that is relevant to the Project is the International Finance Corporation Performance Standard (IFC PS) 2: Labour and Working Conditions. Requirements relevant to this Project include the following:

- Investigate allegations of abuse of the workforce, child labour or forced labour
- Investigate and implement opportunities for local employment
- Provide information on terms and conditions of employment
- Allow workforce representation and consultation
- Develop and implement an employee code of conduct
- Promote a constructive worker-manager relationship based on clear human resources policies and equal opportunities
- Provide health and safety at work
- Implement a grievance mechanism procedure
- Assess potential impacts of security arrangements
- Raise awareness of employees, contractors and subcontractors.

12.3 Roles and Responsibilities

General responsibilities for environmental and social management are defined in Section 3. Responsibilities relating specifically to construction camp management are defined in this section.

12.3.1 COMPANY

COMPANY shall be responsible for:

- Verifying that worker welfare conditions within camps is maintained through a system of audits
- Routine monitoring of standards of camps being used during construction against initial documentation.

12.3.2 CONTRACTOR

CONTRACTOR shall be responsible for:

- Development of a Construction Camp Implementation Plan and related plans and procedures to address mitigation of environmental and social impacts associated with the construction camps
- Providing a mechanism to receive and respond to grievances of camp residents
- Ensuring rapid closeout of all construction camp related community grievances.

12.4 Impact Avoidance and Mitigation

This section details measures that have been adopted by the Project to avoid and reduce impacts associated with development and occupation of construction camps that will be developed for the SCPX Project.

CONTRACTOR shall develop a Construction Camp Implementation Plan that, as a minimum, addresses the measures included in this Construction Camp Management Plan. The Construction Camp Implementation Plan shall be submitted to COMPANY for approval.

12.4.1 Security

CONTRACTOR shall ensure that necessary security measures are in place to restrict unauthorised access to, or use, of camp facilities, according to the following commitment:

33-10	No unauthorised access to, or use of, camp facilities will be allowed.

CONTRACTOR's Construction Camp Implementation Plan shall include details of camp security measures and of how these will be communicated to the workforce. The security procedure, as a minimum, shall include:

- Use of security passes for camp personnel
- Limit on hours of movement outside of camps
- No use of camp vehicles for non-work business
- Provision of induction training for personnel on security issues related to camp and surrounding community.

CONTRACTOR shall ensure that camps have adequate lighting to deter intruders.

12.4.2 Camp Induction Training

The SCPX ESIA has committed to implement a workforce training programme which includes a briefing on camp rules and awareness of local issues which CONTRACTOR shall undertake:

33-09	Workforce training will include a briefing on camp rules and awareness of local issues and sensitivities.

CONTRACTOR's Construction Camp Implementation Plan shall include details of issues to be addressed during camp induction training session. These shall include, but not be limited to, the following subjects:

- Camp security
- Health and safety
- Environment and social requirements
- Code of Conduct:
    - Control of disruptive noisy activities
    - Drug, alcohol and smoking policy

  - Other restricted activities
- Local culture and sensitivities
- Evacuation during emergency situation.

12.4.3 Workforce Health

The SCPX ESIA has committed to provide medical facilities at the camps. Health awareness training, including communicable diseases, shall be provided to all the workforce and an awareness campaign about communicable diseases will be run for communities close to the camps.

The CONTRACTOR shall implement the following commitments:

31-10	A non-communicable disease (NCD) awareness programme will be implemented.
31-11	Pre-job fitness for task assessments will be implemented and will be repeated at regular intervals based on the employee risk profile.
31-12	Project will prohibit the workforce from participating in illegal activities including use of illegal drugs.
31-13	Worker education and awareness programmes will be conducted and materials regarding the health hazards of smoking, alcohol and substance abuse will be provided.
31-14	A worker education and awareness programme regarding the risks and prevention measures associated with STIs including HIV/AIDS and other communicable diseases (e.g. TB) will be implemented.
31-16	Temporary Project housing structures will be constructed and maintained according to internationally accepted design specifications for space occupancy per person.
31-17	The Contractor will operate a personnel health programme which will aim to prevent illness and disease occurring, and will include immunisations as required.
31-18	A workplace Tuberculosis control programme will be implemented.
31-19	A food sanitation programme will be developed and implemented within all Project catering facilities based on internationally recognised standards.
31-20	Food-borne illness investigation procedure will be implemented and workers will be educated regarding the prevention of food related illnesses (e.g. hygiene practices).
31-21	Food service operations, practices and facilities will be regularly inspected and findings and resolved non-compliance issues will be documented immediately.
31-22	Measures for preventing zoonotic disease transmission will be implemented.
31-23	A vector-related disease (VRD) prevention programme will be implemented.

CONTRACTOR's Construction Camp Management Implementation Plan shall address these issues.

The COMPANY shall implement the following commitment:

31-15	The project will make information on communicable diseases and STIs available to communities close to the camps.

12.4.4 Code of Conduct

The SCPX ESIA has committed to develop and implement a Construction Camp Management Plan that considers camp rules, community liaison, and other issues related to camps, according to the following commitments:

19-05	No hunting, fishing or unauthorised gathering of products (including plants and cultural heritage artefacts) by the workforce will be permitted within the Project footprint.
25-07	Camp rules will be developed and implemented and will include restrictions on noisy activities (e.g. inappropriate use of personal radios) to help avoid causing disturbance.
33-04	An employee Code of Conduct will be in place and issued to all recruits and camp residents during the employee induction process.
33-06	The Employee Code of Conduct will prohibit the workforce from participating in illegal activities, including use of illegal drugs, bribery and corruption or requesting or receiving gifts from communities.

CONTRACTOR's Construction Camp Management Implementation Plan shall address these issues.

12.4.5 Noisy Activities

The SCPX ESIA has committed to mitigate impacts of noisy activities in order to avoid any public disturbance or disturbance of camp residents.

During pre-construction the CONTRACTOR shall undertake the following commitments:

25-20	The distances from the nearest dwellings to temporary working areas will be determined and commitments 25.09, X9.03 and X9.04 implemented where dwellings are close enough for there to be medium or high predicted impacts from noise during construction.
X9-03	Site layout will be designed, where practical and feasible, to locate noisy plant in areas further away from houses at the BVR at KP172 and camps and pipe storage areas where a risk assessment shows that there may be significant noise impacts on sensitive receptors
X9-04	An assessment and a baseline noise survey will be undertaken prior to construction at any camp and pipe storage areas located within 450m of dwellings, or other sensitive receptors such as schools or hospitals, and at locations where the proposed SCPX route passes in close proximity to dwellings (KP62.2, KP104-KP108, KP116-KP120, KP121-KP125, KP287-KP289); and at the BVRs at KP21 and KP172

CONTRACTOR's Construction Camp Management Implementation Plan shall include measures that mitigate noise adequately to avoid disturbing local residents (e.g. locate generator away from households, and provide noise-insulating housings on noisy equipment in order to minimise noise disturbance).

12.4.6 Restrictions on Drug and Alcohol Consumption

The SCPX ESIA has committed to control alcohol consumption through implementation of strict policy on drug and alcohol consumption.

CONTRACTOR shall implement the following commitment:

33-08	A Company policy limiting alcohol consumption in construction camps will be applied.

CONTRACTOR shall restrict consumption of alcohol and implement a zero tolerance policy of drunkenness in the workplace during on-duty hours. This programme will aim at preventing over-consumption of alcohol at construction camps and in communities along the route. It will include random testing in accordance with COMPANY's Health, Safety and Security Plan and CONTRACTOR's Drug and Alcohol Policy.

The CONTRACTOR shall implement zero tolerance of drugs. The goal of this programme is to minimise the possibility of incidents whereby construction workers obtain and consume illegal substances. It will include random testing in accordance with COMPANY's Health, Safety and Security Plan and CONTRACTOR's Drug and Alcohol Policy.

12.4.7 Local Culture and Sensitivities

The SCPX ESIA has committed to avoid any local disputes through respecting local culture and values. CONTRACTOR shall ensure that camp workers are aware of local issues and sensitivities, and respect local culture and values in order to avoid any local disputes and crime.

The SCPX ESIA has committed to provide a range of recreational facilities within the camps to minimise the need for finding recreation in the local community, and CONTRACTOR shall implement the following commitment:

33-11	A range of recreational facilities will be provided within the camps to reduce the need for finding recreation in the local community.

12.5 Monitoring and Verification

CONTRACTOR shall monitor the implementation on the measures in its Construction Camp Management Implementation Plan.

CONTRACTOR shall maintain a record of camp management activities including but not limited to:

- A community complaints register with camp-related community grievances identified
- A separate workforce complaints register with camp-related workforce grievances identified
- The number of alcohol- or drug-related incidents.

13 INFRASTRUCTURE AND SERVICES MANAGEMENT PLAN

13.1 Scope

The scope of this Management Plan relates specifically to the following infrastructure and services management issues:

- Crossing Schedule and Planning
- Accidental Damage
- Water Supply and Land Drains
- Flood Control
- Roads
- Buildings
- Service Integrity.

13.2 HGA Standards and Practice

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered has been described below.

- IFC Performance Standard 4: Community Health, Safety and Security (January 2012)
- IPLOCA: 'Onshore Pipelines – The Road to Success' (2009 Draft), Section 6: 'Best Practice in Planning and Construction Techniques'. S.6 Best Practices in Planning and Construction Techniques.

Specific text from the guidance is presented below:

- Projects design, construct, and operate and decommission the structural elements or components of the Project in accordance with good international industry practice, and give particular consideration to potential exposure to natural hazards, especially where the structural elements are accessible to members of affected communities
- Projects employ qualified, certified and experienced professionals approved by competent professional organisations to design and construct infrastructure and services
- Projects seek to prevent the occurrence of incidents and accidents associated with the movement of equipment on the roads
- Projects design new facilities to avoid using fresh water for industrial purposes if it could impact on a community's ability to use fresh water.

13.3 Roles and Responsibilities

13.3.1 Company

COMPANY shall be responsible for the activities described in Section 5.1.

13.3.2 Contractor

CONTRACTOR shall be responsible for the activities described in Section 5.2 and for carrying out and documenting a detailed pre-construction survey of any area that the Project could impact due to CONTRACTOR activities.

13.4 Impact Avoidance and Mitigation

This section details measures that have been adopted by the Project to prevent mitigate impacts infrastructure and services during construction of the SCPX Project. CONTRACTOR shall develop a Infrastructure and Services Management Implementation Plan that, as a minimum, complies with the measures included in this Infrastructure and Services Management Plan. The Infrastructure and Services Plan shall be submitted to COMPANY for approval in accordance with the CONTRACT requirements.

13.4.1 Community Relations

Liaison with communities is covered in the Community Liaison Management Plan. Of particular relevance to infrastructure and services is the role of CONTRACTOR`s Community Liaison Officer (CLO) in providing information to communities (e.g. on the reasons for changes in infrastructure such as road upgrades), and in receiving complaints and feedback from communities with regard to the condition and or disruption of services and infrastructure.

CONTRACTOR shall communicate with communities about infrastructure and services issues as outlined in the Community Liaison Implementation Plan.

The SCPX ESIA has committed to consult with the affected communities if there is likely to be any disruption to the existing infrastructure and services. Advance warning, (at least 72 hrs) of any planned impact on infrastructure will be provided to local communities. Where disruption will be for more than 12 hours, CONTRACTOR shall carry out a risk analysis of effects on affected settlement. Where there will be a risk to health or livelihood to settlements or where the disruption is not acceptable to the affected settlements, CONTRACTOR shall provide alternatives. If alternatives are not available, the method statement must be revised.

CONTRACTOR shall implement the following commitment for all third-party assets:

35-09	Pre-entry agreements including reinstatement requirements will be agreed prior to work affecting third-party assets.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

35-07	Affected landowners and occupiers will be consulted to determine their views on the requirement for temporary measures if irrigation systems are to be disrupted.
35-03	Any planned diversion of services will be communicated to local authorities and affected communities at least 72 hours in advance of the works.
37-01	Advance warning (at least 72 hours) of any road/track closures will be provided to local communities.

CONTRACTOR's Infrastructure and Services Management Implementation Plan shall address these issues.

CONTRACTOR's CLO shall determine land-owner requirements for temporary irrigation connections and water supply (e.g. to cattle troughs) during pre-entry negotiations as part of ROW pre-entry survey contractor to identify irrigation channels crossing the ROW. The CONTRACTOR shall be responsible for implementing agreed temporary measures.

CONTRACTOR's CLO shall provide information to communities and local authorities on the reasons for changes in infrastructure such as road upgrades, advice on diversions and temporary closures and disruptions. Feedback from communities shall be taken into account during planning of the works.

Any complaints shall be handled in accordance with the Community Liaison Management Plan.

CONTRACTOR shall take necessary measures to minimise impact of water and power consumption on surrounded communities.

13.4.2 Crossings Schedule and Planning

A crossing schedule including all known roads, telephone and electricity facilities and oil, gas and water pipes shall be prepared by CONTRACTOR. CONTRACTOR will gain full agreement with the owners.

During construction CONTRACTOR shall be aware of the potential for unidentified services and structures and will take care to avoid any damage. CONTRACTOR shall repair any damage caused.

Where there will be planned diversions to infrastructure or services, this will be identified by CONTRACTOR with as much advance warning as possible. All planned diversions will be communicated to local authorities at least three days in advance and to communities through pre-construction meetings also at least three days in advance. The timing and duration of the diversion will be agreed between the CONTRACTOR and the affected party.

13.4.3 Accidental Damage and Interruption to Third-party Assets/Livelihood

Where infrastructure is damaged accidentally, CONTRACTOR shall agree a timetable for repair of the infrastructure with the authorities and the communities. Should the diversion result in loss of livelihood in the affected party's judgement, the validity of the claim and any necessary compensation will be determined in accordance with the Community Liaison Management Plan and the Land Management Plan.

Should infrastructure or services be disrupted accidentally, CONTRACTOR shall inform authorities of the affected communities of the reason for the disruption and CONTRACTOR shall work with the service owner to complete repairs in the shortest time possible. Within one day, written information shall be provided to the community leader providing details of the disruption, information on alternative measures (if appropriate) and any measures that will be taken to assess any damage caused as a result of the disruption. CONTRACTOR's CLO shall ensure that there is an announcement in public places and that notices are posted on the community notice board so that local residents are fully informed of the disruption.

CONTRACTOR shall provide a dedicated team/resources to repair damage to services and structures within the shortest time possible and provide temporary alternative source where applicable.

CONTRACTOR shall implement the following commitment:

36-03	If impacts to third party land or crops is caused by Project activity for example due to interruption of irrigation or drainage the project procedure on land and crop damage will be applied

COMPANY will only pay compensation to the CONTRACTOR if COMPANY approval has been sought prior to crossing works commencing.

13.4.4 Water Supply and Land Drains

A pre-construction survey (including photo material witnessed/approved by village leaders) of irrigation and drainage systems is required before construction begins. The information will be used by CONTRACTOR to maintain the continued viability of the pre-existing irrigation and drainage systems throughout the Project. CONTRACTOR's Infrastructure and Services Management Implementation Plan shall detail provisions for CONTRACTOR to fulfil the following commitments:

Pipeline, camps, access roads and all facilities:

35-05	Surveys of irrigation and drainage systems will be undertaken before construction to determine their location and condition.
35-06	The Contractor will aim to maintain the integrity and viability of functional irrigation and drainage systems will be maintained throughout construction, for example, by using measures such as pumping, channel diversions and fluming. Any deviations will be subject to approval of the Company.
35-08	Any disrupted irrigation or drainage system will be reinstated on completion of construction to a standard at least equal to their original condition.

13.4.5 Flood Control

The SCPX ESIA has committed to monitor weather forecasts to minimise the risk of flooding agricultural land, property or infrastructure.

CONTRACTOR shall undertake the following commitment:

Pipeline, camps, access roads and all facilities:

13-01	The Construction Contractor will monitor weather forecasts and avoid creating temporary dams in watercourses if flooding is likely.

CONTRACTOR shall undertake the following commitment to avoid any environmental, social and health and safety impacts associated with flooding.

13-05	The Contractor will undertake a flood risk assessment of any major open cut watercourse crossings that are planned to be constructed between April-June inclusive. This will identify potential environmental, social and health and safety impacts if flooding should occur and propose contingency plans with the aim of reducing any potential risks and impacts.

CONTRACTOR's Infrastructure and Services Management Implementation Plan shall address these issues.

13.4.6 Traffic

The SCPX ESIA has committed to minimising traffic disruption and CONTRACTOR shall employ temporary control measures and signs to ensure safety.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

2-02	Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency).
37-02	A bypass/alternative routes will be provided at locations where road closure is unavoidable.
37-03	Temporary traffic control (e.g. flagmen) and signs will be provided where necessary to improve safety and provide directions.
37-04	Temporary traffic control measures will be employed at road crossings and junctions (flagmen, temporary traffic lights) where a safety risk assessment has identified traffic control measures will reduce the risk of traffic accidents.
37-14	Where it is necessary to maintain traffic flow, the crossing will be made in two stages, and only one half of the road width will be used at a time. Steel plates will be laid to maintain one lane of through traffic.
D5-055	Line pipe shall be transported by trucks from the pipe yards to the ROW along approved access routes and then along the ROW to the required location.

CONTRACTOR shall implement the following commitment:

37-05	The authorities will be notified when oversize heavy loads need to be transported and the loads will be escorted by the Project.

COMPANY shall implement the following commitment:

D5-036	The line pipe will be transported by rail to off-loading points and pipe storage areas to reduce the number of HGV movements.

CONTRACTOR's Infrastructure and Services Management Implementation Plan shall prepare a schedule of locations where road closure is unavoidable and provide details of alternative routes. It shall also detail specify traffic control measures for road crossings where delays or public safety are an issue.

13.4.7 Roads (Access and Service)

The SCPX ESIA has committed to maintain surface of access roads through regular inspections and repair. Prior to construction, the SCPX ESIA is committed to survey the access roads to determine their condition. The SCPX ESIA has committed CONTRACTOR to employ temporary traffic control measures at road crossings and junctions.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

37-07	Following construction, the Contractor will repair roads to at least their pre-construction condition.
37-08	Surface of frequently used access roads will be subject to regular inspections and repair, with the aim of ensuring they are maintained in a good condition particularly where fragile buildings are close to roads (subject to site-specific survey).
37-17	The Project will undertake a road condition survey before construction begins in areas as defined by Project.
37-18	The Project will use the existing access roads established for construction of the BTC and SCP pipelines to access the pipeline ROW as far as practical.
37-20	Prior to selection, all access routes will be subject to a multidisciplinary assessment.

The CONTRACTOR's multi-disciplinary assessment of access routes shall be documented and shall give consideration to but not limited to the following factors: ecological sensitivity,

known archaeological sites and potential impacts on community health and safety and infrastructure.

CONTRACTOR shall be required to perform an initial survey of the condition of roads to be used including bridges, drainage structures, signage, traffic management and other road infrastructure in coordination with COMPANY. The scope of the survey shall include all roads that are not major highways and shall be proposed by the CONTRACTOR and agreed by the COMPANY.
The survey report shall document the proposed use of the road (e.g. for major equipment/supply transport, light vehicle use etc) and shall include photographic and/or video and related technical documentation necessary to establish the condition of the road and supporting infrastructure and any repairs / safety upgrades that are required before construction starts. Photographs should be taken of any pinch points and residential buildings which are on the side of the road (within 20m). The survey shall be signed by CONTRACTOR and road / municipal authority (if practical) and any affected land owner or the results made available to the road/municipal authorities. Each agreement shall be witnessed by COMPANY. Following the initial analysis and agreements, CONTRACTOR shall obtain the necessary permits to begin any necessary upgrade works.

COMPANY and CONTRACTOR'S social team shall undertake a visual survey of the dwellings located on any internal village roads to be used by CONTRACTOR. Information on each dwelling that could be impacted by Project transport shall be assessed and documented by written and photographic means. The assessment shall form part of a mutual agreement to be formed with the local municipalities.

CONTRACTOR shall improve the access routes as required to provide safe access for the duration of the Project. This work shall consist of clearing, rehabilitation of the road surface, and expansion of some curves as required so that the vehicles carrying materials and supplies can travel safely. The widths of roads and curves shall be established, bridges shall be strengthened and drainage works restored. If necessary, safety structures shall be built in areas affected by construction (dry walls, containment walls, etc.).

CONTRACTOR shall ensure that all personnel use only approved access roads.

CONTRACTOR shall inform COMPANY Representative of any new access roads required. A cultural heritage survey, as well as an ES assessment as described in the Land Management Plan shall be prepared by CONTRACTOR, approved by COMPANY, before construction on any new road commences. All roads shall be constructed in line with Project technical and environmental and social requirements.

Following reinstatement of access roads as per the Reinstatement Plan, an exit survey shall be undertaken by CONTRACTOR. The survey shall cover all pre-entry areas surveyed and additional areas or property affected by access. Photographic evidence of road and infrastructure condition shall be taken of all areas covered in pre-entry above and any potential areas of concern. CONTRACTOR shall be responsible for closing out any actions on a timely basis arising from the exit survey to ensure a smooth return to the relevant authority/village or landowner. CONTRACTOR shall refer to the Land Management Plan for further requirements on hand-back requirements.

13.4.8 Buildings

The SCPX ESIA has committed to undertake surveys and monitoring in order to provide data and record the external conditions of buildings in the event of claims for damage.

The CONTRACTOR shall undertake the following commitment:

25-14	A survey will be undertaken to record the external condition of buildings in close proximity to the ROW or access roads prior to construction; this will provide baseline evidence in the event of claims for damage.

CONTRACTOR's Infrastructure and Services Management Implementation Plan shall address these issues and will include details for vibration monitoring at sensitive locations.

13.4.9 Service Integrity

The SCPX ESIA has committed to implement measures to protect the integrity of third-party services, and to repair any accidental damage promptly.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

35-01	Contractor will prepare a Method Statement that includes measures to protect the integrity of the third-party services and is acceptable to the service operator.
35-02	Any damage to third-party services to be repaired promptly in consultation with, or by the service operator.
35-04	In the event of a disruption to services the Contractor will work with the service owner to effect repair in reasonable time.

CONTRACTOR's Infrastructure and Services Management Implementation Plan shall address these issues.

13.5 Verification and Monitoring

CONTRACTOR shall monitor the implementation of the measures in its Infrastructure and Services Management Implementation Plan in accordance with the requirements of Section 21 of this ESMMP.

13.5.1 Infrastructure and Services Monitoring and Reporting

CONTRACTOR shall record communications with communities and with third-party infrastructure and service providers.

CONTRACTOR shall regularly inspect the condition of the existing infrastructure and services used by the Project, gather photographic evidence and collect data on the KPIs.

CONTRACTOR shall report any damage to existing roads, bridges, water supplies, power supplies and buildings to COMPANY immediately.

CONTRACTOR shall maintain a record of infrastructure and services activities including but not limited to:

- A community complaints register with infrastructure and services-related community grievances identified
- Number of community improvement initiatives taken by the Contractor.

14 COMMUNITY HEALTH, SAFETY AND SECURITY PLAN

14.1 Scope

The scope of this Management Plan relates specifically to the following community health and safety management issues:

- Road Safety in Communities
- Right Of Way Safety and Communities
- Community Health
- Raising Safety Awareness in Communities.

14.2 HGA Standards and Practice

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered has been described below.

- IFC Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development (April 2007)
- IFC General EHS Guidelines 3 Community Health and Safety (April 2007)
- IFC General EHS Guidelines 4 Construction and Decommissioning (April 2007)
- IFC Performance Standard 4: Community Health, Safety and Security (January 2012)
- IFC Performance Standard 4: Community Health, Safety and Security (January 2012)
- IPLOCA: 'Onshore Pipelines – The Road to Success' (2009 Draft), Section 6: 'Best Practice in Planning and Construction Techniques'. S.6 Best Practices in Planning and Construction Techniques.

Specific text from the above guidance is described below:

- Projects prevent or minimise the potential for community exposure to hazardous materials that may be released by the Project
- Projects prevent or minimise the potential for community exposure to communicable diseases that could be present within the Project workforce
- Projects ensure that the effects of a Project's security arrangements (safeguarding of personnel and property) respect local community interests
- Projects should develop an Emergency Preparedness and Response Plan to avoid risks to human health within the Project facility.

14.3 Roles and Responsibilities

The roles and responsibilities of COMPANY and CONTRACTOR shall be as described in Section 3.

The Contractor will be required to keep the PROJECT informed in advance of the construction schedule, progress and key activities that may affect communities in order to facilitate PROJECT communications with local communities.

14.4 Impact Avoidance and Mitigation

This section details measures that have been adopted by the Project to avoid and reduce risks to community health and safety during construction of the SCPX Project.

CONTRACTOR shall develop a Community Health and Safety Implementation Plan that, as a minimum, complies with the measures included in this Community Health and Safety Management Plan. The Community Health and Safety Implementation Plan shall be submitted to COMPANY for approval in accordance with CONTRACT requirements.

The Contractor will be required to keep the COMPANY informed in advance of the construction schedule, progress and key activities that may affect communities in order to facilitate BP communications with local communities.

14.4.1 Design and Pre-Construction Commitments

COMPANY shall incorporate the following commitments into the project design which shall be implemented by the CONTRACTOR during construction:

D11-04	A general minimum separation distance of 20m is applied between SCPX and SCP/BTC. At crossings, additional control of work measures will be applied.
D11-05	At the block valve sites the separation distance between 56" SCPX pipeline and the 42" SCP pipeline and the SCPX block valves and the BTC/SCP block valves will be no less than 28m.
D5-010	Where the SCPX pipeline crosses buried services or pipelines, trenchless or open cut crossing methods will be adopted. A typical vertical separation between the SCPX pipeline and the existing service or pipeline will be 1500mm where trenchless techniques are used, and 900mm where open cut techniques are used.
D5-011	Construction of crossings of the existing BTC and SCP pipelines will be controlled under the existing pipeline operations permit to work system and the activity will be subject to a specific risk assessment undertaken by both the construction contractor and Operations BTC and SCP operations team.
D12-02	In specific areas, for example close to communities, heavier wall pipe will be used to reduce the risk of pipeline failure in accordance with international standard (ASME B31.8)
X5-17	Site-specific crossing designs for open-cut watercourse crossings will be prepared that will specify the depth of installation and set back distance, based on a hydrological assessment of the river, and will consider the need for protection works to protect the integrity of the pipe.
D5-034	An increased wall thickness with a design factor of 0.6 will be applied at major road, railway and river crossings to meet the requirements of API RP 1102.

CONTRACTOR shall implement the following commitments during pre-construction:

X16-01 Agstafa Camp Option 3	At Agstafa Camp Option 3, passing places will be constructed along the access road.
X16-03 Saloghlu Rail Spur	At Saloghlu Rail Spur and Offloading Area, the existing access will be widened or an alternative access provided for existing users .
X9-04	An assessment and a baseline noise survey will be undertaken prior to construction at any camp and pipe storage areas located within 450m of dwellings, or other sensitive receptors such as schools or hospitals, and at locations where the proposed SCPX route passes in close proximity to dwellings (KP62.2, KP104-KP108, KP116-KP120, KP121-KP125, KP287-KP289); and at the BVRs at KP21 and KP172.

X9-05 Yevlakh Rail Spur and Offloading Area, Yevlakh Pipe Storage Area	A new access road will be created away from existing houses and occupied residences.
D8-02	Sensitive material and colour finishes will be used for the external facades of buildings.

14.4.2 Road Safety

CONTRACTOR's Community Health and Safety Implementation Plan shall include detailed traffic management measures that address the risk of accidents occurring during construction that involve communities and their animals. CONTRACTOR shall implement the following commitments and prepare a Transport Management Plan (integrated with the other CONTRACT requirements) which will comply with the following requirements:

Pipeline, camps, access roads and all facilities:

30-02	At sensitive locations where Project construction traffic will be using local roads, and particularly where schools and markets are close to the road, awareness of safety issues will be raised through village meetings and classroom lessons.
30-15	Random drug and alcohol testing of the workforce will be conducted, recorded and audited regularly.
30-21	Where traffic is diverted around crossings, traffic control or careful selection of the exit from the working areas will be provided with the aim of ensuring that vehicles join the road in a safe manner.
30-22	The selection of any further access roads (in addition to those used during BTC/SCP construction) to Project working areas will aim to avoid sensitive receptors such as centres of communities, hospitals, clinics and schools as far as practicable
30-24	The contractor will be expected to use the designated access roads and to apply for Company consent to use any new or existing roads not designated for Project use.
37-03	Temporary traffic control (e.g. flagmen) and signs will be provided where necessary to improve safety and provide directions.
37-04	Temporary traffic control measures will be employed at road crossings and junctions (flagmen, temporary traffic lights) where a safety risk assessment has identified traffic control measures will reduce the risk of traffic accidents.
37-09	All contractors and subcontractors will adhere to BP driving rules.
37-10	Night-time driving will be by exception only, as approved by the Company to minimise driving risk and disturbance to communities.
37-11	The Project will aim to provide buses to transport non-camp resident workers to the construction sites.
X12-05	Traffic management measures will be developed and implemented with the aim of minimising impact to communities.
X12-05 locations: Gazanchi Pipe Storage Area Option B, Gazanchi Rail Spur and Offloading, Kurdemir Pipe Storage Area 1 (Mususlu) including access, Kurdemir Pipe Storage Area 2 (Mususlu) including access, Kurdemir Rail Spur and Pipe Offloading Area Option 1, Mugan Rail Spur and Offloading Area, Mugan Pipe Storage Area , Samukh Camp Option 3	

CONTRACTOR and COMPANY shall implement the following commitments:

24-02	A strict Project speed limit of 30km/hr will be enforced for project vehicles using unmade tracks and the ROW.

CONTRACTOR's Transport Management Plan shall also include a journey risk management study, to be agreed with COMPANY, which details the following:

- Access roads to be used by CONTRACTOR
- Identification of constraints along the route such as all schools, cattle markets etc.
- Proposal of additional mitigation measures such as restriction on driving hours, speed limits etc. using COMPANY proforma.

14.4.3 General Access Safety

Pipeline, camps, access roads and all facilities

The CONTRACTOR shall implement the following commitment:

30-23	The ROW of the SCPX pipeline and any additional temporary workspaces will be surveyed and set out (i.e. marked out and, where necessary, fenced off). The contractor will be required to keep within the designated footprint.

The SCPX ESIA has committed to consult communities to determine the requirements for people to cross the ROW, as specified in the commitments below which shall be implemented by the CONTRACTOR:

Pipeline:

32-08	Gaps will be left in pipe strings where safe to do so and necessary to allow people, wildlife and livestock to cross the ROW.
30-06	Bridges will be provided across open trenches and welded pipes at locations where there is a demonstrable need for people to cross, if it is reasonable for them to do so and can be accommodated safely, taking into account works being undertaken in that area at the time.

CONTRACTOR shall maintain safe access across the pipeline ROW to enable people and animals to move freely between land parcels.

Pipeline, camps, access roads and all facilities:

In order to minimise disruption to local communities, the CONTRACTOR shall adopt the following measures:

30-17	Warning posts and bunting will be erected to mark overhead cables and temporary crossing points.
32-04	The Project will provide a substitute for watering holes used by livestock that cannot be used due to Project-related actions. The substitute will be of a type, and in a location, to be agreed with representatives of the livestock owners and herders.
20-03	Warning barriers and/or signs will be erected where the pipeline route crosses locations identified with local communities as being heavily used by people, including herders.

Open excavations present a risk to people and animals, particularly if they are flooded. The SCPX ESIA has committed to fence areas of open excavations and the ROW (both pipeline and access road) in certain areas in order to minimise the risks of accidents. CONTRACTOR shall comply with the following requirements:

30-04	Protective barriers will be erected at excavations at a road or river crossing, close to a community or that are flooded temporarily in accordance with the Community HS&S Plan; warning barriers will be deployed around areas of lesser risk to members of the public.
30-18	Construction traffic warning signs will be positioned at road crossings and other appropriate locations as determined by the Project, for example road signs will be positioned along access routes before they are used by construction traffic.

32-09	The pipe will not normally be strung on the ROW more than 15km in advance of pipeline welding.
3-34	If water accumulates in the open trench (either from rainfall or because of a high water table), it will be pumped out before the pipe is lowered into the trench. All trench water will be discharged safely with the aim of minimising erosion.
30-09	Water will be pumped from flooded excavations (e.g. with centrifugal pumps or well-points as appropriate) where a risk assessment concludes that they present a safety risk.

Note: Excavations shall also include drilling and/or tunnelling entry and exit pits/shafts.

As a minimum, protective barriers shall be erected at excavations where a community is present within 500m of the excavation (measured from the perimeter of the community). For flooded excavations this distance shall be increased to 2km. This distance may only be reduced subject to the results of a location specific risk assessment.
Protective barriers shall provide a deterrent to entry by a community member and will have high visible warning signs in the appropriate language(s) with supporting graphics.

14.4.4 Community and Security Interaction

CONTRACTOR shall apply due diligence to the selection of security providers, develop rules of engagement and provide training to security personnel. BP's Voluntary Principles on Security and Human Rights (2008) shall be applied and the Project shall implement the following commitments.

30-10	The project will implement the Voluntary Principles on Security and Human Rights.
30-12	During construction (and operations), due diligence will be applied to selection of security providers, rules of engagement will be devised, and training provided to all personnel. Performance will be monitored and audited periodically.

14.4.5 Noise Impacts

CONTRACTOR shall implement the following site specific commitment:

X9-03	Site layout will be designed, where practical and feasible, to locate noisy plant in areas further away from houses at the BVR at KP172 and camps and pipe storage areas where a risk assessment shows that there may be significant noise impacts on sensitive receptors

Refer to Section 10.4.7.1 for additional information.

14.4.6 Community Health and Safety

Pipeline, camps, access roads and all facilities:

CONTRACTOR shall be required to develop a personal health programme to educate workers in illness and disease prevention measures to minimise the occurrence or spreading of diseases and undertake measures to reduce the potential risk of accidents and injury to local community members.

CONTRACTOR shall implement the following commitments:

21-01	The length of the continuous open trench (including trench with pipe installed but not backfilled and with a void space greater than 1m) will not exceed 10km per spread and the maximum length of the open trench will not exceed 15km per spread.
30-22	The selection of any further access roads (in addition to those used during BTC/SCP construction) to Project working areas will aim to avoid sensitive receptors such as centres of communities, hospitals, clinics and schools as far as practicable

31-02	Risk assessments will be carried out to identify sensitive receptors such as hospitals and clinics along Project access routes. The project will ensure that access to and from these facilities is not restricted by Project activities or an alternative access is in place and has been agreed with the hospital or clinic staff.
31-03	SCPX-related drivers will be briefed so they understand the importance of ensuring free access and egress of ambulances to the hospital and all traffic to clinics.
31-05	A risk assessment will be undertaken when considering waste water discharge options and locations.
32-09	The pipe will not normally be strung on the ROW more than 15km in advance of pipeline welding.
D30-01	Where it is considered that there is a higher risk of the pipeline being damaged or interfered with, or where other services are crossed and at track and road crossings, the pipeline will be covered by concrete slabs or set in concrete at open cut crossings.

CONTRACTOR shall develop a personal health programme to educate workers in illness and disease prevention to minimise the occurrence or spreading of diseases. CONTRACTOR's Community Health and Safety Implementation Plan shall provide details of the scope and the content of this programme and include who is responsible for implementing the programme. The programme will include immunisations as required.

CONTRACTOR shall provide health awareness training at induction and then periodically throughout construction to all national and expatriate staff, that includes awareness-raising on health considerations, including sexually transmitted diseases.

CONTRACTOR shall provide details of the scope, content and frequency of the health awareness training to be provided to staff in its Community Health and Safety Implementation Plan (see also the Construction Camp Management Plan for details of induction training).

14.4.7 Raising Safety Awareness in Communities

The SCPX ESIA has committed to raising community awareness of the safety risks associated with construction. CONTRACTOR shall comply with and implement the following requirements:

Pipeline, camps, access roads and all facilities:

30-08	Community Liaison Officers (CLOs) appointed by the Contractor will participate in, or deliver safety awareness training to, local children and their parents and/or their teachers.

CONTRACTOR's CLOs shall meet with local communities in advance of construction occurring in a particular area, to describe the construction activities and to explain the dangers associated with the construction works. Particular emphasis will be placed on talking to children and their parents/teachers and explaining the dangers of road traffic, construction sites and open excavations. CONTRACTOR's CLOs shall raise awareness of safety issues through village meetings and classroom lessons as per the Community Liaison Plan.

CONTRACTOR's CLOs will also advise local communities of the routes that will be used by construction vehicles and will explain that extra care will be needed when walking along or crossing these routes.

The CONTRACTOR shall undertake the following commitments:

33-15	The Project will review measures to mitigate community health and safety impacts regularly, and consult PAC leaders every six months, informing them on the status of implementation and results, and discussing any changes needed to the 'Pollution

	Prevention Plan' or the 'Community Health, Safety and Security Plan' in advance of proposed changes.

14.5 Verification and Monitoring

CONTRACTOR shall monitor the implementation on the measures in its Community Health and Safety Implementation Plan.

CONTRACTOR shall report to COMPANY all the safety incidents associated with construction traffic, farmers access to the agricultural lands and the spread of disease from the Project personnel to community members.

CONTRACTOR shall monitor driving behaviours using VDR data in accordance with the Health, Safety and Security requirements. Where this monitoring identifies inappropriate behaviours, CONTRACTOR shall implement corrective actions to improve driving behaviours.

CONTRACTOR shall monitor performance of security personnel against BP's Voluntary Principles on Security and Human Rights (2008).

15 COMMUNITY LIAISON PLAN

15.1 Scope

The scope of this Management Plan relates specifically to the following community liaison management issues:

- Community Relations Training
- Establishment and Maintenance of Good Community Relations
- Grievance Procedure.

15.2 HGA Standards and Practice

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Sec 3.1). Specific guidance considered has been listed and described below.

- IFC Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts (January 2012)
- IFC Performance Standard 4: Community Health, Safety and Security (January 2012)
- IFC Performance Standard 5: Land Acquisition and Involuntary Resettlement (January 2012)
- IPLOCA: 'Onshore Pipelines – The Road to Success' (2009 Draft), Section 6: 'Best Practice in Planning and Construction Techniques'. S.6 Best Practices in Planning and Construction Techniques.

Specific guidance text from the above documents is described below:

- Projects implement measures to mitigate infrastructure and property damage when planning activities, and where the Project can cause damage beyond reasonable wear and tear to services and infrastructure the community relies on, such as roads, bridges, community centres, schools and places of worship or to homes or livestock
- Projects implement mitigation measures to address inconvenience to communities caused by impeded access, temporary or permanent blocking of access or restricted access to routes normally used by Project-affected people, thus creating longer and delayed journeys; or the temporary or permanent exclusion of affected people from areas of land traditionally used for cultivation, gaining access to water, grazing or leisure
- Projects engage with Project-affected people, documenting their concerns, explaining the reasons for and the duration of the inconvenience and listening to their suggestions
- Projects carry out an on-going process of engagement, free of external manipulation, interference, coercion or intimidation, with communities that may be affected by risks or adverse impacts from a Project, to build and maintain over time a constructive relationship with these communities
- Projects disclose relevant Project information to help affected communities understand the risks, impacts and opportunities of the Project and provides such communities with information on the purpose, nature and scale of the Project, the duration of proposed Project activities, and any risks to the communities
- Projects undertake a process of organised and iterative culturally appropriate consultation in a manner that takes account of the needs of disadvantaged or vulnerable groups and provides the affected communities with opportunities to

express their views on Project risks, impacts, and mitigation measures, and allows the COMPANY to consider and respond to them
- Projects incorporating the views of the affected communities on matters that affect them directly, such as proposed mitigation measures and the sharing of development benefits and opportunities into their decision-making process
- Projects inform the affected communities about the grievance mechanism they have established to receive affected communities' concerns and grievances about the Project's environmental and social performance and facilitate resolution of them. They address concerns promptly, using an understandable and transparent process that is culturally appropriate and readily accessible to all segments of the affected communities
- Projects may consider negotiating community investments that do not favour one grouping (e.g., political party, religious sect, ethnic group) over another, and avoid exacerbating conflict between communities.

15.3 Roles and Responsibilities

COMPANY has the ultimate responsibility for community liaison during pipeline construction and in respect of the Project as a whole.

Community liaison will be a joint effort involving COMPANY and CONTRACTOR personnel working in parallel to communicate with affected communities and stakeholders.

15.3.1 Company

COMPANY shall be responsible for:

- Appointing COMPANY Community Liaison Officers (CLO)
- Consultation with key stakeholders
- Advising CONTRACTOR on the management of community interaction and liaison
- Approving the release of Project design information to stakeholders
- Maintaining a current list of all stakeholders as well as onsite contractors
- Facilitating resolution of complaints where applicable
- Facilitation, where appropriate, of communications between COMPANY, regulatory organisations, local people and other stakeholders on any social issue;
- Ensuring that CONTRACTOR takes accurate and timely action on any grievance will be taken
- Oversight of the Project complaint management system
- Assurance on CONTRACTOR investigation and resolution of reported complaints
- Assurance on the progress of complaints through a Complaint Register;
- Analysis of complaints to avoid recurrence of the concern or issues
- Being seen as an open-door authority for the complainant to be contacted at any time
- Facilitation (in support of CONTRACTOR CLO) in the event of a work stoppage.

15.3.2 Contractor

The CONTRACTOR shall be responsible for:

- Appointing CLOs as specified in Section 3.2.3 of this ESMMP
- Maintaining a complaints management system to register, investigate and resolve complaints received from communities
- Supporting COMPANY on conducting public meetings on specific topics (health, safety, preconstruction)
- Keeping the COMPANY informed in advance of the construction schedule, progress and key activities that may affect communities in order to facilitate COMPANY communications with local communities

- At the pre-construction phase of the Project, Contractor shall conduct public meetings regarding the employment opportunities and the recruitment process
- Implement corrective action (as agreed with COMPANY) to close out complaints
- Resolution of complaints (applicable to CONTRACTOR)
- Taking accurate and timely action on any grievance will be taken
- Investigation and resolution of reported complaints
- Maintain an up-to-date Complaints Register
- Analysis of complaints to avoid recurrence of the concern or issues
- Key interface in the event of a work stoppage related to CONTRACTORS activities.

15.4 Impact Avoidance and Mitigation

This section details measures that have been adopted by the Project to communicate effectively with local communities before and during construction of the SCPX Project.

CONTRACTOR shall develop a Community Liaison Implementation Plan that, as a minimum, addresses the measures included in this Community Liaison Management Plan. The Community Liaison Implementation Plan shall be submitted to COMPANY for approval.

15.4.1 Community Relations Training

The induction training package provided by CONTRACTOR for its personnel and subcontractors' personnel shall include the control of direct communication of unauthorised Project personnel with third parties, but shall equip the workforce to explain to third parties how they can make a formal complaint, and how they can contact the Community Liaison Officers to receive information from the proper channels. CONTRACTOR shall reinforce community relations training with additional tool box training.

CONTRACTOR shall implement the following commitment:

Pipeline, camps, access roads and all facilities:

28-12	Particular emphasis will be paid to health and safety and community relations, with additional technical toolbox talks given on specific issues.

15.4.2 Establishment of Good Community Relations

COMPANY shall have primary responsibility for community liaison and will be the first point of contact for affected communities. CONTRACTOR shall appoint appropriately qualified and experienced CLOs (as detailed in Section 5.2.5), one of whom will be designated as the Lead CLO and will be appointed and mobilised to the Project at least 6 months before construction begins.

Pipeline, camps, access roads and all facilities:

CONTRACTOR's CLOs shall work in conjunction with COMPANY's CLOs who have established relations with many of the Project-affected communities to implement the following commitment:

33-03	The community liaison teams will maintain regular liaison with local communities before, during and after construction

CONTRACTOR shall implement the following commitments:

33-14	To avoid disturbance of particular local events such as funeral ceremonies by construction traffic, the Community Liaison Officers will encourage local community authorities to provide advance warning of funerals (and other similar events) so that the Contractor can avoid the movement of heavy vehicles, equipment and pipe through

	settlements at these times.
37-06	At locations where schools are very close to a road used by SCPX traffic, the construction contractor will plan works to minimise the delivery of heavy loads at times when children are likely to be walking to and from school.

CONTRACTOR's CLOs shall meet regularly with the communities to keep them informed about Project activities. The SCPX ESIA has committed to consult with people, regarding activities and buildings that may be particularly sensitive to disturbance.

CONTRACTOR with COMPANY approval shall be responsible for liaising with government authorities and PAC leaders.

The following commitments shall be implemented by the CONTRACTOR:

Pipeline, camps, access roads and all facilities:

24-05	Community Liaison Officers will identify any beekeepers whose hives are within 300m of the pipeline and facility construction, camp and pipe storage areas or access routes before the start of the honey production season. These beekeepers will be asked to move their hives (both mobile hives and stationary hives) a suitable distance (at least 300 metres) from the route for the season.
33-16	Information will be disclosed to PAC leaders regarding potential community health and safety impacts and mitigations at a sufficient level of detail to help these stakeholders to fully understand current and expected risks, and, as necessary, additional measures to be implemented.
33-19	Land users and local communities will be consulted to determine their requirements for access across the ROW.
X5-16 KP189, KP221, KP277, KP303, KP324	Existing liaison with gravel extraction companies will continue with the aim of ameliorating effects of the extraction works on the SCPX and existing BTC, SCP and WREP crossings at the Kurekchay, Shamkirchay, Zeyamchay and Tovuzchay.

CONTRACTOR's Community Liaison Implementation Plan shall set out how and when consultation will be undertaken.

The CONTRACTOR and COMPANY will implement the following commitment:

32-07	The project will inform land owners/users about any reuse restrictions that apply to land used by the project.

The COMPANY will implement the following commitment:

24-06	The Company will develop and implement a policy for the compensation of beekeepers adversely affected by Project impacts.

15.4.3 Grievance Procedure

The SCPX ESIA has committed to implement a grievance procedure.

CONTRACTOR shall implement the following commitments:

33-01	The Contractor will be required to develop and implement a Grievance Procedure to provide opportunity for local residents to raise concerns.

33-13	Mechanisms shall be put in place that allow individuals to express grievances about its project-related activities and employees. As part of such mechanisms a grievance register will be used to document all third-party grievances, corrective actions and outcomes.
33-18	Community Liaison Officers may assist in raising community awareness about emissions-related issues and ensuring emissions-related complaints are followed up and responses provided.

CONTRACTOR's Community Liaison Implementation Plan shall set out a formal grievance or complaints procedure to record, investigate and resolve any complaints from communities and individuals about Project activities or personnel that aligns to this Plan's requirements. The grievance system shall include all grievances including land, infrastructure, health and safety, environment, local recruitment and any others as necessary. Note that the industrial relations complaints system will be separate.

CONTRACTOR's CLO shall hear any complaints that the community or any individual makes, register the complaint in the grievance log and take action to resolve them in in compliance with the Project requirements. CONTRACTOR's CLO shall record the date and time, source, location and nature of each complaint in a Complaints Register.

CONTRACTOR's Community Liaison Implementation Plan shall set out the practical details of process it will implement for:

- Investigating each complaint to establish the root cause
- Determining whether an action should be implemented to stop the disturbance or impact or prevent its re-occurrence (e.g. changing or adding mitigation measures, disciplinary action).

Community complaints and their resolution shall be signed off by COMPANY.

COMPANY shall maintain a database of all complaints. CONTRACTOR shall be responsible for inputting complaints into this database in the required format.

CONTRACTOR shall:

- Communicate the actions taken with the individual, community or organisation that lodged the complaint
- Settle complaints and, where appropriate, compensate for damage caused by CONTRACTOR
- Work with COMPANY CLOs to ensure the process is closely adhered to.

CONTRACTOR's Complaints Register shall record how the complaint was dealt with and resolved and the time taken to deal with each complaint. Figure 15-1 below presents the complaints management procedure.

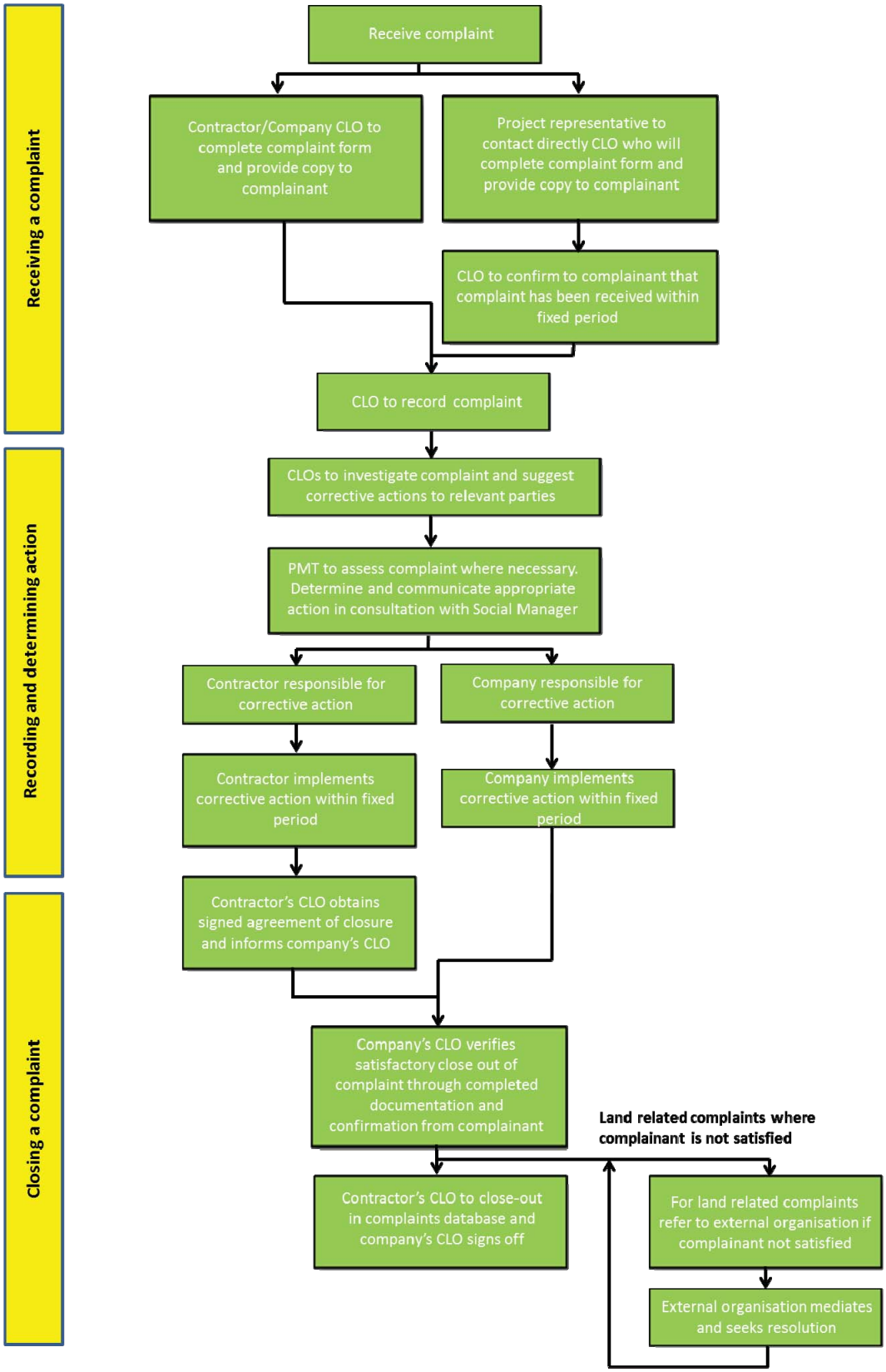


Figure 15-1: Flow Chart for Complaints Management

15.5 Verification and Monitoring

CONTRACTOR shall monitor the implementation of the measures in its Community Liaison management Plan.

CONTRACTOR shall as a minimum:

- Maintain minutes of all meetings with Project affected communities and with potentially affected individuals that record the issues discussed and the strength of the opinions expressed about them
- Maintain a Complaints Register that holds details of the time a complaint was made, the nature of the complaint, the actions taken to respond to the complaint, the actions taken to investigate the complaint, the appropriate actions taken, how the findings of the complaint were communicated to the aggrieved party and how and when the complaint was resolved.

CONTRACTOR's CLO shall work closely with COMPANY's CLO, and shall report immediately any serious complaint, and any complaint or enquiry that requires a response from COMPANY.

CONTRACTOR's Lead CLO shall conduct weekly CLO meetings, attended at COMPANY discretion, and submit a weekly update detailing the number and status of complaints and any outstanding issues to COMPANY.

CONTRACTOR's Social Manager shall meet with COMPANY's Social Manager at least monthly to decide what actions to take to address unresolved complaints.

16 LOCAL RECRUITMENT AND TRAINING PLAN

16.1 Scope

The scope of this Management Plan relates specifically to the following local recruitment and training management issues:

- Recruitment for construction-phase workforce (e.g. local employment, recruitment procedures, transparency, definition of skilled and unskilled work roles)
- Skills and HSE training.

16.2 HGA Standards and Practice

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered has been described below.

- IFC Policy on environmental and social sustainability, January 2012
- International Finance Corporation's IFC Performance Standards, 2007 and their associated Guidelines
- IFC/World Bank: 'General EHS Guidelines' and 'EHS Guidelines for Onshore Oil and Gas Developments', 2007.

The specific guidance considered is listed below:

- IFC General EHS Guidelines 3 Community Health and Safety (April 2007)
- IFC Performance Standard 2: Labour and Working Conditions (January 2012)
- IFC Performance Standard 5: Land Acquisition and Involuntary Resettlement (January 2012)
- ILO Convention providing for Equal Remuneration 1951 (C100)
- ILO Convention providing Right to Freedom of Association and Protection of Right to Organise 1948 (C87)
- ILO Right to Organise and Collective Bargaining Convention 1949 (C98)
- IPLOCA: 'Onshore Pipelines – The Road to Success' (2009 Draft), Section 6: 'Best Practice in Planning and Construction Techniques'. S.6 Best Practices in Planning and Construction Techniques.

16.3 Roles and Responsibilities

COMPANY has the ultimate responsibility for local recruitment and training standards during pipeline construction and in respect of the Project as a whole.

General responsibilities for environmental and social management are defined in the ESMMP. Responsibilities relating specifically to local recruitment and training are defined in this section.

16.3.1 Company

COMPANY shall be responsible for:

- Review and approval of CONTRACTOR's Local Recruitment and Training Implementation Plan

- Monitoring implementation of/adherence to the Local Recruitment and Training Management Plan through its existing ESMS and liaison with CONTRACTOR and district recruitment centres
- Representing the Project at community meetings
- Advising CONTRACTOR on the management of local recruitment and training issues within this Plan.

16.3.2 Contractor

CONTRACTOR shall be responsible for:

- Not making any commitments or any direct arrangements with local communities without prior coordination of such actions with COMPANY
- Development of local recruitment plan for COMPANY review and approval
- Maintaining records of recruitment and employment process
- Conducting local recruitment related meetings with community in coordination with COMPANY
- Deliver both induction and HSE training for employees.

16.4 Impact Avoidance and Mitigation

In order to enhance opportunities for local employment and to provide a suitably skilled workforce, CONTRACTOR shall implement appropriate measures which will involve a combination of:

- Developing and implementing an employment strategy
- Implementing a fair and transparent recruitment process
- Ensuring equal opportunities and worker welfare
- Planning and delivery of training.

The essential features of the above elements are outlined below, while specific details will be described in a Local Recruitment and Training Implementation Plan to be prepared by CONTRACTOR and approved by COMPANY prior to recruiting local labour.

16.4.1 Employment Strategy

The SCPX ESIA has committed to enhance local job opportunities. COMPANY shall agree targets for local employment with CONTRACTOR after the CONTRACT award.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

28-02	Unskilled labour will be preferentially recruited from the Project Affected Communities.
28-03	Applications for employment will only be considered if submitted via the official application procedure.
28-04	Targets for local recruitment from PACs will be agreed with the Contractor. These will be designed to meet legal requirements.
28-20	The Contractor will advise workers about risks of neglecting their land during recruitment process.
28-21	The Contractor will prepare a retrenchment plan, with the aim of reducing the impacts of cessation of employment contracts.
28-22	The Contractor will explain the temporary nature of jobs during the recruitment process and explain to workers the need to prepare for losing jobs and to manage their income wisely while employed.
28-23	The Project will give priority to people from the construction camp PACs for employment opportunities within the camp where suitably qualified (e.g. cook, housekeeper, etc).

As part of the tendering process, CONTRACTOR shall propose a transparent Employment Strategy that shall include:

- Proportion of professional and non-professional staff proposed for the CONTRACT
- How community expectations about employment opportunities are to be managed
- How CONTRACTOR shall recruit for local jobs (e.g. through local recruitment centres, the principles of fair and equitable recruitment policy and the rationale for employing foreign nationals.

Following award of CONTRACT, CONTRACTOR shall further develop requirements into the Local Recruitment and Training Implementation Plan (LRTIP). The plan shall include employment targets agreed with COMPANY.

CONTRACTOR'S LRTIP shall include measures to prevent worker in-migration through careful documentation of worker registration records (e.g. length of time at residence etc).

The CONTRACTOR shall use the principles contained within the IFC Good Practice Note No. 4: Managing Retrenchment, 2005 when developing the retrenchment plan.

16.4.2 Local Recruitment

The SCPX ESIA has committed to liaise with Project affected communities about job vacancies.

COMPANY shall undertake the following commitment:

28-08	Community Liaison Officers will monitor that PACs are given priority in recruitment and that recruitment is non-discriminatory in terms of PACs and ethnicity.

CONTRACTOR shall provide for COMPANY access for the purposes of monitoring the recruitment process.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

28-01	To help minimise the extent of in-migration, the Project's strategy on local recruitment will be disseminated publicly, including via media announcements at regional and national levels (as appropriate).
28-05	The Project will seek to manage employment expectations by explaining the number and type of opportunities in advance to local communities via the Community Liaison Officers.

CONTRACTOR'S Local Recruitment and Training Implementation Plan (LRTIP) shall address these issues, describing where vacancies will be advertised, how CONTRACTOR's CLOs will inform local communities about job opportunities, and how CONTRACTOR will provide employment information centres.

CONTRACTOR's LRTIP shall include recruitment procedures that are transparent, public and open to all. All workers will be treated fairly and equally, and will receive at least the minimum wage.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

28-06	Recruitment procedures will be transparent, public and non-discriminatory and open with respect to ethnicity, religion, sexuality, disability or gender.

28-07	Clear job descriptions will be provided in advance of recruitment and will explain the skills required for each post.
28-14	All workers will have contracts describing conditions of work and will have the contents explained to them.
28-15	As part of the recruitment programme community liaison teams will seek to manage any misconceptions about perceived differences in pay or conditions.
28-17	Job vacancies will be advertised in the PAC through appropriate and accessible media (consistent with employment targets).
33-02	All workers will receive at least the minimum wage as defined by Azerbaijan national law.

CONTRACTOR shall make workforce contracts available in their native language.

CONTRACTOR shall ensure that the recruitment procedures included in the LRTIP include the following:

- Openness and transparency, and that no prospective employee is asked to make payment or any other inducement to be employed
- CONTRACTOR shall keep COMPANY up-to-date regarding its future recruitment intentions
- CONTRACTOR shall provide information to local communities on the nature and levels of employment required for the CONTRACT
- CONTRACTOR shall maintain an employment office in the local area, and conduct all non-professional recruitment at the local area employment office
- CONTRACTOR shall include a generic job advertisement example in their LRTIP that shall set forth clear job descriptions stating the required skills, prior to placing the advertisements
- CONTRACTOR shall report to COMPANY on the process and outcomes of all recruitment, including the number of applications, the numbers accepted for interview and the numbers offered employment – identifying at each stage the numbers from the local area and the numbers from outside the local area
- When interviewing applicants, CONTRACTOR must ensure that questions asked of applicants are in no way discriminatory or personally intrusive
- For professional staff, CONTRACTOR shall at all times recruit the person who is most suited to the particular post, based on the applicant's abilities, qualification, experience and merit as measured against the job description and person specification
- CONTRACTOR and COMPANY shall develop local targets for unskilled labour
- CONTRACTOR shall maximise employment opportunities for people from Project affected communities and within 5 km around the camps and facility construction sites
- CONTRACTOR shall establish a grievance procedure for managing all community complaints related to the recruitment process, and will report monthly to COMPANY on the complaints received and on grievance resolution and redress.

CONTRACTOR's CLOs shall meet with communities (jointly with COMPANY CLOs) to explain that all employment for work on the Project will use fair and transparent recruitment procedures, favouring applications from the Project-affected communities, and will explain the procedures by which local people may apply for employment. CONTRACTOR shall implement the following location-specific commitment.

16.4.3 Provision of Training

The SCPX ESIA has committed to providing various types of training.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

6-11	Relevant construction personnel will be trained in use of spill kits and disposal practices.
19-06	Wildlife sensitivity to disturbance will be included in workforce training.
19-07	All drivers will undergo safety and environmental and social awareness training; driving performance will be assessed and monitored with additional training provided if necessary.
22-02	The workforce training will include advice on minimising energy consumption.
25-02	Driver training will include advice on behaviours to reduce the potential for disturbance, including use of horn, loud radios with windows open, switching engines off when not in use, strictly observing speed limits and not accelerating or braking aggressively.
27-11	Issues relating to archaeological awareness (such as ownership of finds, notification of finds and protection of archaeological sites) will be included in induction training.
28-09	When appropriate, on-the-job training will be provided to enable local employees gain new and/or improved skills while working on the Project.
28-10	The workforce training programme will include refresher and induction training to with the aim of ensuring that all recruits have the necessary understanding and knowledge levels for each job, in particular with regard to HSE issues.
28-11	Environmental and social issues will be included in workforce and visitor induction training.
28-13	Additional on-the-job informal training sessions and discussions will be provided as necessary during construction of the different SCPX component projects.
7-13	Relevant training will be provided to those with responsibilities for monitoring of effluent discharges and emissions, such as effluent sample taking and chain of custody.
7-14	Information will be incorporated into the Site induction process and will outline the role of personnel in the management of waste and emissions from site and spill response procedures.
7-15	Site induction training will be supplemented by regular 'toolbox' talks with relevant personnel if inspections or audits highlight failings in waste management.

Prior to commencing any site work, all CONTRACTOR personnel, including subcontractors and suppliers, should complete an HSSE induction training to ensure that the Project HS and ES expectations are met and should undertake any essential skills training to ensure competence and safe performance of duties, appropriate to the work being performed. Training should include general and task-specific training (i.e. that which is necessary for the performance of the duties to which the person is assigned).

CONTRACTOR's LRTIP shall develop training procedures, matrices and procedure for maintaining training records.

CONTRACTOR shall analyse training requirements and initiate a training programme to demonstrate that all persons employed, including subcontractors, are suitably qualified, competent and fit. This should include:

- The HSSE induction training programme to be delivered to all personnel in the workforce, vendor representatives and site visitors
- A specification of qualifications, competency and training requirements for key personnel
- A matrix of training requirements, covering general, task–specific and HSE-related training, showing the training frequency and interval between refresher courses
- Assessment and recording of training needs
- A system for assessing new hires e.g. previous training
- A means of confirming that the system is effective

- Timely delivery of training courses.

COMPANY may participate and/or lead in some training, as directed.

16.4.3.1 Induction training

Camp induction

The requirements for camp induction are given in Section 12.

Worksite HSSE induction

CONTRACTOR shall ensure that all CONTRACTOR and subcontractor personnel, regardless of position, receive HSSE induction training before being given access to any worksite, including training on environmental and social issues. Induction content shall be approved by COMPANY.

CONTRACTOR's HSSE training shall include information about location specific constraints and risks as identified in the ESIA.

Where directed, CONTRACTOR personnel shall attend COMPANY environmental and social inductions. CONTRACTOR shall conduct a competency assessment after each environmental and social training course to assess its effectiveness. Competency assessment records shall be maintained by CONTRACTOR.

CONTRACTOR shall develop a pocket-sized environmental and social induction booklet, which shall be subject to review by COMPANY, and issued to all personnel who attend the induction training and successfully complete the competency assessment.

16.4.3.2 Skills training

Prior to the commencement of the work, CONTRACTOR shall submit for review a detailed Training Programme which shall identify specific training requirements against each job title or occupation for environmental and social management. COMPANY will review the training plan for compliance within the first three months of CONTRACT commencement.

CONTRACTOR's skills training programme should maximise opportunities for country nationals to gain employment in skilled and unskilled roles during the construction of the Project.

CONTRACTOR's Training Programme shall include information about risks as identified in the ESIA, including:

- Briefing drivers on the importance of ensuring adherence to the requirements of the Community Health and Safety Plan
- Toolbox talks related to site-specific activities to be delivered by CONTRACTOR (e.g. spills, waste management etc.).

16.5 Verification and Monitoring

The monitoring and reporting activities that need to be conducted by the CONTRACTOR are specified as follows:

- COMPANY and CONTRACTOR shall develop Project-specific KPIs for employment of local and national workers and for training time and toolbox talks
- CONTRACTOR shall monitor and report on the recruitment process and numbers of local/national employees at different levels in a format agreed with COMPANY
- CONTRACTOR shall report to COMPANY on the process and outcomes of all recruitment, including the number of applications, the numbers accepted for

interview and the numbers offered employment – identifying at each stage the numbers from the local area and the numbers from outside the local area.

17 PROCUREMENT AND SUPPLY PLAN

17.1 Scope

The scope of this Management Plan relates specifically to the following procurement and supply chain management issues:

- Community liaison regarding procurement
- Procurement needs and supply chain.

17.2 HGA Standards and Practice

The guidance documents referenced in section 3.1 have been considered during the drafting of the impact assessment and Management Plans. Specific guidance is associated with a consideration of adverse impacts which may be associated with the supply chains, where low labour cost is a factor in the competitiveness of the item supplied In this case, projects enquire about child labour and forced labour and address such issues in the procurement and supply chain management strategy.

The specific guidance documents referred to are:

- IFC Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development (April 2007)
- WBG OP 11.0 Procurement (January 2011)
- IPLOCA: 'Onshore Pipelines – The Road to Success' (2009 Draft), Section 6: 'Best Practice in Planning and Construction Techniques'. S.6 Best Practices in Planning and Construction Techniques.

17.3 Roles and Responsibilities

Responsibilities of COMPANY and CONTRACTOR with regard to procurement and the supply chain are as defined in Section 3.

17.4 Impact Avoidance and Mitigation

17.4.1 Community Liaison

The SCPX ESIA has committed to work with communities to explain opportunities for provision of goods and services.

CONTRACTOR shall inform local businesses of opportunities to supply both construction-related services as well as services to other parts of the Project such as construction camps.

17.4.2 Procurement Needs and Supply Chain

The Project will have direct service opportunities for companies at the regional, and possibly national, level.

CONTRACTOR shall maximise the purchase of goods and services from within Azerbaijan, contingent on whether local suppliers can offer sufficient quality and reliability and can meet Project standards. The types of local contracts that are anticipated during construction and operation are shown below:

- Catering services to the office camp and construction sites
- Security services at the office camp and construction sites

- Provision of food supplies (indirectly through catering services)
- Supply of some construction equipment and materials, including timber, concrete and aggregate.

The SCPX ESIA has committed to maximise and monitor the purchase of goods and services from within Azerbaijan, and to pay for goods at the market rate and to implement measures that reduce the risk of in-migration. CONTRACTOR shall undertake the following commitment:

28-18	A Plan will be developed and implemented that will aim to discourage and prevent the workforce from purchasing goods from informal vendors to discourage vendors from establishing themselves at construction camp fence-lines in the hope of securing additional business. .
29-03	Taking into account relevant commercial considerations as appropriate, the project will seek to purchase goods and services from within Azerbaijan and will monitor such purchases.

CONTRACTOR's Supply Chain Management Implementation Plan shall address these issues and specifically identify goods and services that will be purchased locally.

CONTRACTOR shall source construction materials from local facilities wherever possible.

CONTRACTOR shall give preference to goods and services from local companies insofar as they are competitive in terms of price, delivery and quality of product. CONTRACTOR shall show a clear basis in favour of local suppliers when it comes to the acceptance or rejection of offers.

The SCPX ESIA has committed to consider environmental issues in the Project procurement process, according to the following commitments. CONTRACTOR and COMPANY shall undertake the following commitments:

1-02	Environmental considerations will be included in the project procurement process.

CONTRACTOR shall implement the following commitment:

1-10	Where excavated material is unsuitable for padding or backfilling, padding materials (e.g. sand or small-grained soils/gravel materials) will be bought or sourced from approved borrow pits.

CONTRACTOR's Supply Chain Management Implementation Plan shall state how it will promote sustainable procurement, and state the HSSE and employment factors that are to be taken into consideration when evaluating offers and procuring goods and services, including HSE inspection and audit of suppliers and their operations.

CONTRACTOR shall clearly describe in their contracts and selection processes the criteria to be considered when determining potential impacts of goods and services, for example:

- Biodegradability
- Energy and water efficiency
- Local production
- Maximum durability, repair-ability, reusability and recyclability
- Minimum packaging
- Minimum use of toxic chemicals, CFCs, ozone and other pollutants
- Use of recycled/re-used materials.

CONTRACTOR shall prohibit the workforce from purchasing goods from informal vendors who may establish themselves at the camp fence-line in the hope of securing additional business.

17.5 Verification and Monitoring

CONTRACTOR shall monitor the implementation on the measures in its Supply Chain Management Implementation Plan in accordance with the requirements of Section 20.

CONTRACTOR shall be responsible for managing and tracking its own actions.

CONTRACTOR shall be responsible for documenting the management of supply chains and procurement over time and for monitoring the success of the mitigation measures implemented under its Procurement and Supply Chain Implementation Plan.

CONTRACTOR shall carry out environmental and social audit inspections of the companies that supply good and services to the Project to ensure that all suppliers and service providers operate in line with national legislation.

18 CULTURAL HERITAGE MANAGEMENT PLAN

18.1 Scope

The scope of this Management Plan relates specifically to the following cultural heritage activities:

- Baseline review and reconnaissance resulting in re-routes to avoid heritage impacts
- Investigation of sites to assist in assessment and recommendations to reduce impact
- Mitigation measures such as excavation of sites where damage is unavoidable
- Construction-phase heritage protection activities, the archaeological component of this phase of the plan addresses the “chance finds” issue
- Study and reporting including publication of the results of the work.

18.2 HGA Standards and Practices

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Sec 3.1). Specific guidance considered is listed below.

- IFC Performance Standard 8: Cultural Heritage (January 2012)
- WBG OP 4.11 Physical Cultural Resources (July 2005, updated March 2007)
- IPLOCA: ‘Onshore Pipelines – The Road to Success’ (2009 Draft), Section 6: ‘Best Practice in Planning and Construction Techniques’. S.6 Best Practices in Planning and Construction Techniques

The IFCs Environmental and Social Performance Standard 8, on Cultural Heritage aims to preserve and protect cultural heritage from Project impacts and specifies methods as follows:

- Include cultural heritage concerns in the Project assessment process and management systems
- Integrate cultural heritage impacts (including intangible Cultural Heritage) into the Social and Environmental Assessment
- Include direct and indirect impacts and opportunities for enhancement to cultural heritage in the Assessment
- Consult with experts, government authorities, local communities, and indigenous peoples to identify cultural heritage resources
- Comply with National laws and any applicable treaties and conventions
- Design and site Projects to avoid cultural heritage
- Use internationally recognised practices for the protection, field-based study, and documentation of cultural heritage
- Develop and implement a Chance Finds Procedure for construction and operation
- Remove cultural heritage that cannot be avoided using the best available techniques.

18.3 National Legislation

The framework for national environmental legislation in Azerbaijan is provided by the Law on the Protection of the Environment (1999). The key national legislation that applies to cultural heritage is the Law on the Protection of Historical and Cultural Monuments (LPHCM) passed in 1998. The LPHCM specifies the responsibilities of state and local authorities, and lays down principles for the use, study, conservation, restoration, reconstruction, renovation and safety of monuments. It also requires that archaeological studies be conducted prior to construction works in areas with archaeological significance.

Article 3 of the Law of the Azerbaijan Republic on Culture states that all physical and legal entities in the Azerbaijan Republic are required to protect historical and cultural monuments. It also states that the rules for the protection of historical and cultural monuments are established by an appropriate law of the Azerbaijan Republic, which is the LPCHM.

18.4 Roles and Responsibilities

18.4.1 Ministry of Culture and Tourism (MOCT)

The Ministry of Culture and Tourism is a Governmental organisation that oversees all CH activities, responsible for the Cultural Heritage protection and curation of all protected monuments. The MOCT are responsible for approval of work and issuing excavation licences. This body has the opportunity to carry out assurance over cultural heritage activities on the Project.

18.4.2 Company

- COMPANY engineering design. Responsible for design of the Project and supply design parameters to the CH team and assist in design of an optimum route selection
- COMPANY Construction team. Responsible for construction activities, this includes implementation of mitigation designs and assisting with Chance Find procedures
- COMPANY Environmental and Social Team (ES). Responsible for overall Project Cultural Heritage Contract Management. Included in the team are the CHA and CHMs and other environmental consultants. Also responsible for notifications to the relevant authorities
- Cultural Heritage Adviser (CHA). Promoting compliance with the Cultural Heritage Protection Programme as outlined in Management Plans, protocols, and procedures for Project activities. Managing Cultural Heritage Monitors and experts. Responsible for obtaining the excavation license, administration of various contracts, design of mitigation programme and coordination of Project and external interests. Coordinate, schedule, CONTRACT, develop SOW and supervise CULTURAL HERITAGE CONTRACTORs' works. Support Project to provide appropriate, documented reports and/or permits that allow Project to proceed; develop comprehensive reports with possible impacts, their mitigation measures and Management Plans upon Project's request
- Cultural Heritage Monitors (CHM). Responsible for regular monitoring and implementing of all CH procedures and programmes assigned for the areas associated to the pipelines and their facilities and maintaining an up-to-date record of daily monitoring activities and any special reports prepared.
- The CHM is appointed for a range of field activities that include: monitor ground disturbing construction activities that could reveal previously unidentified archaeological resources (e.g. topsoil stripping, trenching etc); provide an initial review of the significance of chance finds and prepare daily reports of negative and positive findings resulting from the monitoring; monitor construction activity in compliance with Above-ground Monuments protection procedures conformances and issues warnings against CONTRACTOR as required for non-compliance with CONTRACT conditions; provide guidance on request regarding specific / localised

routing issues; deliver tool box talks to Project's team on specific heritage issues, and assist in preparation specialised instruction and guidance materials related to Project cultural heritage issues; assist in preparation, placement, and maintenance of appropriate warning signage and fencing to protect archaeological resources and historic monuments. Instruct CONTRACTOR in the way forward with respect to Chance Finds.

18.4.3 Cultural Heritage Contractor

Organisation contracted by COMPANY to be responsible for:

- Directing and providing expertise to archaeological excavations and recording, study and reporting of the materials discovered during pre-construction and construction phases and provide daily reports;
- Make recommendations via the COMPANY site supervisor and/or COMPANY Field Environmental Advisor that may assist in achieving objectives of CHMP;
- Provide instruction to other Project field personnel in recognising and acting on cultural heritage issues;

18.4.4 Contractor

CONTRACTOR shall:

- Interface with CULTURAL HERITAGE CONTRACTOR to prevent damage and promote preservation of cultural heritage objects / sites
- Suspend activity if Chance Find is suspected and communicate to CULTURAL HERITAGE CONTRACTOR
- Cooperate with CULTURAL HERITAGE CONTACTOR and/or COMPANY on Chance Finds
- Provide site supervision including H&S, labour, tools, equipment (including mechanical excavator as required by COMPANY), facilities and attendances
- Provide and install any identified measures such as bog mats over archaeological sensitive areas, demarcation of cultural heritage sites to be avoided, or other measures to assist the archaeological programme. This will be in areas to be determined by COMPANY
- Reporting of Chance finds and against KPIs
- Any work outside the identified easement is subject to Cultural Heritage survey as part of the Land Management Plan.

A simplified management structure and responsibilities are illustrated in the figure below:

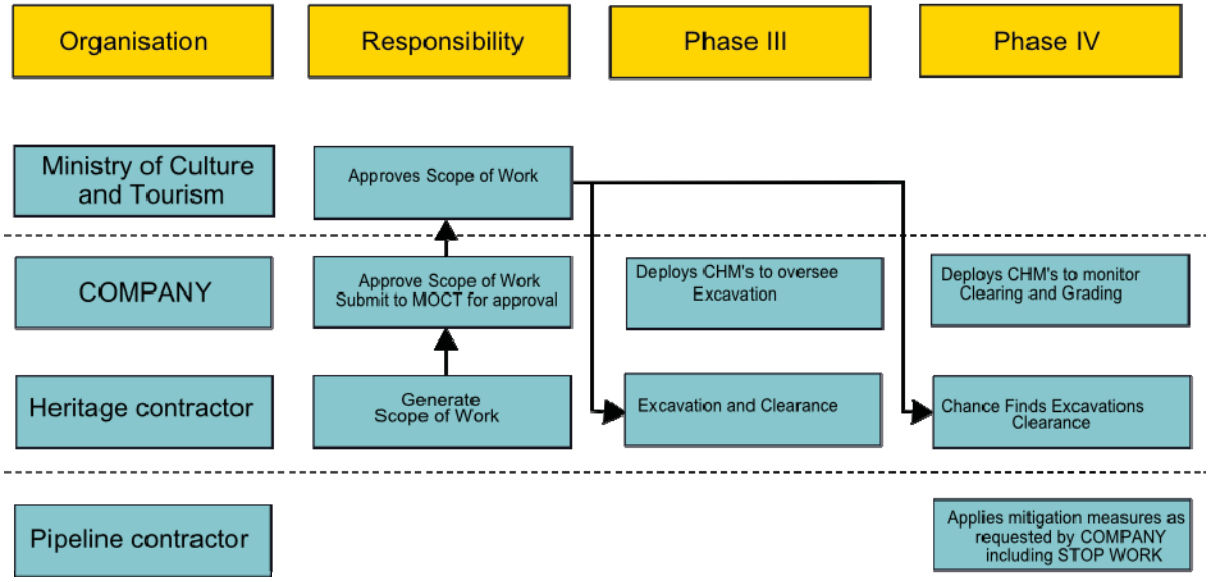


Figure 18-1: Flow Chart for Cultural Heritage Management

18.5 Impact Avoidance and Mitigation

18.5.1 Pre-construction Commitment

The following commitments have been made in the SCPX Project ESIA and shall be addressed by COMPANY, CONTRACTOR and CULTURAL HERITAGE CONTRACTOR in their Cultural Heritage Implementation Plans, as applicable.

18.5.2 Commitments

Pipeline, Facilities and Access Roads:
COMPANY and CULTURAL HERITAGE CONTRACTOR shall implement the following commitments:

27-01	A Cultural Heritage Management Plan will be implemented that includes the five-phase strategy for the progressive assessment and mitigation of the effects of construction.
27-02	Areas of potential cultural heritage impact will be examined and any necessary excavations conducted prior to construction.
25-13	Vibration sensitive locations will be determined by the Contractor and listed in their Pollution Prevention Implementation Plan, together with details for monitoring vibration before and during movement of heavy equipment. Further actions will depend on the outcome of vibration monitoring.
27-03	Archaeological sites identified during construction will be archaeologically recorded.
27-04	Pre-construction works to evaluate and record known archaeological sites will be agreed with the Ministry of Culture.
27-05	A programme of archaeological surveillance (watching brief) will be implemented during topsoil stripping of the ROW, the facility sites, construction camps and equipment lay-down areas and ancillary areas, and ROW trenching. The Company will be empowered to temporarily stop works, pending archaeological examination, if artefacts are seen
27-06	If archaeological artefacts or structures are found, archaeological advice will be sought from Azerbaijan Academy of Science, Archaeology and Ethnography Institute and the Ministry of Culture, and the Chance Finds Procedure followed
27-07	The archaeologist conducting the watching brief will advise on procedures to be followed by the construction supervisor in line with the Chance Finds Procedure.

27-08	The Company will consider making minor adjustments to the route of the pipeline where this will avoid damage to a cultural heritage feature that is discovered during construction operations.
27-09	If the pipeline route cannot easily be adjusted to avoid damaging the feature, construction activities will be suspended at the site until the excavation and recording required by the authorities has been carried out.
27-10	Known archaeological sites within 50m of the pipe centreline or other construction activity will be demarcated throughout construction.

CONTRACTOR shall implement the following commitments:

27-11	Issues relating to archaeological awareness (such as ownership of finds, notification of finds and protection of archaeological sites) will be included in induction training.
27-13	Any ripping or other ground disturbance activities required during reinstatement will be planned to avoid archaeological evidence that has been preserved in-situ.
D5-045	Existing third-party services and sensitive receptors that need to be avoided during construction (e.g. cultural heritage sites, or specific trees that are to be retained) will be marked.

CONTRACTOR with the assistance of the COMPANY for identifying sites will mark all heritage sites within 50m of the pipeline or other new or modified access roads prior to construction. CONTRACTOR shall install sufficient protection measures to avoid any damage to sites during construction e.g. fencing, barriers and/or signage.

There are currently 44 known sites which may require protection measures due to proximity to the pipeline and access roads. An updated list of sites with KPs will be provided pre-construction.

The COMPANY and CULTURAL HERITAGE CONTRACTOR will implement the following location- specific commitments (with CONTRACTOR assistance):

X10-14 KP288	If normal access to the cemetery in Dallyar Dashbulak village is would be impacted by Project activities, an alternative footpath for local residents will be provided. The ROW will also be designed so that the shelter outside the cemetery is avoided.
X10-15 Samukh Camp Option 3	The memorial public water fountain (bulag) of recent origin will be excluded from the fenced area of the camp. There will be a buffer zone agreed with the appropriate stakeholder representative between the building and the camp boundary fence. Access will be kept open to the structure. Project will communicate with the stakeholder representative to understand concerns and institute appropriate monitoring as required.

18.5.3 Evaluation Overview

The phased approach to the management of CH features on the Project allow for the progressive identification of sites and any impact during the design and construction of the Project. The 5 phases are as follows:

Phase 1 – Review Existing Data – Areas of potential archaeological interest are identified by various desk based activities such as scientific literature review, documentary searches for previous archaeological work and examination of aerial and satellite images. The route of the pipeline and facilities locations is examined on the ground in a rapid walkover survey to verify the route facilities and proposed access road locations.

Phase 2 – Extensive and Intensive Surveys – The route of the pipeline and facilities locations is examined on the ground to assist in the determination of potential impact and to define the parameters of the further investigation. Areas of potential lying within the pipeline construction corridor (50m) or which may be impacted by permanent or temporary facilities

(such as access roads and construction camps) are examined to determine their nature and significance. This can be by various means including detailed survey, geophysical survey and trial trenching. The information is used to assist in the detailed design of the pipeline route and facilities and where possible, the route can be changed or its impact reduced to minimise the damage to cultural heritage features. Phase 2 archaeological work (trial trenching) will involve subsurface investigations of archaeological sites identified by the baseline research to be the most significant sites identified within the present route and at other Project facilities sites. Potentially significant sites have been avoided by the pipeline routes, some of which were done specifically to avoid the known archaeological sites.

Phase 3 – Pre-Construction Excavations – In areas where damage to the resource is unavoidable, archaeological deposits are recorded by "planned" excavation prior to construction activities. Phase 3 work will be carried out at those sites found by Phase II investigations to contain significant remains. Phase 3 investigations involve the level of work known as "archaeological data recovery", in which cultural values are recovered from the sites in the form of data and artefacts. Phase 3 investigation of a site results in a scientific report accompanied by artefacts prepared for museum curation. Phase 3 work therefore mitigates impacts to such archaeological sites. An alternative mitigation measure is site avoidance by rerouting of the pipeline route. Mitigation by avoidance, however, could require investigations outside of the Project right-of-way to determine site boundaries, since Phase 2 work focuses on those site areas that lie within the construction area.

Phase 4 – Chance Finds during Construction – It is recognised that construction of a pipeline and associated permanent and temporary facilities may reveal previously unknown archaeological features. Arrangements are made for the monitoring of construction and provision of a team of archaeologists to conduct 'rescue/salvage excavations' where required. This is also known as the 'Chance Finds' process.

Phase 5 - Reporting – Study of material and preparation of reports on the archaeological works carried out during the Project. This phase includes the dissemination of the results of the work both to the archaeological establishment and to the wider public via an appropriate medium.

The following sections describe Phases 3, 4 and 5 in more detail.

18.5.4 Phase 3 - Pre-Construction Excavations

Several techniques can be used to protect archaeological sites, or minimise damage. These are typically reductions in the impact of a standard construction easement and consist of:

- Reduction in the working width, which is particularly useful in cases where there are above ground features adjacent to the pipeline easement that can be protected from damage
- Construction of a temporary road composed of bog mats. The un-stripped topsoil acts as a cushion to prevent transmission of the weight of machinery directly on to archaeological deposits. In this instance, the width of the trench line is excavated in advance by an archaeological team. The technique relies upon minimising passage of equipment over the road and cannot be used in areas where the soil structure is too weak or wet, to maintain its physical structure
- Passing under the archaeological feature by horizontal directional drilling or other tunnelling techniques.

18.5.4.1 Archaeological field evaluation

This work will be carried out on potential archaeological sites as required.

In addition, this procedure will be undertaken on chance finds of archaeological sites encountered during topsoil stripping in the construction period. This will be carried out by representatives from MOCT prior to full-scale excavation of the site.

An archaeological field evaluation will determine, as far as is reasonably possible, the nature of the archaeological resource within a specified area using appropriate methods and practices.

The definition of an archaeological field evaluation is 'a limited programmed of non-intrusive and/or intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site. If such archaeological remains are present field evaluation defines their character, extent, quality and preservation, and enables an assessment of their worth in a local, regional, national or international context as appropriate' (IFA, 1994).

The purpose of a field evaluation is to gain information about the archaeological resource within a given area or site (including presence or absence, character, extent, date, integrity, state of preservation and quality) in order to make an assessment of its merit in the appropriate context, leading to the formulation of a strategy to ensure the recording, preservation or management of the resource (IFA, 1994).

The CH Team will only undertake a field evaluation once a specification has been produced (see Box below), and has been agreed by the CHA.

Project Specifications
The Cultural Heritage Contractor will provide and discuss with the CHA a Project-proposal prior to the commencement of each archaeological excavation.

The specification will be presented in advance of archaeological excavations commencing to allow time for amendments to be made if required.

The specification or Project design will contain, as a minimum, the following elements:

- Non-technical summary
- site location (including map) and descriptions
- context of the project
- geological and topographical background
- archaeological and historical background
- general and specific aims of the fieldwork
- reference to relevant legislation
- recording systems and data management systems
- field methodology
- collection and disposal strategy for artefacts and ecofacts
- arrangements for immediate conservation of artefacts
- post-fieldwork methodology
- report preparation method
- publication and dissemination options/proposals
- copyright
- archive deposition
- timetable
- staffing
- health and safety considerations
- contingency arrangements.

(IFA 1994)

The CH Team will ensure that the field evaluation is not intrusive and not destructive to archaeological remains in both the design stage and in the execution of the work.

The results of the field evaluation will be presented to the CHA and to the MOCT in a suitable time frame so that a decision can be reached about the requirement for additional archaeological fieldwork or otherwise.

18.5.4.2 Archaeological excavation

An archaeological excavation will examine and record the archaeological resource within a specified area of the pipeline corridor using appropriate methods and practices. These will satisfy the stated aims of the Project. It will result in one or more published accounts and an ordered, accessible archive.

An archaeological excavation is defined as 'a programme of controlled, intrusive fieldwork with defined research objectives, which examine, records and interprets archaeological deposits, features and structures, and, as appropriate, retrieves artefacts, ecofacts and other remains within a specified area or site. The records made and objects gathered during fieldwork are studied and the results of that study published in detail appropriate to the Project design' (IFA, 1994).

If required, an excavation may be supplemented by non-destructive means of investigation, such as:

- Geophysical survey
- Remote sensing
- Geochemical survey
- Earthwork survey
- Field scanning (otherwise known as field walking) to observe and map artefact distributions
- Standing building survey.

All archaeological excavations will be implemented by the CULTURAL HERITAGE CONTRACTOR and conducted to Project standards.

The specification and/or Project design must be agreed with the CHA and approved by the MOCT. All work must conform to the agreed specification or Project design. Any variations must be agreed to in writing by all the relevant parties.

Sufficient and appropriate resources will be used in order for the Project to be completed successfully, within the timetable, to an acceptable standard, and comply with all statutory requirements.

All staff must be suitably qualified and experienced for their Project roles.

A number of techniques are available for archaeological excavation. Several techniques may be valid, under the terms of the brief/Project outline, and the CONTRACTOR will explain the criteria for selection. The methods selected must be fit for the defined purpose. When the use of machinery is specified this must be under the direct supervision of an archaeologist.

Full and proper records (written, graphic, electronic and photographic as appropriate) will be made for all work, using pro-forma records and sheets appropriate to the work.

The recording system used will be one that appropriate to the requirements of the Project, and will be agreed with relevant parties including the body that is to receive the archive.

Following completion of the on-site excavation a post-excavation assessment report will be produced.

18.5.4.3 Post-excavation reports

A Preliminary post-excavation report submitted by the Head of Archaeological Expedition will reflect the completed work, main recommendations and findings, allowing COMPANY to plan a construction design. This Preliminary report needs to be submitted in seven (7) days after the excavation is complete.

A Comprehensive Technical Report will be produced by the CULTURAL HERITAGE CONTRACTOR within a reasonable time limit (for example 6 months) following completion of the on-site excavation. It will be submitted to the CHA for approval.

Post-excavation Assessment Report:

1. Introduction
   - 1.1 Scope of the Project;
   - 1.2 Circumstances and dates of fieldwork and previous work;
   - 1.3 Comments on the organisation of the report.
2. Original Research Aims.
3. Summary of the documented history of the site(s).
4. Interim statement on the results of fieldwork.
5. Summary of the site archive and work carried out for assessment:
   - 5.1 Site records: quantity, work done on records during post-excavation assessment.
   - 5.2 Finds: factual summary of material and records, quantity, range, variety, preservation, work done during post-excavation assessment.
   - 5.3 Environmental material: factual summary of human and animal bone, shell and each type of sample, quantity, range, variety, preservation, work done on the material during post-excavation assessment.
   - 5.4 Documentary records: list of relevant sources discovered, quantity, variety, intensity of study of sources during post-excavation assessment.
6. Potential of the data:
7. A discursive appraisal of the extent to which the site archive might enable the data to meet the research aims of the Project. Different classes of data will be discussed in an integrated fashion, sub-divided according to the research aims of the Project.
8. A statement of the potential of the data in developing new research aims to contribute to other projects and to advance methodologies.
9. A summary of the potential of the data in terms of local, regional, national and international importance.

Additional information will normally include:

- Supporting illustrations at appropriate scales
- Sufficient supporting data, tabulated or in appendices, and/or details of the contents of the Project archive, to permit the interrogation of the stated conclusions
- Index, references and disclaimers
- The Post-Excavation Preliminary report will enable an updated Project Design to be produced, following approval of the Post Excavation Report by the CHA.

In the event that an excavation is to be continued, and updated Project design specification will be required. This will include the following sections:

Updated Project Design Specification

1. Background
   - 1.1 A summary of the original objectives of the Project, as expressed in the original Project design
   - 1.2 A summary of the results of the Project to data
2. Summary statement of potential
   - 2.1 Material of critical importance for interpreting the site
3. Aims and Objective
4. Post excavation research design
5. Publication and Presentation
   - 5.1 A publication synopsis will be prepared, giving the proposed format, structure and content of the published report
   - 5.2 Those aspects of a site, which could support a more popular treatment, will be identified
6. Method Statement
7. Resources and programming
   - 7.1 Staffing and equipment
   - 7.2 Timetable
   - 7.3 Budget

A research archive will then be produced.

18.5.4.4 Research archive specification

The research archive will contain the following:

Catalogues and other records

The research archive will be derived from the work done during the analysis phase and will comprise stratigraphical/structural, artefact, environmental, and other catalogues and all other records as well as details of the methods and selection strategies used in each case.

The **Research Archive** will contain some or all of the following elements:

- context information
- photographic catalogue
- photographs
- stratigraphic drawings
- object catalogues and details of where objects are located
- object drawings
- x-ray catalogue
- conservation records
- sample catalogue
- human bone catalogues
- animal bone catalogues.

Analytical reports

The report text will be derived from the above material, and will form the basic text from which the final publication will be prepared, comprising:

- Site narrative: an interpretative structural and stratigraphic history of the site, illustrated by maps, plans, elevations and Annexes
- Artefact reports: the full text, accompanying data and illustrations, relating to those artefacts selected for analysis
- Environmental reports: the full text, accompanying data and illustrations relating to environmental data selected for analysis. (English Heritage, 1991).

Finally, a published report shall be produced. Please see Section 5.4 ‘Publication and Dissemination of Results’ for guidelines and standards regarding publication.

18.5.4.5 Movable cultural and natural assets

Movable cultural and natural assets are hereafter known as artefacts and ecofacts.

Statement of intent

The collection, documentation, conservation and research of artefacts and ecofacts will result in an ordered, stable, accessible archive, using appropriate methods and practices. This process is known as ‘finds work’. Finds work will result in report(s) intended for dissemination. The methods and practices employed must satisfy the stated aims of the overall Project.

Introduction

The importance of finds work cannot be overstated, as it contributes to the formulation of conservation, preservation, collection, dispersal, presentation, education and management strategies; and also local regional, national and international research frameworks and policies.

Finds work therefore needs to be fully integrated into all stages of the archaeological process, from the earliest stage in Project planning.

Standards: Project specification and design

Finds work (which can encompass some or all of the activities of recovery, assessment of data, analysis, interpretation, publication, conservation, archiving and storage), will be identified and costed. A Project design will be written, setting out a schedule of works in sufficient detail for the work undertaken to be quantifiable, implemented and monitored.

A recovery policy for archaeological heritage material outlining aims and methods will be written for submission as part of the fieldwork Project design and specification. This will reflect the number and type of material expected, excavation methods, sampling strategies, finds retention, the nature of soil deposits and the achievement of the Project research aims.

Finds collection and discard policies, strategies and techniques will be fit for the defined purpose.

The programme of work will result in a stable archive. The specification or Project design will identify relevant data standards for records organisation and content that will be used in information recording systems employed by the Project. These data standards will be compatible with those of all archaeological work teams involved in mitigation on the pipeline corridor.

The Project design will address assignment of ownership or archaeological material and requirements for the deposition of the archive with a recipient museum or repository.

Fieldwork

All finds and samples will be collected, processed, sorted, quantified, recorded, labelled, packed and sorted according to the Project design. In that respect authorised personnel or experts from the MOCT shall be informed regarding the excavation inventory.

Post-excavation assessment

After processing (which includes conservation, recording and marking) the finds assemblage will be assessed to give an overview of its potential to meet the research aims of the Project. This assessment will include the following steps:

- Quantification of the assemblage by material and assessment of their condition
- Statement of their provenance, including how retrieved (hand excavated, metal detected, within soil sample) and contextual integrity
- Provision of identification and date range of the assemblages
- Identification of both the extent to which the assemblages can contribute to each of the Project's stated aims and any new aims which may be addressed
- Statement of the value of the archaeological material for research and/or educational use beyond the terms of the Project will also be recorded.

Recommendations for the extent of further analysis of all or selected components of the finds assemblage will contribute to the up-dated Project design:

Post-excavation Project design

The updated Project design will include a task list indicating duration and cost of each task including archive preparation and deposition and the intended scope and nature of dissemination.

Publication and dissemination

Publication rights of scientists or of committees of scientists that worked or are still working, under the permission of the MOCT, on the route of the pipeline, are reserved. The publication format will conform to the Project design. The final report will specify where every component of the archive is deposited, and the existence and location of unpublished documentation, if known, will be indicated.

Monitoring

Chance finds work will be included in the overall Project monitoring process.

Archives, ownership and deposition

The requirements for archive preparation and deposition will be addressed at the outset of the Project.

All movable cultural and natural assets revealed in excavations are to be transferred to the relevant Governmental organisation nominated by the MOCT at the end of the excavations. According to the Protocol/Agreement, COMPANY shall provide all items (including security of the cultural asset and storage facility) needed by the CULTURAL HERITAGE CONTRACTOR during the excavation period for rescue and protection of the cultural asset.

The proposed recipient museum or other approved repository will be contacted at the Project planning stage and arrangements for the deposition of the material archive will be detailed in the specification and/or Project design (IFA, 2001).

18.5.5 Phase 4 - Chance Find Excavations

A draft chance finds reporting and response protocol is presented in this section. The plan is based on previous pipeline experience and will be subject to review and update based on needs of the Project and its general field work organisation and reporting structure.

18.5.5.1 Chance finds framework

Topsoil stripping and trenching will be implemented under CH monitoring that will be conducted by the CHMs, so that archaeological features can be observed and archaeological mitigation strategies can be implemented.

The CH team will monitor topsoil stripping to plan any necessary excavation of archaeological chance finds, while topsoil stripping continues to be monitored further along the pipeline route. The function of the CH monitoring process will be as follows:

- Provide advice to define the areas where the construction activities may continue or shall be stopped
- To record archaeological features observed on, and close to the existing pipeline
- To record archaeological features discovered during pipeline construction activities
- To provide advice in the form of a 'preliminary assessment' to the construction superintendent on the significance and implications of new archaeological discoveries on the pipeline route.

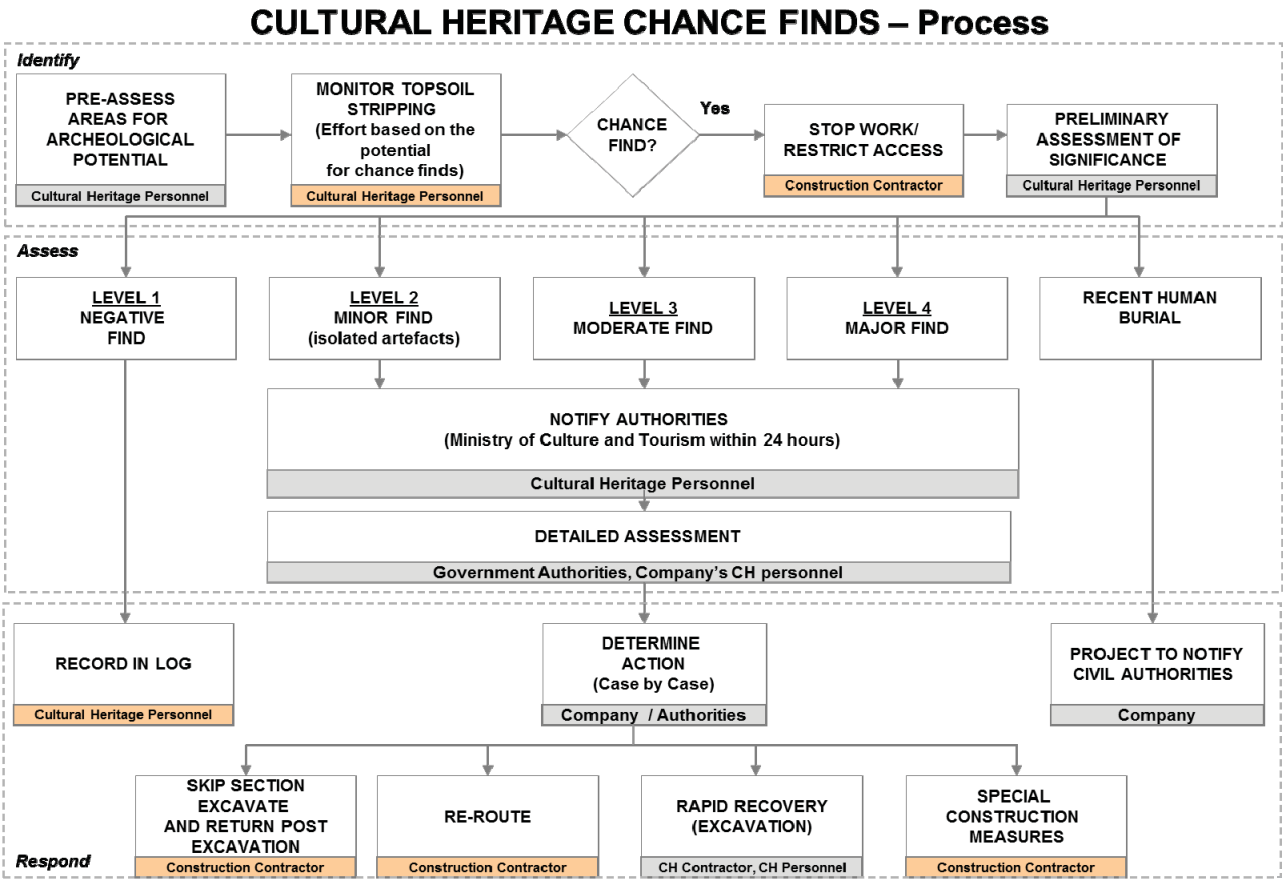


Figure 18-2: Cultural Heritage Chance Finds Framework

Example guidance to be followed in the event of a new archaeological discovery or 'Chance Find' is given in the following sections.

Archaeological discoveries of minor significance

This type of archaeological discovery would be of fairly small size, such as an isolated feature or find-spot. It is anticipated that the CH Monitor should be able to adequately record the feature unassisted in the Daily Reports.

The discovery will be reported to COMPANY Construction Representative in the field and CHA immediately. The construction activities can be suspended at the site while the finding will be discussed with the CHA. Arrangements should be made to demarcate the archaeological deposits from construction vehicles to prevent damage.

Archaeological discoveries of moderate significance

This type of archaeological discovery would be of small to medium size, such as a small group of features or a single burial. The CH Monitor will record the discoveries. The discovery will be reported to COMPANY Construction Representative in the field and CHA immediately. The construction activities will be suspended at the site while the finding will be discussed with the CHA. Arrangements should be made to demarcate the archaeological deposits from construction vehicles to prevent damage.

The preliminary assessment of the finding will be performed by the CH Monitor. After the join assessment with CHA the MOCT will be notified about this. The MOCT will provide a rapid recommendation on the mitigation measures that can be the archaeological excavations implemented by CULTURAL HERITAGE CONTRACTOR, or other methods of site protection.

Archaeological discoveries of major significance

This type of archaeological discovery would have fairly major significance such as a settlement site or group of burials. The archaeological features would cover the working width of the pipeline easement such that construction vehicles and equipment would not be able to pass down the right of way without causing damage to the archaeological deposits. The excavation and recording of these deposits may take a considerable period of time and cause some disruption to construction activities, which may need to find an alternative right of way in the vicinity of the site.

Thus, the two possible scenarios to be considered are whether the find:

- Requires the pipeline to be re-routed; or
- Needs to be fully excavated

The resulting excavation and recording will be completed within a finite period of time, thus enabling back-end crews to complete the pipeline construction using the same centre line.

In order to assist in the decision making process, further archaeological evaluation of the site may be required to assess the extent and nature of the find.

The decision will be made following consultation with the CH Team, the MOCT, and COMPANY Construction team.

COMPANY will agree procedures for dealing with excavations arising from archaeological finds of major significance encountered during the construction period will be agreed in the Management Plan/Agreement/Protocol with the MOCT.

Finds requiring notification to the civil authorities

It is not uncommon for evidence of various human activities to be uncovered during earthmoving. In the majority of cases, these can be seen to have a convincing historic or earlier, origin and represent no threat or interest to the well-being of the contemporary society. However there are several types of discoveries that are of concern and need to be reported to the Civil Authorities.

These can include:

- Human burials
- Munitions or unexploded ordnance (UXO)
- Animal disease burial pits.

The last two items have their own response procedures within construction Management Plans, but it is quite possible that staff on the construction team may make the initial discovery, and need to be aware of the correct procedures on discovery. Part of their training will include the first actions to be taken in the event of such discoveries.

Human remains are a different case, in that historic human burials can be mistaken for recent, unmarked burial sites. In such instances, the appropriate action is to leave the site undisturbed and protected and report to the Civil Authorities for their investigation. Where the CH Team or CULTURAL HERITAGE CONTRACTOR is convinced of the ancient origin of such remains, it is a legal requirement to report such discoveries and the professional view of their age to the local authority.

Identified individuals and contact details

To be completed when available.

18.5.6 Phase 5 - Publication and Dissemination of Results

Following the completion of all archaeological excavations and construction activities, the COMPANY will prepare a Comprehensive Technical report on the results of fieldwork. This will include the dissemination of the results of the work both to the archaeological establishment and to the wider public via an appropriate medium.

18.5.6.1 Introduction

It is a generally agreed principle that the results of destructive fieldwork shall be disseminated and the Project archive shall be deposited in an accessible public archive (ACAO, 1993) and (English Heritage, 1991). Information that does not enter the public domain is effectively lost.

Knowledge of past work is one major input to decisions regarding the further investigation of a particular area, and when planning projects of all types. The failure of such information to enter the public domain therefore damages the quality of decisions and the archaeological record, and is an absolute loss to archaeologists and to society for whose benefit resources have been spent (IFA 1994).

Therefore, the CH Team and CHA involved in archaeological mitigation strategies on the pipeline Project have a duty to disseminate the information obtained from these strategies in forms which are accessible to both to the specialist archaeological community and also the wider public.

Standards for production of specialist academic publications based on the results of fieldwork are set out below.

Additionally, the CHA will actively promote the dissemination of knowledge about archaeological discoveries on the pipeline route, particularly at a local level.

In addition to the knowledge dissemination aspect of reporting, this element of the work will also report on the effectiveness of the mitigation and management measures adopted so that lessons, if any, can be learned and applied elsewhere on the pipeline route and in other projects.

18.5.6.2 Legislative framework

This is an overview of the legislative framework under which the publication and dissemination of results procedure for the project must operate, and not a comprehensive statement of law. Other legislation may apply at national, regional and local levels.

Scientific reports about the excavations, borings and researches made on behalf of the MOCT are prepared by the head of the excavation for publication.

Article 7 of the European Convention on the Protection of the Archaeological Heritage (The Valetta Convention) states that "for the purpose of facilitating the study of, and dissemination of knowledge about, archaeological discoveries, each Party undertakes to take all practical measures to ensure the drafting, following archaeological operations, of a publishable scientific summary record before the necessary comprehensive publication of specialised studies".

Article 9 of the Valetta Convention states that:
“Each Party undertakes:

- to conduct educational actions with a view to rousing and developing an awareness in public opinion of the value of the archaeological heritage for understanding the past and of the threats to this heritage
- to promote public access to important elements of its archaeological heritage, especially sites, and encourage the display to the public of suitable selections of archaeological objects.”

Article 5 of the World Heritage Convention states that:
“Each party will undertake

- to adopt a general policy which aims to give the cultural and natural heritage a function in the life of the community; and
- to take the appropriate legal, scientific, technical, administrative and financial measures necessary for the identification, protection, conservation, presentation and rehabilitation of this heritage.”

Standards and minimum requirements

The published report will contain the following information:

- The research objectives as expressed in the Project design and the updated Project design where applicable
- Circumstances and organisation of the work and the date at which it was undertaken
- Identity of the individual/organisation by which the work was undertaken
- Summary account of the results of the Project
- Summary of the contents of the Project archive, where it is housed, and how it may be consulted
- The grid reference of the site of fieldwork (suitably abbreviated if publication of the exact site location is not in the general interest or if it is necessary to restrict public access).

Report writing criteria

When writing up the results of a Project consideration will be given to the following:

- The report will appropriately reflect the importance of the results of the Project, and deal adequately with the site's social, political and historical context
- The interpretation of the site will be justified by the evidence presented. Ambiguities in the database will be discussed, and where more than one interpretation is possible the alternatives will be presented
- The report will present information about what was found in a well-balanced logical, accessible and structured way. It will be immediately intelligible to and usable by those who know nothing about the site
- The extent to which the objectives of the Project have been fulfilled will be discussed, including a critical assessment of the methodologies employed and the lessons learned in terms of the effectiveness of mitigation and management actions in protecting archaeological resources
- The report will be written clearly and concisely, and will make appropriate, consistent and economical use of other methods of data presentation, for example tables, plans or photographs

- Specialist reports and their supporting data will be carefully chosen and given their proper value. Specialist contributors must be involved in or informed of editorial decisions affecting the presentation of their work in print
- All the constituent parts will cross-refer adequately
- Attention will be drawn to areas of future study potential that it has not been possible to explore fully within the limits of the agreed Project design
  (English Heritage, 1991).

Once the text has been completed for publication by the CULTURAL HERITAGE CONTRACTOR it will be sent to the CHA for approval. All outputs from CULTURAL HERITAGE CONTRACTOR will be approved by the CHA prior to dissemination.

Consideration will be given to publicising the results of archaeological fieldwork on the pipeline Project through a range of media from conventional archaeological publication to, for example, display panels, exhibitions and lectures, open days and school visits, radio and television programmes, videos and popular publications and the internet (IFA, 1994).

18.5.7 Transition to Operations

During the operation phase the Project will plan work to avoid damaging cultural heritage sites as far as practical and will continue to have a Chance Finds Procedure in place. Potential impacts to cultural heritage sites will be considered in association with any upgrades, repairs, maintenance, new builds, and/or decommissioning. A specific training program and Chance Finds Procedure will be developed for the Operations phase of the Project in the future.

18.5.8 Capacity Building

Implementing the CHMP requires significant Agency and CULTURAL HERITAGE CONTRACTOR input, collaboration, effort, time, and resources. Project requirements may at times exceed the normal operating capacity of these institutions. The SCPX Project is committed to building capacity in the short term by funding personnel, and the purchase of necessary supplies and equipment, and provision of transport, security, and health and welfare facilities to execute Project work. As the Project progresses, COMPANY will consider the need for additional longer term capacity building measures. These may include technical workshops, training programs, analytical equipment, and/or facility im provements. Any capacity building measures will be agreed between Agency,CONTRACTOR and COMPANY (as appropriate) and will be applicable to the SCPX project and future works carried out by the institutions.

18.6 Verification and Monitoring

18.6.1 Monitoring

18.6.1.1 Cultural Heritage Monitors

All ground disturbance works during construction on the pipeline corridor and other areas related to the pipeline's facilities will be monitored by Cultural Heritage Monitors (CHM) appointed by COMPANY.

This is defined as 'a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons. This will be within a specified area or site where there is a possibility that archaeological deposits may be disturbed or destroyed'. The CHM will compile a report and ordered archive (IFA, 1994)

The purpose of the CHM is:

- To allow, within the resources available, the preservation by record of archaeological deposits, the presence and nature of which could not be established (or established with sufficient accuracy) in advance of development

- To provide an opportunity, if needed, for the CHM to signal to all interested parties, before the destruction of the material in question, that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard.

The CHM is not intended to reduce the requirement for excavation or preservation of known or inferred deposits, and it is intended to guide, not replace, any requirement for contingent excavation or preservation of possible deposits.

Right-of-way preparation, the construction process prior to pipe-trench excavation, typically leads to discovery of additional archaeological resources that were not identified during the Phase 1 and 2 studies. To address this situation systematically, CHMs will be present with right-of-way clearance (i.e. clearing, topsoil stripping, grading, etc.) and trenching teams throughout the construction process. Their purpose will be to assist with the initial evaluation of archaeological chances find, helping to distinguish archaeological finds from non-archaeological anomalies and to communicate initial data on such findings to appropriate Project personnel.

The time available to evaluate and address potential chance finds will depend on the spatial gap maintained between the progress of the clearing crews (clearing being the operation likely to make most chance finds) and the trenching crews (trenching being the operation that would most severely impact an archaeological site in the right-of-way). Consideration will be given to maintaining a wider gap between the clearing and trenching operations in archaeologically sensitive areas: those areas which, based on the concentration of sites identified in Phase I, have the greatest potential to yield chance finds. The wider gap will allow more time to evaluate a chance find, and potentially to implement mitigation by data recovery or additional re-routes. In addition, should the time gap between identification and trenching not prove adequate to design and implement measures needed to protect a particular significant chance discovery, then work around procedures would be employed to allow that extra time. This will be clarified with the contractor during the negotiations process with the representatives of Ministry of Culture and Tourism. Archaeological works, although included in construction schedule and budget planning, will only be used when absolutely necessary.

The CHMs, who will be part of the construction team, will identify and report archaeological chance finds and communicate these finds to appropriate Project staff (including Project heritage specialists) for timely evaluation and formulation of any appropriate site specific response that may be needed. Prior to the start of construction, the Project will develop a specific written set of monitoring and protection protocols, including notification and reporting requirements for Project team and appropriate government authorities.

CHMs will also be responsible for verifying the implementation and effectiveness of all monuments protection measures that were put in place during Phase 2 and Phase 3 monuments work, and they will call on appropriate monuments expertise to accomplish this objective.

The Cultural Heritage mitigation works will be monitored by the CHMs and representatives from the MOCT if required. The CHA will co-ordinate the monitoring process.

Standards

The CH Team will only undertake a CH intervention that is governed by a written and agreed specification prepared in advance of work commencing. The specification will be approved in advance by the CHA.

In preparing a specification, the CH Team will establish the intention of the work, and the extent to which archaeological considerations will be allowed to affect the development schedule of the pipeline Project.

The specification will consider the need to include appropriate contingency arrangements with respect to field procedures, and thus to resources. Contingency arrangements will not be open ended but will be properly specified in their own right, and reflect prior knowledge of the site, the physical context of the site and the primary objectives of the CH intervention. Work teams will be in a position to justify in detail the eventual implementation of contingency arrangements.

The specification will be agreed by all relevant parties before work commences. All work will conform to the agreed specification. Any variations will be agreed in writing by all relevant parties.

Full and proper records (written, graphic, electronic and photographic as appropriate) will be made for all work, using pro-forma records and sheets appropriate to the work.

The recording system used will be one that appropriate to the requirements of the Project, and will be agreed with relevant parties including the body that is to receive the archive.

The recording system and data standards used during the watching brief will be compatible with those of all other work teams involved in archaeological mitigation on the pipeline corridor (IFA, 1994).

Protocol

A specific protocol for the CHMs will be developed as an integral part of the overall environmental construction monitoring programme.

Key elements of the required protocols are:

- current archaeology and monuments list with resource coordinates and status of each resource
- CHMs able to order a STOP WORK ORDER at suspected chance find locations
- flagging and/or fencing and signs at known and newly discovered resources
- formal process for timely evaluation and salvage of potentially threatened resources reported through the Chance Finds process
- Contracted archaeological expeditions and monuments specialists for timely salvage work
- CULTURAL HERITAGE CONTRACTOR orientation programme to assure understanding guidelines and lines of communication regarding cultural issues.

18.6.2 Interface Meetings

COMPANY E&S team will be responsible for implementation of the Cultural Heritage protection strategy. Project Regulators and the CHA will meet on a monthly basis, or as required. These meetings will include suitably qualified representatives from the concerned departments at the MOCT; from the Project and may include members of other concerned institutions (for example, representatives from the regional museums etc.). These meetings may either occur in Baku, or be in the form of a site visit to locations where archaeological excavations are being undertaken.

CULTURAL HERITAGE CONTRACTOR will produce a weekly report on progress of excavations. This will be sent to COMPANY CHA.

After completion of the archaeological fieldwork, the CHA will co-ordinate publication of the results of the archaeological excavations subject to regulatory approval.

19 LAND MANAGEMENT PLAN

19.1 Scope

This Land Management Plan (LMP) identifies the environmental, social and land acquisition commitments made in relation to land take during the early civil and other works and construction phases of the Project in Azerbaijan.

This Land Management Plan covers the use of temporary land or facilities during Project construction. It outlines required CONTRACTOR management activities around temporary Project usage of additional land and facilities that have not yet undergone environmental and social review (through the ESIA) or were not acquired through COMPANY land acquisition processes, i.e. additional land / extension of land required by CONTRACTOR activities beyond land handed over to CONTRACTOR by COMPANY. Such land may include but are not limited to: camps and pipe yards, excavation areas (borrow pits/spoil pits/quarries), spoil material disposal areas, all roads, additional ROW working width etc.

These activities include:

- Identification of additional land needs
- Environmental and Social Assessment in respect of such land needs
- Identification of land owners and users and consultation therewith
- Compensation for temporary occupation to eligible land owners and users.

The key principle of this plan is that while CONTRACTOR is responsible for identifying any additional land needs, consultation with land owners and users and further compensation will be handled by COMPANY. CONTRACTOR shall note other key principles for this plan:

- CONTRACTOR shall not enter unallocated land (as per design drawings) unless in the event of an emergency
- CONTRACTOR shall identify any additional land requirements early
- CONTRACTOR shall notify COMPANY of additional land requirements at least three months before such land is actually needed for construction
- An environmental and social assessment shall be undertaken by an independent party hired by CONTRACTOR for all additional land areas
- COMPANY shall undertake consultation and compensation with regards to additional land
- Compensation in respect of additional land will be back-charged by COMPANY to CONTRACTOR
- Damages and/or compensation claims that may be handled and settled by COMPANY will be back-charged to CONTRACTOR as applicable.

19.2 HGA Standards and Practices

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Sec 3.1). Specific guidance considered for this particular section has been described below.

- IFC Performance Standard 5: Land Acquisition and Involuntary Resettlement (January 2012) and the associated Guidance Note
- IPLOCA: ‘Onshore Pipelines – The Road to Success’ (2009 Draft), Section 6: ‘Best Practice in Planning and Construction Techniques’. S.6 Best Practices in Planning and Construction Techniques.

The objectives and key requirements of PS 5 are the following:

- To avoid or, at least minimise, involuntary resettlement wherever feasible by exploring alternative project designs
- To mitigate adverse social and economic impacts from land acquisition or restrictions on affected persons' use of and access to land by: (i) providing compensation for loss of assets at replacement cost; and (ii) ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation, and the informed participation of those affected
- To improve or, at a minimum, restore the livelihoods and standards of living of project affected persons to pre-project levels, through measures that can be land-based, wage-based and/or enterprise based, so as to facilitate sustainable improvements to their socio-economic status.

19.3 Roles and Responsibilities

General roles and responsibilities for land management that apply to CONTRACTOR and COMPANY are set out below.

19.3.1 Company

- Acquire all land in support of Project construction activities in accordance with the HGA in a manner and timeframe that attempts to meet the CONTRACTOR needs. COMPANY shall not be held liable for any additional land delays associated with the acquisition process

19.3.2 Contractor

- CONTRACTOR shall develop for COMPANY approval a Land Management Contractor Implementation Plan (LMCIP), detailing implementation and organisation arrangements to ensure compliance with the requirements included within this ESMMP
- CONTRACTOR shall ensure that all relevant staff are aware of the provisions of this ESMMP, through awareness and training activities to be detailed in the Land Management CIP
- CONTRACTOR shall put in place a community grievance management system, whereby potential grievances associated to land management (amongst other types of grievances) will be logged and resolved; COMPANY will be informed of any grievance
- CONTRACTOR shall identify any additional land requirements and notify COMPANY at least three months in advance
- CONTRACTOR shall undertake an Environmental and Social (ES) Assessment for all additional land areas
- CONTRACTOR shall engage an independent consultant to carry out such ES assessments (see Section 19.4.2.2) in accordance with the requirements of the ESMMP, survey plans and complete close-out monitoring in all Project areas with the potential to cause significant environmental impact including, but not necessarily limited to concrete/asphalt batching plants, construction camps and lay-down areas
- CONTRACTOR shall be responsible for damages and/or compensation claims associated with their works.

19.4 Impact Avoidance and Mitigation

CONTRACTOR shall prepare for COMPANY approval a Land Management Contractor Implementation Plan that details the specific mitigation measures that will be implemented for the planning, assessment, preparation and use of additional lands.

19.4.1 General

CONTRACTOR shall ensure that no activities are undertaken outside of approved work areas, through the use of site demarcations for all areas, especially areas that are known as sensitive either from an environmental or community point of view. This may include staking of the pipeline RoW, fencing of construction site limits and / or signs. Additionally, all Project vehicles shall remain on designated access and service roads and parking areas as agreed with COMPANY and identified in the relevant plan(s).

Contractor will aim to reduce time between welding and ditching to avoid excessively impeding livestock and wildlife movement.

CONTRACTOR shall implement the following commitments:

2-02	Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency).
32-03	Parking of Project-related vehicles will be restricted to designated areas.

CONTRACTOR personnel shall be trained to understand the requirements about use of unapproved land and the need to stay strictly within site boundaries and within the working areas, using only approved access and service roads. Personnel shall also be notified of the need to inform COMPANY should additional land beyond site demarcations be needed.

19.4.2 Assessment of Additional Land

19.4.2.1 Notification

CONTRACTOR shall notify the SCPX Project Management Team formally in writing of the need for additional land, which shall constitute a management of change, with at least 3 months' notice prior to the start of construction and/or the use of these areas and provide sufficient justification for COMPANY approval. CONTRACTOR'S Representative shall notify COMPANY Representative in writing of the requirements. CONTRACTOR shall provide the coordinates, an aerial map and GIS Shape File of all additional land including but not limited to:

- Camps
- Pipe yards
- Access, Service and bypass roads
- Spoil disposal sites
- Extraction sites (borrow and/or spoil pits)
- Batching Plants
- Extra-width at river or other crossings that may not be accommodated by initial COMPANY land acquisition
- Any other additional land.

All facilities shall have the coordinates taken at the outer edge perimeter ensuring the whole site is recorded, including access and bypass roads. All data shall be provided electronically in accordance with the SCPX Project electronic data requirements, as specified in the CONTRACT, to COMPANY for inclusion into the GIS system. Affected areas will be recorded.

CONTRACTOR shall undertake an internal preliminary due diligence screening of the site(s) in order to ensure there are no existing environmental or social constraints on the area such as protected land, archaeological or cultural heritage evidence, or social issues prior to the selection of site and notification. Overall, the site selection process shall consider input factors such as engineering feasibility, access, land availability, land use, environmental constraints, and other social issues. This due diligence screening shall be documented using a standardised form, the template of which shall be submitted by CONTRACTOR to COMPANY as part of the LMCIP.

COMPANY will endeavour to obtain the additional land, but cannot guarantee to make the additional land available to the CONTRACTOR and may reject CONTRACTOR's request for land if it considers there to be insufficient justification of need or significant environmental or social impact associated with the use of the proposed area. The CONTRACTOR shall not make any contacts with local residents, land owners or occupiers without the prior consent of the COMPANY.

19.4.2.2 Environmental and social assessment

CONTRACTOR shall undertake and submit for COMPANY approval, a written environmental and social assessment of the additional land that will be required which will include a description of the environmental and social baseline conditions, including contamination (such as fly-tipping, hydrocarbons), ecology, cultural heritage, erosion risk, risk of ground instability, (before, during and post development) water resources, social environment, etc. The assessment shall also include a description of the planned use of the area and an assessment of the impacts and proposed mitigation measures.

CONTRACTOR shall comply with the following requirements:

39-02	Site assessments (taking into consideration ecology, cultural heritage, social, erosion risk, water resources) will be undertaken if the need for additional land is identified following submission of the ESIA.
39-03	An environmental and social assessment report will be prepared by the Project if any additional land outside that described in the ESIA is to be used, the scale of which will depend on the proposed activities and sensitivities of the area.

For those facilities that have potential to cause significant environmental impact, including, but not necessarily limited to concrete/asphalt batching plants, construction camps and lay-down areas, the Environmental and Social Assessment shall be prepared by an independent third party (experienced consultant with relevant credentials).

The level of detail required within each assessment shall depend on the proposed Project activities and sensitivities of the area and shall be agreed with COMPANY, who may have to consult with the Ministry of Environment and Natural Resources. As a minimum, the environmental and social assessment shall include:

- Introduction
- Environmental and Social Baseline Description
- Impacts and Mitigations
- Conclusion
- Appendices
- Permits and Regulatory Approvals.

The results of the environmental and social assessment/due diligence will be used to:

- Compare construction and operation stage environmental quality monitoring results
- Guide site reinstatement (see Reinstatement Plan)
- Compare post-reinstatement quality monitoring results and close the site-related risks and liabilities on the Project.

CONTRACTOR'S assessment shall incorporate the provisions included in the sections below in assessing each type of area.

Spoil disposal sites

The environmental assessment of spoil disposal sites shall consider the impacts on flora, fauna, erosion, cultural heritage and the local population in terms of water resources and/or

disturbance. The assessment shall also identify the proposed reinstatement of the site in accordance with the Reinstatement Plan.

CONTRACTOR shall implement the following commitment:

9-02	All potential subsoil disposal sites and disposal plans will be subject to an environmental and social review prior to their adoption.

CONTRACTOR shall not dispose of spoil in any locations other than that approved for land use and as per any landowner agreements made.

Extraction sites (borrow pits/quarries) operated by CONTRACTOR

CONTRACTOR shall conduct an environmental and social assessment, including baseline surveys, of the site and provide a report in writing to COMPANY for approval before any extraction commences as per the above requirements. The environmental assessment shall detail how the site shall be reinstated. CONTRACTOR shall be responsible for the approval of any permit that may be required by local, district or national authorities.

Land acquisition measures shall be required as per Section 19.4.3 below. CONTRACTOR is responsible for obtaining all required licences and consents.

19.4.3 Land Acquisition/Compensation Requirements

19.4.3.1 General

Land acquisition for all land shall be undertaken by COMPANY. COMPANY will consult as needed with local authorities, land owners and land users in respect of occupation and compensation of land plots requested by CONTRACTOR for construction use.

COMPANY shall undertake fair and transparent land acquisition for any additional lands, in accordance with the procedure and the established rates in the SCPX Land Acquisition and Compensation Framework (LACF) and the associated Guide to Land Acquisition and Compensation (GLAC).

CONTRACTOR shall carry out actions to meet the commitment below:

32-01	The project will consult with local government authorities, landowners and land users, including graziers, before restricting access to land and will establish the need for temporary fencing.
39-01	The relevant authorities will be consulted if the need for any additional land take is identified and the relevant permits and consents will be obtained

CONTRACTOR shall implement the following commitment:

32-17	The Project will seek to identify whether any herders use the construction areas and aim to consult with them on potential restrictions in the future.

The commitments in 19.4.2.2 regarding surveys and environmental and social assessment and approvals are a necessary part of the overall land acquisition process.

19.4.3.2 Pre-entry survey

As part of the process and prior to any entry and/or construction of the acquired land, COMPANY shall undertake a detailed inventory and inspection of the land parcel(s) and assets. The purpose of the pre-entry survey is to conduct an inventory of land and all other immovable assets, including drainage systems and irrigation. CONTRACTOR shall witness pre-entry survey.

Documentation should extend to and beyond access and egress routes, lay down areas and cover surroundings of the area of interest and shall include photographic / video evidence of pre-construction condition of land and facilities (e.g. presence of crops, infrastructure, roads etc.).

COMPANY shall document clearly any agreements for temporary measures to be installed (e.g. during disruption to drainage/irrigation, temporary fencing, etc.) and reinstatement made with the landowner / user.

CONTRACTOR shall ensure that any field boundaries that are removed will be replaced with temporary fencing, where feasible, to meet landowner/user requirements.

CONTRACTOR shall carry out the actions to meet the commitments below:

34-01	Any field boundaries that are removed will be replaced with temporary fencing to meet reasonable landowner/user requirements.

19.4.3.3 Compensation

COMPANY shall carry out land acquisition and compensation following the principles and rates described in the SCPX LACF and the associated GLAC.

CONTRACTOR shall be liable for the payment of all compensation claims and reinstatement of damage attributable to CONTRACTOR activities, unless otherwise approved by COMPANY.

CONTRACTOR shall implement the commitments below:

32-04	The Project will provide a substitute for watering holes used by livestock that cannot be used due to Project-related actions. The substitute will be of a type, and in a location, to be agreed with representatives of the livestock owners and herders.

Any negotiations carried out by CONTRACTOR shall be witnessed by COMPANY to ensure fairness and transparency and to capture any grievances associated with the process. Compensation shall be in accordance with the SCPX GLAC.

19.4.3.4 Location-specific commitments

The KPs of the location specific commitments for the Project to consider are listed against the commitment below.

D8-04 BVR A06	The livestock pens and temporary accommodation will be relocated a minimum distance of 200m from the boundary of BVR A06.
X13-06 KP118	Where practicable the RoW width will be designed to minimise impact to houses.
X13-07 KP123	The distance between the existing pipeline(s) and SCPX will be designed to reduce the number of trees that need to be removed.
X13-08 KP5-KP24 (BVR A6), KP289	Project procedures will be applied to the affected household to aim to ensure fair and transparent relocation is applied.
X13-09 KP5-KP24 (BVR A6), KP289	The ROW will be designed to minimise impacts. A detailed survey will be undertaken to determine the location of the Azeri gas pipeline in this area and therefore whether the SCPX pipeline can be re-routed to avoid the house and associated farm buildings.
X5-13	The new access road to the pigging station will follow existing tracks where possible.
X5-19 KP345 - KP347	The Company will determine whether the water abstraction at the Hasansu is still in existence and if so, will consider if there are potential impacts and agree if mitigation measures are required

19.4.3.5 Reinstatement and exit survey

After work is complete in the area and CONTRACTOR is ready to demobilise, CONTRACTOR shall reinstate the land in accordance with the Reinstatement Plan in Section 7.

Following reinstatement, an exit survey shall be undertaken by CONTRACTOR, witnessed by COMPANY. The survey shall cover all pre-entry areas surveyed and additional areas or property affected by site work. Photos are to be taken of all areas covered in pre-entry above and any potential areas of concern. CONTRACTOR shall be responsible for closing out any actions on a timely basis arising from the exit survey to ensure a smooth hand-back to the land entity.

CONTRACTOR shall ensure that there are no subsequent restrictions (other than those listed in the re-use agreement between owner/user and Company) on use following the return of land to land users or owners.

The Land Exit Agreement shall be signed by the land-owner/user, legal entity or third-party, CONTRACTOR and COMPANY as per the HGA.

CONTRACTOR shall implement the following commitments:

32-05	The Company Land Acquisition Team, environmental representative and the construction contractors will carry out an exit inspection with the previous land owner/user of all land that was used during the construction period.
32-07	The Project will inform land owners/users about any reuse restrictions that apply to land used by the project.

19.4.4 Permits and Approvals

CONTRACTOR shall ensure that all required permits, approvals and land entry agreements (the latter provided by COMPANY) are in place prior to the use of any land or facility. CONTRACTOR shall ensure that the site is demarcated in accordance with the agreements.

19.4.5 *Grievance Management System*

Grievances arising from the acquisition and use of additional lands shall be handled in accordance with the Community Liaison Management Plan which includes requirements for grievance management, including the need for CONTRACTOR to keep a community complaints register.

All grievances related to land management will be thoroughly investigated by COMPANY and CONTRACTOR together. Land management compensation claims are the responsibility of CONTRACTOR.

Any damage caused by CONTRACTOR outside agreed working area boundaries, including crop damage, will be compensated by CONTRACTOR in accordance with rates as set out in the SCPX Guide to Land Acquisition and Compensation.

19.5 Verification and Monitoring

19.5.1 Contractor Monitoring

CONTRACTOR shall develop a formal monitoring programme as part of its ESMS to assess the implementation of the requirements of this plan to include as a minimum: regular site inspections, including inspection to ensure work is contained within Project boundaries; focused audits on specific topics or key locations; the identification of corrective actions; an action tracking system and assurance over action close out as per CONTRACTOR'S ESMS.

Environmental and social performance shall be compared against the KPIs in Appendix D, Table D1.

19.5.2 Company Verification

CONTRACTOR is contractually bound to implement the requirements within this plan and other CONTRACT documentation and COMPANY shall verify compliance through a number of mechanisms including undertaking their own inspections, audits and monitoring programmes in accordance with its ESMS, including the ESMS Non-Conformance Procedure.

Where deficiencies or opportunities for improvement are found, COMPANY will endeavour to notify CONTRACTOR in writing. Such written notification shall contain specific details concerning any non-compliance. CONTRACTOR shall, upon being advised of its non-compliance, immediately take all corrective action required to comply. Such corrective action shall, unless provided elsewhere in the CONTRACT, shall be taken at CONTRACTOR'S expense. If Contractor fails to take such corrective action promptly, COMPANY may direct CONTRACTOR to suspend all or part of the Work until satisfactory corrective action is undertaken. Costs incurred by CONTRACTOR as a result of such suspension shall be for CONTRACTOR'S account and any resultant CONTRACTOR performance delays shall not be deemed excusable hereunder. Not receiving written notification of non-compliance from COMPANY does not reduce the responsibility of CONTRACTOR to identify and correct any non-compliance.

20 MONITORING

CONTRACTOR's environmental and social Implementation Plans shall propose programmes, protocols and procedures to monitor the success of the environmental and social mitigation measures as well as gather environmental data on KPIs and Environmental Monitoring requirements specified in Appendix D.

CONTRACTOR shall develop their own templates for COMPANY approval or when directed use COMPANY approved reporting templates. All monitoring results, environmental and social assessment results, baseline survey results and other environmental and social monitoring data shall be stored within the CONTRACTOR's document control system, made available at COMPANY request and handed over to the COMPANY on completion of the Project to allow COMPANY to transition this information to the Operations Management System. CONTRACTOR, ECOLOGICAL MANAGEMENT CONTRACTOR, and CULTURAL HERITAGE CONTRACTOR shall each develop a transition plan detailing types of information, information storage media.

20.1 Environmental Monitoring

CONTRACTOR shall initiate environmental monitoring at the start of construction activities and schedule regular site-specific monitoring events based upon the construction activities occurring in an area (e.g. water quality monitoring will be performed when river crossings are being constructed). Monitoring will continue throughout the construction activity to gauge the effectiveness of the mitigation measures that are implemented. CONTRACTOR shall maintain an emissions and discharge register identifying all stationary sources of emissions and discharges (e.g. air; noise, wastewater).

CONTRACTOR shall engage an independent monitoring consultant to implement all environmental monitoring and analysis activities. CONTRACTOR shall ensure that environmental monitoring personnel are trained in appropriate techniques (including use, calibration and maintenance of field monitoring equipment; sample collection, labelling and transport; tracking movements) and in interpretation of monitoring results, record keeping and reporting procedures.

CONTRACTOR shall ensure that environmental monitoring programmes use appropriate methods and equipment (e.g. sampling method statements specifying containers and sample storage; automatic data recorders for instantaneous water quality, air and noise; measuring devices for weight and volume; photography and geographic information system units). CONTRACTOR's Implementation Plans shall follow prescribed monitoring and reporting programmes

CONTRACTOR shall sub-contract independent analytical laboratories to analyse samples. The CONTRACTOR shall use a quality assurance programme to verify the performance of each laboratory so used. CONTRACTOR shall submit proposed laboratories for COMPANY approval.

20.2 Social Monitoring

CONTRACTOR's Community Liaison Officers and COMPANY's Community Liaison Officers shall maintain dialogue with Project Affected Communities during the construction phase of the Project. CONTRACTOR's Community Liaison Officers shall submit daily reports on their activities to the Social Manager.

CONTRACTOR shall operate a Grievance Procedure under its Implementation Plan for Community Liaison. CONTRACTOR's Community Liaison Officers and COMPANY's Community Liaison Officers shall investigate jointly complaints registered under the

Complaints Procedure. CONTRACTOR shall submit a report to COMPANY after any social 'incident' (including complaints from communities and neighbours) that identifies the root causes and makes recommendations for mitigation and improvement.

20.3 Reporting

CONTRACTOR shall submit each month to COMPANY an environmental and social report that shall include, but not be limited to, the following details:

- Highlights
- The status of all non-conformances with the ESMMP
- Summary of all E&S related incidents and Stop Work incidents
- Summary of all E&S Regulatory and Legal Issues
- Updated register of all sampling and analysis of discharge and emissions
- Updated register of all waste volumes generated and disposed
- Qualitative summary against each Management Plan
- Quantitative report against KPIs as specified in each Plan.
- The nature and status of any complaints received
- Summary of community feedback and Project goodwill gestures
- Issues for Resolution.
- Community health and safety concerns
- Social conflicts and unrest

20.4 Key Performance Indicators

COMPANY has specified a series of environmental and social KPIs that address the mitigation of impacts and implementation of the plans presented in Sections 7-19. These are summarised in Appendix D, Environmental and Social Reporting and Monitoring Requirements. For the construction phase, the majority of these KPIs relate to mitigation activities so it falls to CONTRACTOR to monitor them and report data on them. COMPANY is responsible for ensuring that these KPIs are measured and reported by CONTRACTOR.

CONTRACTOR shall measure performance against the environmental and social Key Performance Indicators (KPIs) on a monthly basis, and report them to COMPANY's in-country management in a monthly Environmental Performance Report, the content of which shall be agreed by COMPANY. CONTRACTOR is also required to ensure that these KPIs are communicated to all relevant parties prior to the start of construction.

CONTRACTOR shall refer to Appendix D for details of KPIs and Environmental Monitoring that are required in these updates and reports. If KPI performance does not demonstrate that COMPANY's commitments are being met, the issues involved will be recorded in CONTRACTOR's Action Tracking System, CONTRACTOR and COMPANY shall agree ways of improving performance and CONTRACTOR shall take action to implement the agreed actions.

COMPANY shall carry out independent monitoring, sampling and analysis to verify the CONTRACTOR's results.

21 VERIFICATION INSPECTIONS AND AUDITS

In order to provide assurance that the provisions of this ESMMP and its supporting Management Plans are being implemented effectively:

- CONTRACTOR shall propose in its Implementation Plans a programme of periodic documented inspections and audits
- CONTRACTOR shall record the findings of any non-conformances from the periodic inspections and audits in an Action Tracking System (ATS), shall agree with COMPANY the means by which it shall rectify the non-conformances. Updates on the ATS and progress in implementing the corrective actions shall be reported monthly to COMPANY
- COMPANY shall implement its own inspection and audit schedule of CONTRACTOR activity to verify that CONTRACTOR is implementing environmental mitigation measures that satisfy the commitments stated in the Management Plans.

21.1 CONTRACTOR's Inspections and Audits

CONTRACTOR shall carry out walk-around inspections of all construction activities and sites and walk-through inspections of villages in the vicinity of a work site to visually assess the evidence that mitigation measures set down in each environmental or social Management Plan have been implemented, using a pro-forma developed by CONTRACTOR to record observations. The inspections may also include talking to personnel and community members, to determine whether commitments that cannot be assessed by visual inspection have been implemented. The pro-forma(s) shall include, but not be limited to:

- Erosion Control
- Ecology - flora and fauna protection
- Interruption of river water flow
- Wastewater treatment and discharge
- Housekeeping
- Waste management
- Energy efficiency
- Vehicle and equipment maintenance
- Noise and dust
- Aggregate extraction and transport
- Water extraction
- Fuel saving
- Oil, chemical and lubricant storage
- Spill response equipment
- Enforcement of the Code of Conduct
- Records of complaints
- Traffic movements and speeds
- The condition of roads, buildings adjacent to access roads and paths
- Signage and community safety
- Transparency of employment process
- Adequacy of training
- Use of locally procured materials.

Before carrying out an inspection or audit, CONTRACTOR's Environmental Inspector (or Community Liaison Officer in the case of a social inspection) shall review the previous inspection report for relevant sites and CONTRACTOR's ATS for any outstanding items or actions that have not been closed out. The Inspector shall note on the inspection pro-forma

observations confirming the effectiveness of the corrective actions that have been implemented.

CONTRACTOR shall develop a formal audit programme as part of its ESMS and develop audit pro-formas.

CONTRACTOR shall note all non-conformances as per the Non-conformance Procedures and within their ATS. CONTRACTOR's Environmental Manager (or Social Manager in the case of a social finding) shall propose appropriate corrective actions and agree them with COMPANY at the weekly/monthly co-ordination meetings.

21.2 Monitoring Non-Compliance Notification

In addition, CONTRACTOR shall notify COMPANY of each and every monitoring result that is not in compliance with the project environmental standards (Appendix B) WITHIN twenty-four (24) HOURS of CONTRACTOR receiving the result(s). WITHIN forty-eight (48) HOURS of receipt of a monitoring result indicative of non-compliance, CONTRACTOR shall provide a written report (in English) to COMPANY containing, as a minimum, the following data:

- Confirmation of non-compliant monitoring result (including monitoring location, date and time of monitoring, monitoring result, date and time of CONTRACTOR's receipt of monitoring result; and applicable project standard)
- Action taken in response to non-compliant monitoring result (for instance cessation of non-compliant discharge
- Additional treatment (actual or proposed) of non-compliant discharge
- Additional monitoring (actual or proposed) to confirm return to compliance
- Confirmation of close-out of non-compliant conditions, or timetable for close-out (timetable to include further monitoring and reporting to COMPANY).

21.3 Action Tracking System

CONTRACTOR's Environmental Manager shall maintain an ATS that records:

- Monitoring results that do not conform to the commitments stated in the Management Plans
- Inspection and audit findings that do not conform to the commitments stated in the Management Plans.

CONTRACTOR shall also develop ATS for hazardous material releases (i.e. spill logs) and a grievance log in formats to be agreed with COMPANY.

CONTRACTOR's Environmental Manager and Social Manager shall discuss each item on the Action Tracking System with COMPANY's representative at regular Environmental and Social meetings, and agree appropriate corrective action, or track progress towards implementing the agreed corrective action, until they have been closed out and inspected.

21.4 COMPANY Verification Audits

COMPANY shall schedule a programme of verification audits to gather tangible evidence demonstrating whether CONTRACTOR is complying with their Implementation Plans and Procedures, including any relevant method statements and mitigation measures that appear likely to achieve level of performance recognised in the commitments set out in the Management Plans effectively and that the Project's environmental and social impacts have been minimised. It will also provide a mechanism for implementing new measures to avoid and mitigate the Project's environmental and social impact and facilitate continual improvement.

The formal verification audits will be periodic (e.g. quarterly), and when it is practical to do so, COMPANY will provide CONTRACTOR with written notice of planned audits to ensure that all appropriate staff, documentation and monitoring records are available.

COMPANY shall appoint an audit team leader and an audit team to conduct the following activities:

- Develop an audit protocol covering the environmental or social issues to be audited to be used as an 'aide memoir' for the auditors, taking account of the findings of previous audits and corrective actions that have been implemented by CONTRACTOR
- Convene an audit opening meeting
- Review documents, observe work practices and the condition of sites and equipment, and carry out interviews as necessary
- Compile audit findings and recommendations
- Hold an audit close-out meeting with site managers to agree the methods by which CONTRACTOR shall close out each observed non-conformance
- Raise appropriate non -compliance reports and have CONTRACTOR's ATS updated accordingly
- Issue the audit report.

Over time, COMPANY's programme of verification audits will examine a complete range of the Project activities and the whole of CONTRACTOR's environmental and social management system, including but not limited to:

- Environmental and social management documentation (e.g. review of environmental policy, adequacy of CONTRACTOR's Implementation plans, environmental KPIs, employment contracts training documentation, method statements)
- Implementation of mitigation measures (e.g. observation of ROW and site clearance, translocation of species, trenching, pipelay and backfill, minimising natural resource use, river crossing construction, hydrotesting, biorestoration, process equipment installation, equipment commissioning, inspecting vehicles and power generators, and their maintenance records)
- Conformance with CONTRACTOR's Implementation Plans and identify the need for corrective actions, and to check that previous corrective actions have been implemented effectively
- Implementation of CONTRACTOR's environmental quality control procedures (e.g. review of CONTRACTOR's inspection reports and corrective action register)
- Implementation of fair and transparent employment practices
- Check on the accuracy and sufficiency of the reporting of performance data.
- Inspecting existing and new aggregate quarries and borrow pits as they are brought into service for the Project, to verify that the selected site meets COMPANY's environmental requirements in terms of sustainability, and that the site operators use safe working practices, have the requisite permits, and provide their personnel with adequate HSE training and equipment.

COMPANY shall document each audit carried out by compiling a written report that includes all identified non-conformances and recommendations. Where good practices are observed these will also be recorded.

APPENDIX A –COMPANY HSSE POLICY

Azerbaijan Developments
Health, Safety, Security & Environmental Policy

BP has a clear commitment to no accidents, no harm to people and no damage to the environment.
In line with these goals the leadership of Azerbaijan Developments is fully committed to the protection of the natural environment and to the health, safety and security (HSSE) of its staff and the communities in which it operates.
These goals are fundamental to Azerbaijan Developments ultimate objective of delivering inherently safer, healthier and environmentally sound facilities to Operations.

To achieve these stated commitments, goals and objectives Az Developments we will:

- Comply with the AzSPU Health, Safety, Security and Environmental Policy
- Drive for continuous improvement through concept development, detailed design, procurement, construction, commissioning, installation and handover to Operations.
- Apply an Inherently Safer Design and Continuous Risk Reduction strategy to all project development concepts.
- In line with BP Group expectations, identify process safety risks at each stage of design development and ensure appropriate safety performance standards are defined to control residual risks. These performance standards will be maintained through procurement, construction, and installation and will be confirmed during commissioning and start-up.
- Execute our projects under the principle that safety is good business. No activity is so important that we can accept compromises to our HSSE policies and procedures.
- Ensure that our contractors and ourselves have rigorous, project specific, HSSE Policies, Management Systems and HSSE Plans in place. Ensure that the content and implications of these documents and philosophies are communicated and explained to the workforce.
- Demonstrate strong and visible leadership at all times. Leaders are engaged and take ownership at the work sites. They monitor the work as it is being executed, make themselves available to the workforce, listen to their concerns and take actions where necessary.
- Set realistic, measurable, strategic objectives that drive us to continuously improve our performance.
- Implement a rigorous process of risk assessment and risk management that includes Risk Assess It, Talk It, Check It (RTC).
- Train management and supervision in the principles of Effective Safety Leadership (ESL), Safety Observations and Conversations (SOC) and Behavioural Observation Safety System (BOSS).
- Ensure that programmes in place to train and assess the competencies of the BP and contractor workforce.
- Ensure that each site or delivery team implements a Control of Work (CoW) procedure that is aligned with the Azerbaijan Developments Control of Work Policy.
- Identify the root causes (system causes) of the incidents that occur during our projects and implement corrective measures to prevent reoccurences.
- Ensure that our contractors implement Food Safety and Occupational Health and Hygiene Programmes
- Audit against BP Group, Segment Essentials and the requirements of the Project HSSE Management Systems and Plans.
- Publish the commitments as outlined in project specific Environmental and Social Impact Assessments (ESIA) and have plans in place to meet these commitments.
- Recognise those who positively contribute to improve our HSSE performance.
- Ensure that every person in the project offices and sites understands that it is their obligation to stop unsafe work and to take time out for safety. We will support the individuals who do stop unsafe work and take time out for safety.

Bruce Luberski
Vice-President, Azerbaijan Developments
January 2010

APPENDIX B – PROJECT ENVIRONMENTAL STANDARDS

1. General

1.1 Purpose

The purpose of this document is to define the SCPX Project Quantitative Environmental Standards.

These standards shall apply for the duration of SCPX project, including construction, commissioning and operations. Once the SCPX pipeline and facilities have been commissioned, they will form part of the existing SCP system, including the existing SCP Environmental Management System and its environmental standards.

These environmental standards which have been adopted by the SCPX Project have been derived based on the requirements of the SCP Azerbaijan Host Government Agreement (HGA).

The HGA between the Government of Azerbaijan and the SCP Participants governs any future expansion to the SCP system and thus establish the legal obligations for the SCPX Project. The provisions of the HGA override any inconsistent provisions in national legislation, with the exception of the provisions in the '*Constitution of the Azerbaijan Republic*'.

The HGA sets out the obligation for the project participants to implement certain standards when designing and operating the pipelines. In summary the construction and operation of the SCPX project in Azerbaijan is required to conform with the following environmental standards:

- *use best endeavours to minimise potential disturbances to the environment, giving priority in the order of life, the environment and property*
- *in accordance with the standards and practices generally prevailing in the international Natural Gas pipeline industry*.

1.2 References

Document Title
WHO Air Quality Guidelines, Global Update 2005
WHO Air Quality Guidelines for Europe, 2nd Edition, 2000
UK Air Quality Standards Regulations 2007
EU Ambient Air Quality Directive, 2008/50/EC
IFC General EHS Guidelines, 2008
WHO Guidelines for Community Noise (1999)
BS-5228-1; 2009: Code of practice for noise and vibration control on construction and open sites – Part 1: Noise
BS-5228-1; 2009: Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration
EU Urban Wastewater Treatment Directive (91/271/EEC)
UK Urban Waste Water Treatment Regulations (1995)
IFC EHS Sector Guidelines: Onshore Oil and Gas Development, 2007
EU Freshwater Fish Directive (2006/44/EC)

Model Procedures for the Management of Contaminated Land (CR11) (DEFRA and the Environment Agency, 2004)
Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination (Environment Agency, 2006)

1.3 Abbreviations and Definitions

Abbreviation/ Acronym	Description
BOD	Biochemical Oxygen Demand
CO	Carbon Monoxide
COD	Chemical Oxygen Demand
EU	European Union
IFC	International Finance Corporation
NO2	Nitrogen Dioxide
PM	Particulate Matter
SO2	Sulphur Dioxide
WHO	World Health Organisation
Zn	Zinc

1.4 Project Air Emissions Standards

Combustion equipment used within construction, and yet to be defined, shall meet the relevant standards within IFC General EHS Guidelines (2007).

1.5 Project Ambient Air Quality Standards

Table 1-1 Project Ambient Air Quality Standards

Parameter	Proposed SCPX Project Standard	Source of SCPX Standard
NO_2	40μg/m³ annual average (human health) 30μg/m³ annual average (ecosystems)[1] 200μg/m³ hourly average	WHO WB[3]/UK UK[2] WHO[4]/WB
Benzene	5 μg/m³ annual average	UK[2]
CO	100,000μg/m³ for 15 minutes 60,000μg/m³ for 30 minutes 30,000μg/m³ for 1 hour 10,000μg/m³ maximum daily 8-hour average	WHO[4] WHO[4] WHO[4] WHO[4] WHO[4]/UK[2]
PM_{10}	20μg/m³ annual average 50μg/m³ 24hr average (not to be exceeded more than 3 days a year, 99th percentile)	WHO/WB[3] WHO/WB[3]
$PM_{2.5}$	10μg/m³ annual average 25μg/m³ 24hr average	WHO/WB [3] WHO/WB[3]

Note: Where existing ambient air quality levels are identified as exceeding the above standards prior to project start-up (perhaps caused by non-project emissions sources) then the project may not be able to meet these standards due to factors outside of the project's control. In these circumstances the project will consider the ambient air quality levels and, taking into account the non-project factors affecting air quality, will take reasonably practicable steps to reduce the project's contribution to air emissions.

Reference: 1.The air quality objectives for ecosystems should apply more than 20km from an area with a population of more than 250,000 and more than 5km away from industrial sources, motorways and built-up areas of more than 5000 people.
2. UK Air Quality Standards Regulations 2010, UK Air Quality Strategy and UK Environment Agency H1 Environmental Risk Assessment Guidance, Annex F, Air Emissions
3. WHO, Air Quality Guidelines Global Update, 2005; IFC General EHS Guidelines (2007)
4. WHO Air Quality Guidelines for Europe, 2nd Edition, 2000

Ambient air quality standards shall be achieved in the surrounding environment at points representative of population exposure. These include residential buildings, schools and hospitals.

1.5 Project Ambient Noise Standards

1.5.1 Permanent Noise Sources

Table A-2 Project Ambient Noise Standards (Permanent Noise)

Noise Limit[1] (applies at receptors)	dB(L_{Aeq})
Free–field rating level ($L_{Ar,Tr}$)[2] Daytime (07:00–23:00)	50
Free–field rating rating level ($L_{Ar,Tr}$) [2,3] Night time (23:00–07:00)	42
Façade of bedrooms ($L_{Amax, fast}$) at night (23:00–07:00)	60
Free–field rating level ($L_{Ar,Tr}$) will not exceed background by greater than 3dB where background already exceeds the absolute limits	

[1] These limits do not apply to emergency or unforeseen events
[2] $L_{Ar,Tr}$ = free field rating level, site noise only plus tonal correction
[3] The UK guidance specifies this as a façade level of 45dB(A), to maintain consistent units this has been adjusted to free field
Reference: IFC 'General EHS Guidelines', 2007: Environmental, 1.7; UK; IPPC H3 (Part 1 and 2) Horizontal Guidance Note (2002 and 2004).

1.5.1.1 Semi-permanent noise sources

The standards above (Table 1-2) apply to permanent project facilities and not construction activities. The project has voluntarily taken the decision to aim to achieve these standards at the construction camps which, although temporary facilities, may generate noise continuously for the duration of their use. For example, power generation equipment may run continuously for the duration of the camp operation. The above noise standards shall apply at sensitive receptors in the vicinity of the construction camps. These standards do not apply to any other construction activities.

1.5.2 Temporary Noise Sources

During construction, noise emissions shall be assessed in accordance with BS5228-1 (2009), E3.3. Example Method 2: 5dB(A) change. As stated by this method, the following noise standards shall apply to construction noise activities of duration of one month or longer.

Noise levels generated by construction shall not increase the pre-construction ambient noise by 5dB or more, subject to lower cut-off values of 65 dB, 55 dB and 45 dB LAeq, Period, from construction noise alone, for the daytime, evening and night-time periods, respectively.
However, in the event that noise levels are predicted to exceed these levels a risk assessment shall be carried out to understand the predicted noise levels, the duration that the levels will be exceeded and potential mitigation measures which have been applied to help ensure the noise is as low as practicable.

1.6 Project Vibration Standards

Vibration has the potential to cause disturbance to humans and damage to buildings. The project shall adhere to the principles of British Standard 5228-2009 Part 2 for Vibration control and shall seek to control vibration to levels that remain tolerable to humans and are not likely to cause damage to buildings in line with the guideline values below:

Table A-3 Project Vibration Standards

Standard	Receptor	Vibration limits mms-1 (ppv)
British Standard 5228, 2009 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration	Humans in buildings	1.0 mms^{-1} It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents. 10 mms^{-1} Vibration is likely to be intolerable for any more than a very brief exposure to this level.
British Standard 5228, 2009 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration	Unreinforced or light framed structures Residential or light commercial type buildings	Limits above which cosmetic damage to buildings could be caused: 15mms^{-1} at 4Hz increasing to 20mms^{-1} at 15Hz increasing to 50mms^{-1} at 40Hz and above
Refer to British Standards identified for further information		

Note: Where existing background vibration levels are identified as exceeding the above standards prior to project start-up (perhaps caused by non-project sources) then the project may not be able to meet these standards due to factors outside of the project's control. In these circumstances the project will consider the vibration levels and, taking into account the non-project factors affecting vibration, will take reasonably practicable steps to reduce the project's contribution to vibration.

1.7 Wastewater Discharges

1.7.1 Project Standards for the Discharge of Sanitary Discharges

These standards apply at the point of discharge of treated sanitary discharges to a surface water.

Table A-4 Project Standards for Discharge of Sanitary Sewage

Parameter	Project Standard
pH	6-9
Biological oxygen demand (BOD) (5) (mg/l)	25
Chemical oxygen demand (COD) (mg/l)	125
Total nitrogen (mg/l)	10*
Total phosphorous (mg/l)	2*
Oil and grease (mg/l)	10
Total suspended solids (TSS) (mg/l)	35
Coliform bacteria (Most probable number)/100 ml	400
Temperature	No increase greater than 3°C of ambient temperature at the edge of a scientifically established mixing zone

Reference: IFC 'General EHS Guidelines', 2007: Environmental, Section 1.3; Reference: EU Urban Wastewater Treatment Directive (1991) and UK Urban Waste Water Treatment Regulations (1995)
*Phosphorous and Nitrogen standards to be applied based on the results of a risk assessment to identify if the receiving environment is vulnerable to eutrophication and critical levels could be exceeded

1.7.2 Project Standards for the Discharge of Industrial Wastewater

Industrial wastewater refers to all process, industrial, hydrotest and stormwater (as defined in Sec 11). These standards apply at the point of discharge of industrial wastewater to surface water.

Table A-5 Project Standards for Discharge of Industrial Wastewater

Parameter	Proposed SCPX Standard
pH	6-9
BOD (5) (mg/l)	25
COD (mg/l)	125
Oil and grease: (mg/l)	10
Total hydrocarbon content (mg/l)	10
Phenols (mg/l)	0.5
Total suspended solids (TSS) (mg/l)	35
Sulphides (mg/l)	1
Chlorides (mg/l)	600 mg/l (average), 1200 mg/L (maximum) or change the salinity by no more than 5%
Temperature	Levels should be as low as practical and reflect the quality of the receiving waters Change the temperature of the receiving water by no more than 1°C, Upper temperature limit for a discharge is 40°C
Heavy metals (total) (mg/l)	5

Reference: IFC Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development (April 2007); UK Refining Sector Guidance Note EPR 1.02

1.7.3 Discharge to Land

Soakaways shall only be used for treated sanitary, stormwater or potentially hydrotest water discharges. Potential impacts on soil, groundwater and surface water shall be evaluated in all situations where effluent is discharged to land. For soakaways, the standards in Table A-

4 and Table A-5 shall apply where the effluent reaches the water. Ensuring the discharge has no more than a minor impact to water resources will require a two-phased investigation:

- In the first instance the capacity of the ground to physically accommodate the water flows will be investigated. Trial pits will be excavated and percolation tests will be undertaken of the surface strata at the site to establish their characteristics (porous versus fissured) in terms of capacity to accommodate the waste flows
- Secondly, a risk assessment will be undertaken to establish potential impacts to the nearest groundwater resource. The approach using analytical solutions similar to those recommended by UK Environment Agency (as in 1.8) shall be used.

1.7.4 Project Ambient Surface Water Quality Standards

Ambient water quality standards will be applied to surface waters which receive routine discharges i.e. treated sewage effluent, controlled wastewater discharges (from construction camps, stormwater drainage systems) and hydrotest water (Refer to Appendix D for the monitoring programme).

Table A-6: Project Ambient Water Quality Standards

Parameter	Unit	EQS Salmonid Waters	EQS Cyprinid Waters
pH		6-9	6-9
BOD (5)	mg/l	≤ 3	≤ 6
Total hydrocarbon content		Petroleum products must not be present in water in such quantities that they: - form a visible film on the surface of the water or form coatings on the beds of watercourses and lakes - impart a detectable "hydrocarbon" taste to fish - produce harmful effects in fish	
Phenols		Not present in concentrations that adversely affect fish flavour	
Total suspended solids (TSS)	mg/l	≤ 25	≤ 25
Nitrites (mg/l NO_2)	mg/l	≤ 0.01	≤ 0.03
Dissolved Cu Assuming water hardness of 100mg/l $CaCO_3$	mg/l	≤ 0.04	≤ 0.04
Zn mg/l (assuming water hardness of 100mg/l $CaCO_3$)	mg/l	≤ 0.3	≤ 1.0
Dissolved oxygen (mg/lO_2)	mg/l	50% of the time ≥ 9, 100% of the time ≥ 7	50% of the time ≥ 8, 100% of the time ≥ 5
Non-ionised ammonia mg/l NH_3	mg/l	≤ 0.005	≤ 0.005
Total ammonium (mg/l NH_4)	mg/l	≤ 0.04	≤ 0.2

Parameter	Unit	EQS Salmonid Waters	EQS Cyprinid Waters
Total residual chlorine (mg/l HOCl)	mg/l	≤ 0.005	≤ 0.005

*Derogations from this standard are possible if, for example, exceptional weather or natural enrichment occurs.
Note: Where existing water quality levels are identified as exceeding the above standards prior to project start-up (perhaps caused by non-project emissions sources) then the project may not be able to meet these standards owing to factors outside of the project's control. In these circumstances the project will consider the water quality levels and, taking into account the non-project factors affecting water quality, will take reasonably practicable steps to reduce the project's contribution to water emissions. The project will continue to comply with the above discharge standards in Table 1-4 and Table 1-5.
Reference: EU Freshwater Fish Directive (2006/44/EC) Salmonid Waters - waters which support or become capable of supporting fish belonging to species such as salmon, trout, grayling or whitefish. Cyprinid waters: waters that support or become capable of supporting fish belonging to the cyprinids or other species such as pike, perch and eel. Standards will be applied as applicable (depending on the range of species supported by a surface watercourse).

1.8 Project Clean-Up Standards

The project will apply a risk assessment approach to contaminated land management evaluate the potential impact of soil, surface water or groundwater contamination on local receptors. This will follow the methodology from the UK Environment Agency's approach as defined in:

- *Model Procedures for the Management of Contaminated Land* (CR11) (Environment Agency, 2004)
- 'Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination' (Environment Agency, 2006).

This is based on the source–pathway–receptor principle, which seeks to establish the linkages between the pollutants and the receptor, and whether harm to health or the environment is likely to occur. This approach does not specify defined clean-up standards as these depend on the land/water use and the presence of pathways to potential receptors.

This method follows a tiered approach to risk assessment, where the need for a further more detailed analysis is determined in the first tier and during subsequent risk assessment tiers the data requirements and the sophistication of the analysis increase, as does the confidence in the predicted impact.

If the risk assessment demonstrates that risk to health or the environment exists a remediation plan will be developed. This may include the development of remedial targets that can be based on information from a variety of sources which make include WHO guidelines, EU or UK standards and guidelines or other national standards and guidelines as appropriate.

APPENDIX C – AZERBAIJAN PERMIT REQUIREMENTS RELEVANT TO ENVIRONMENTAL AND SOCIAL MANAGEMENT

Permit required activity	Permit title	Issuing authority / interface party	Application requirements	Project phase	Responsibility
Construction of Pipeline and associated facilities and infrastructure	ESIA approval	MENR	ESIA	Pre-Construction	COMPANY
Land allotment for ROW	Decree, Obtain consent/opinion/terms	Cabinet of Ministers (CoM), Land owers/Users, Public Notaries	Decree for approval land allotment	Pre-construction	COMPANY
Land purchase for AGIs and ROW	Resolution, Obtain consent/opinion/terms	State Land and Cartography Committee (SLCC), District Authorities, State Committee of Republic of Azerbaijan on Property Issues, Public Notaries	Provision of Land data (maps/landowners list, landownership certificates, etc), Excom's heads resolutions for land acquisition	Pre-construction	COMPANY
Land acquisition for temporary and permanent facilities	Resolution, Obtain consent/opinion/terms	Land Owners/Users, District Authorities	Provision of Land data (maps/landowners list, landownership certificates, etc), Excom's heads resolutions for land acquisition	Pre-construction	CONTRACTOR
Major watercourse and irrigation canal crossings	ESIA and Obtain consent/opinion/terms	MENR, State Committee for Melioration and Water Resources, relevant Canal Authority	Project description, basis of design, technical note, detailed design	Pre-construction	CONTRACTOR
Works within 100m of the centreline of a canal	Permit	Relevant Canal authority eg Karabakh Canal Authority	Technical note	Pre-construction	CONTRACTOR
Road crossings, upgrades and construction of new roads	Approvals of Detailed Design, Witnessing and Acceptance upon Construction by Owners and interface parties	Ministry of Transport,AzerAvtoYol (Azebaijani Highway) State Concern, Traffic Police Headquarters	Project description, basis of design, technical note, detailed design	Pre-construction	CONTRACTOR
Railway crossings	Approvals of Detailed Design, Witnessing and Acceptance upon Construction by Owners and interface parties, Obtain consent/opinion/terms	Ministry of Transport (Rail Way department)	Project description, basis of design, technical note, detailed design	Pre-construction	CONTRACTOR
Other major under/above ground crossings	Approvals of Detailed Design, Witnessing and Acceptance upon	Azerbaijan International Operating Company	Project description, basis of design, technical note,	Pre-construction	CONTRACTOR

Permit required activity	Permit title	Issuing authority / interface party	Application requirements	Project phase	Responsibility
	Construction by Owners and interface parties, Obtain consent/opinion/terms	(AIOC), AzeriGas, TUCM (Telecom governmental cables organisation), AzEnergy, SOCAR, Ministry of Communications and Information Technology, TUCM	detailed design		
Outsize equipment movement	Obtain consent/opinion/terms	Traffic Police, AzEnergy	To be confirmed	Pre-construction / Construction	CONTRACTOR
Treated sewerage, hydro-test water etc. discharge into river, lake	Approval of Liquid Discharge into Surface Water Body	Ministry of Emergency Situations,Gosgortechnadzor - (GGTN), Ministry for Health, MENR, State Committee for Melioration and Water Resources, District Authorities	Technical report and projection of amounts and discharge limits.	Pre-Construction	COMPANY/ CONTRACTOR
Hydrotest program	Obtain consent/opinion/terms	Ministry of Emergency Situations, Gosgortechnadzor - (GGTN), Ministry for Health (Hygiene), MENR, State Committee for Melioration and Water Resources, District Authorities	Project description, basis of design, technical note, detailed design	Construction	CONTRACTOR
Facilities construction activities	Obtain consent/opinion/terms	Ministry of Justice, MES, GGTN, Fire brigade	Project description, basis of design, technical note, detailed design	Pre-construction	CONTRACTOR
Groundwater or surface water abstraction	Obtain consent/opinion/terms	MES, MENR	Project description, technical note	Pre-construction	CONTRACTOR
Welding	Obtain consent/opinion/terms	MES (GGTN)	To be confirmed	Pre-construction / Construction	CONTRACTOR
Lifting equipment	Obtain consent/opinion/terms	MES (GGTN)	To be confirmed	Pre-construction / Construction	CONTRACTOR
Import/Export, Transportation, Storage and Use of Dangerous goods	Obtain consent/opinion/terms	MES (GGTN), Ministry for Health (Hygiene), Customs, CoM	To be confirmed	Pre-construction / Construction	CONTRACTOR
Import/Export of special kinds of Medicine	Obtain consent/opinion/terms	Ministry for Health, State Customs Committee	To be confirmed	Pre-construction / Construction	CONTRACTOR

Permit required activity	Permit title	Issuing authority / interface party	Application requirements	Project phase	Responsibility
Country cross transportation – people material and equipment to/from Georgia	Obtain consent/opinion/terms	Border Guard Headquarters, State Customs Committee	To be confirmed	Construction	CONTRACTOR
Air transportation of people and cargo	Obtain consent/opinion/terms	Azerbaijan Airlines (AzAL)	To be confirmed	Pre-construction/ Construction	CONTRACTOR
Munitions clearance within ROW	Obtain consent/opinion/terms	Ministry of Defence, Anama	To be confirmed	Pre-construction	CONTRACTOR
Archaeological pre-digs	Obtain consent/opinion/terms	Ministry of Culture and Tourism, Institute of Archaeology	Project description, scope of work, method statement	Pre-construction	CONTRACTOR
Tree cutting/removal (protected trees, Forest fund trees)	Obtain consent/opinion/terms	District authorities, MENR	Project description, technical note, offsetting and replacement locations	Construction	CONTRACTOR
Communications/frequency use	Obtain consent/opinion/terms	Ministry of Communications and Information Technology	To be confirmed	Pre-construction	CONTRACTOR
Waste incineration, treatment and disposal	Obtain consent/opinion/terms	MENR, Municipalities, Ministry of Health	To be confirmed	Pre-construction	COMPANY
Sewerage Treatment Plant/proposals to discharge	Obtain consent/opinion/terms	MENR, Azersu State Company	Project description, basis of design, technical note, detailed design, discharge requirements and conformance to project standards	Pre-construction	CONTRACTOR
Construction material extraction from borrow/spoil pits	Mineral Extraction permit	MENR	Extraction Project details and payment for minerals	Construction	CONTRACTOR
Aerial or High definition aerial photography	Obtain consent/opinion/terms	Ministry of Defence	Technical note with Route description	Pre-construction	CONTRACTOR
Emergency response measures for gas leak or emission	Emergency Response Plan Approval	MENR, SOCAR, MES	Emergency Response Plan.	Operations	COMPANY
Examinations by state authorities in the order of control during construction works	Inspections are part of consents/terms and conditions	Labour Inspection - Ministry of Economic Development, MENR, State Supervision Agency for Construction Safety and Fire Control Service of MES	N/A	Construction	CONTRACTOR / COMPANY
Documents will be translated into English and Azerbaijani languages					

APPENDIX D – ENVIRONMENTAL AND SOCIAL REPORTING AND MONITORING REQUIREMENTS

Table D1: SCPX Environmental and Social Reporting Requirements

	Measure	Type	Target	Comment	Responsible Party
M1	Conformance with CONTRACTOR audit schedule as agreed with the COMPANY i.e. % audits completed versus planned	KPI	100%		CONTRACTOR
M2	Cumulative no. of NCRs Open	KPI	0		CONTRACTOR
R1	Number of non-conformances with the specified erosion performance class	KPI	0		CONTRACTOR
R2	% of ROW sections (section to be defined by the COMPANY) not obtaining ≥ 20% revegetation cover after 6 monthly monitoring period	Measure			CONTRACTOR
R3	Number of non-conformances related to topsoil and sub-soil management	KPI	0		CONTRACTOR
E1	% survival of translocated plants	KPI	85%		ECOLOGICAL MANAGEMENT CONTRACTOR
W1	Proportion of waste segregated for re-use and recycling as a percentage of total waste	Measure			CONTRACTOR
W2	Volume of waste reused vs. recycled vs. landfilled	KPI	40%	To be agreed between COMPANY and CONTRACTOR	CONTRACTOR
W3	Number of non-conformances related to waste storage and segregation	KPI	0		CONTRACTOR
W4	Number of non-conformances related to waste management plan	KPI	0		CONTRACTOR
P1	Number of oil/diesel spills (unplanned)	Measure	0		CONTRACTOR
P2	Number of oil/diesel spills to surface water (unplanned)	KPI	0		CONTRACTOR
P3	Monitoring programme (Actual vs. planned completion)	KPI	100%		CONTRACTOR
P4	Proportion of emissions and discharge monitoring results in accordance with the Project environmental and social standards	KPI	95%		CONTRACTOR
C5	The kWh of electric power used, and the source (e.g. grid, local generator)	Measure	N/A		CONTRACTOR
C6	The litres of fuel consumed to run vehicles and equipment	Measure	N/A		CONTRACTOR
I1	Roads upgraded (km)	Measure			CONTRACTOR
I2	$ value of Good will projects (excluding I1)	Measure			CONTRACTOR
G1	Number of complaints received (overall broken down into complaint categories, e.g. noise, dust, damage to roads, river crossings, buildings, water supply and power supply etc.	Measure	N/A		CONTRACTOR
G2	Speed of response to complaints (% of complaints responded to within days)	KPI	100%		CONTRACTOR

	Measure	Type	Target	Comment	Responsible Party
G3	Speed of complaint resolution (% of complaints resolved in less than 30 days)	KPI	100%		CONTRACTOR
G4	Days lost due to community disturbance (number of days).	KPI	0		CONTRACTOR
S1	The number of community members harmed by Project vehicles or by incidents (for example incidents involving property, livestock, crops, infrastructure etc.)	KPI	0		CONTRACTOR
S2	Health and Safety awareness meetings held with community raising (actual vs. planned)	Measure	%		CONTRACTOR
Re1	Employment of local labour as percentages of total labour against agreed targets	KPI	As agreed	To be agreed between COMPANY and CONTRACTOR	CONTRACTOR
Re2	E&S Training delivered in accordance with planned training activities	KPI	95%		CONTRACTOR
Pr1	Value of materials and services purchased in country	Measure			CONTRACTOR
L1	Number of claims / grievances for encroachment or use on unapproved land	KPI	0		CONTRACTOR
CH1	No. NCRs related to damage to sites or artefacts from ground disturbance	KPI	0		CONTRACTOR
CH2	No. chance finds reported	Measure	N/A		CONTRACTOR

Table D2: SCPX Environmental Monitoring Requirements

Topic / Identifier	Responsible Party	Activity / Issue	Location	Frequency	Parameters / Units	Monitoring Methodology	Comments
Water							
1	CONTRACTOR	Discharges of effluent from Sewage Treatment Plant(s) (sanitary)	After final treatment, prior to any mixing or co-mingling with other effluent streams	Weekly	pH BOD (5) (mg/L) COD (mg/L) Total Nitrogen (mg/L) Total Phosphorous (mg/L) Oil and grease (mg/L) Total Suspended Solids (TSS) (mg/L) Coliform bacteria (MPN/100 ml) Temperature Visual Monitoring of Grease Trap	Recognised methodologies available in COMPANY-approved laboratories in Azerbaijan and Georgia	Operational monitoring of STP may be undertaken using field equipment.
2	CONTRACTOR	Oily water separators	After final treatment, prior to any mixing or co-mingling with other effluent streams	Monthly	pH BOD (5) (mg/L) COD (mg/L) Total Hydrocarbon Content (mg/L) Phenols (mg/L) Total Suspended Solids (TSS) (mg/L) Sulphides (mg/L) Chlorides (mg/L) Temperature Heavy metals (total) (mg/L) (includes Ag, As, Cd, Cr, Cu, Pb, Hg, Ni, V, Zn)	Recognised methodologies available in COMPANY-approved laboratories in Azerbaijan and Georgia	To meet IFC guidelines and discharge of 10mg/l oil and grease
3	CONTRACTOR	Ambient Water Quality - Surface Waters subject to	100 m upstream and 100m downstream of	Monthly for continuous discharges; at	pH BOD (5) (mg/l) Total Hydrocarbon	Recognised methodologies available in	Petroleum products must not be present in water in such quantities that they form a

Topic / Identifier	Responsible Party	Activity / Issue	Location	Frequency	Parameters / Units	Monitoring Methodology	Comments
		discharges of treated sewage effluent, controlled wastewater discharges (from construction camps, stormwater drainage systems)	discharge locations	least once prior to any discharge; and for non-continuous discharges at least once during the discharge and no less than one sample per month.	Content (mg/l) Phenols (mg/l) Total Suspended Solids (TSS):mg/l Nitrites (mg/l NO2) Dissolved Cu (mg/l) Zn mg/l Dissolved Oxygen (mg/lO2) Non -ionised ammonia (mg/l NH3) Total ammonium (mg/l NH4) Total residual chlorine(mg/l)	COMPANY-approved laboratories in Azerbaijan and Georgia	visible film on the surface of the water or form coatings on the beds of water-courses and lakes
4	CONTRACTOR	Hydrostatic Test Water	At end of pipe/treatment (specific details of locations to be proposed by contractor with each hydrotest pack) Discharge subject to the review and approval by COMPANY ALSO: At least 100 m upstream 100 m downstream and various other distances, if required, downstream of	Prior to and during discharge - specific details of frequency, location to be proposed by contractor with each hydrotest pack. Discharge subject to the review and approval by COMPANY	pH BOD (5) (mg/L) COD (mg/L) Total Hydrocarbon Content (mg/L) Phenols (mg/L) Total Suspended Solids (TSS) (mg/L) Sulphides (mg/L) Chlorides (mg/L) Temperature, Fe (mg/L) Heavy metals (total) (mg/L) (includes Ag, As, Cd, Cr, Cu, Pb, Hg, Ni, V, Zn)	Recognised methodologies available in COMPANY-approved laboratories in Azerbaijan and Georgia	Field analysis shall also include: Temperature, pH, DO, TSS/turbidity (for indication), oil and grease, colour, odour, visible oil and grease and conductivity

Topic / Identifier	Responsible Party	Activity / Issue	Location	Frequency	Parameters / Units	Monitoring Methodology	Comments
			discharge locations for ambient standards.				
5	CONTRACTOR	Concrete batching plant wastewater - if discharged	At project-developed and operated concrete batching plants	Monthly	pH Total Suspended Solids (TSS) (mg/L) Heavy metals (total) (mg/L) (includes Ag, As, Cd, Cr, Cu, Pb, Hg, Ni, V, Zn)* Oil and Grease		
6	CONTRACTOR	Abstraction Wells	The abstraction borehole, when completed, will be test pumped and environmental parameters will be monitored	Test pump before abstraction occurs Contamination - monitoring prior to abstraction and every 6 months during operation of well	Test Pump to determine recharge rate and sustainable abstraction volumes Contamination -: pH, Conductivity, DO, Turbidity, TSS, Total Coliform and E-Coli, BOD5, COD, TPH (Speciated); PAHs, Heavy Metals, VOCs		Commitment 15-04, X6-01
7	CONTRACTOR	Discharges with excess of sediments (Trenchwater, hydrotest water, run-off from open sites)	At discharge point and 200m downstream	During discharge	Sediment content - Turbidity	Visual and Field Testing	

Topic / Identifier	Responsible Party	Activity / Issue	Location	Frequency	Parameters / Units	Monitoring Methodology	Comments
Air							
1	CONTRACTOR	Effectiveness of dust suppression	Work areas, access roads	Visually daily	Visual ID of dusty conditions	Visual	
2	CONTRACTOR	Effectiveness of vehicle and equipment maintenance programme	Work areas, access roads	Visual	Visual ID of black emissions Valid Project-issued Technical certificate	Visual	
3	CONTRACTOR	Stack Emissions from Camp Generators	Construction Camps	At start-up and thereafter quarterly	• Nitrogen oxides (NOx), • Carbon monoxide (CO) • Sulphur dioxide (SO2) • Particulate matter (PM) • Methane (CH4) • Carbon dioxide (CO2)	Emissions calculated using emissions rates, agreed with COMPANY.	No stack emissions standards however, if generator has rated MWth input capacity >3MWth, CONTRACTOR shall carry out stack emissions testing to demonstrate conformance with the applicable standards in IFC EHS Guidelines, General, 2007 Table 1.1.2 - Small Combustion Facilities Emissions Guidelines.
4	COMPANY	Ambient Air Quality Monitoring	Construction Camps (Boundary Fence and nearest receptors up and down prevailing wind direction)	Pre-construction and during construction	• Quarterly	Diffusion tube methodology following ISO/BS Standards, at COMPANY approved laboratory	
Noise							
1	CONTRACTOR	Camp / Pipe Yard/Batching Plant (Temporary	Construction Camp Batching Plant	Prior to facility start up; Monthly during facility	dB(A); $L_{Amax, fast}$ (Day and Night time Monitoring) to allow	Actual noise measurements in accordance with	

Topic / Identifier	Responsible Party	Activity / Issue	Location	Frequency	Parameters / Units	Monitoring Methodology	Comments
		Facilities)		operation; during any abnormal operations; on receipt of complaints	comparison against project environmental standards	BS7445-2; Calibrated meters in accordance with BS EN 61672-1; BS EN 61260; BS60942.	
2	CONTRACTOR	Construction / Commission Noise related to activities	Work areas; Facility Construction Sites; ROW Tunnelling Activities	At least once during the activity if longer than one month; on receipt of complaints	dB(A); $L_{Amax, fast}$ (Day and Night time Monitoring) to allow comparison against project environmental standards	Actual noise measurements in accordance with BS7445-2:1991; Calibrated meters in accordance with BS EN 61672-1; BS EN 61260; BS60942.	
Vibration							
1	CONTRACTOR	Construction Vibration	Representative Locations, including villages	At least once during the activity at representative locations and sufficient to predict vibration levels based on different vehicle/activity types	mms^{-1} (ppv)	In accordance with guidance in BS5228-2 (2009).	
Erosion and Sedimentation Control							
1	CONTRACTOR	Erosion detection and treatment	Areas cleared and graded	Weekly, and before predictable major storms and after heavy rain and storms	Areas of possible erosion	To be proposed by Contractor, subject to review and approval by COMPANY	
2	CONTRACTOR	River	All river crossings	Weekly	Visual monitoring of	Visual and probe -	Contractor shall ensure that

Topic / Identifier	Responsible Party	Activity / Issue	Location	Frequency	Parameters / Units	Monitoring Methodology	Comments
		sedimentation			suspended sedimentation	evidence of plumes	sedimentation control works at river crossings are effective and that sediment is not visible in the river water
Soil							
1	CONTRACTOR	Oil / Chemical Spills	At Oil spill locations	As required per incident	(1) Reported number/cases of spills/leakages (2) Number of times spill kits (oil absorbers, grab packs & granules) put to use (3) Analysis of soil for contaminants: Heavy metals, TPH, VOC, SVOC (other as relevant depending on type of spill)	Model Procedures for the Management of Contaminated Land (CR11) (DEFRA and the Environment Agency, 2004) Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination (Environment Agency, 2006).	
Pollution Prevention							
1	All Contractors	Integrity of fuel / chemical containment systems	Fuel and Chemical Storage Areas Work areas	Monthly	Visual	Visual inspection for: (a) holes or overflow from primary containment (b) breaches in secondary containment c)no secondary containment	

Topic / Identifier	Responsible Party	Activity / Issue	Location	Frequency	Parameters / Units	Monitoring Methodology	Comments
Reinstatement							
1	CONTRACTOR	Topsoil Preservation	Topsoil storage areas	Monthly	Visual observation of : (1) Stockpile area segregated from site (2) Height of stockpile (2 -3m) (3) Slope of stockpile (<45 degrees slope) Aerobic conditions will be monitored if topsoil stored for more than 6 months. Manual aeration will be undertaken if anaerobic conditions develop	Visual To be proposed by Contractor and approved by Company	
2	CONTRACTOR	Subsoil Reinstatement	ROW and Temporary Areas	Once during reinstatement activity; at least every 100m	% compaction relative to undisturbed areas	Cone penetrometer	
Waste							
1	CONTRACTOR	Waste Storage; Segregation; Handling and Transport	ROW; Facility Construction Sites; Temporary Areas; Construction Camp WSA, CWAA; Waste disposal locations; Waste Processing Centres	Weekly Inspections; Monthly waste audits	Segregation practices; waste documentation including tracking notes; round trip transport; WSA management; training; Contractor performance	Visual	

Topic / Identifier	Responsible Party	Activity / Issue	Location	Frequency	Parameters / Units	Monitoring Methodology	Comments
Employment							
1	CONTRACTOR	Recruitment Procedures; Local Content	N/A	Monthly	Local content figures; Employment records; Interviews with employees	N/A	

APPENDIX E – PRE-CONSTRUCTION SURVEYS AND ACTIVITIES

Table E1: SCPX Pre-construction surveys and activities

SCPX Issue	SCPX Ref.	Primary Topic	Responsible Party	SCPX COMMITMENT (MITIGATION MEASURE)
A1	1-05	Geology & Geomorphology	CONTRACTOR	Environmental audits will be undertaken at any proposed third-party borrow pits and/or spoil disposal pits before they are used. Periodic audits will be undertaken thereafter as considered appropriate by the Company.
A3	4-12	Soil & Ground Conditions	CONTRACTOR	The construction contractor(s) will produce method statements incorporating plans for erosion control, sediment control and reinstatement before work begins at river crossings.
A4	4-15	Soil & Ground Conditions	CONTRACTOR	A soil survey will be undertaken (based on a representative sample) prior to construction to measure the depth of the topsoil layer along the SCPX route and will be used to determine the depth of topsoil stripping.
A4	4-22	Soil & Ground Conditions	CONTRACTOR	A soil survey of camp sites and pipe storage areas that are identified will be undertaken.
A6	6-01	Soil & Ground Conditions	CONTRACTOR	A baseline survey of visible contamination has been carried out and will be repeated before construction begins to include camp and pipe storage areas.
A6	6-02	Soil & Ground Conditions	CONTRACTOR	All known areas of surface contamination (within the project footprint) will be cleared before construction begins.
A1	9-02	Soil & Ground Conditions	CONTRACTOR	All potential subsoil disposal sites and disposal plans will be subject to an environmental and social review prior to their adoption
A11	11-01	Surface Water	CONTRACTOR	Construction of the surface water crossings will seek to ensure minimal impacts from interrupting river flow by identifying downstream users and determining their river water supply needs.
A11	11-03	Surface Water	CONTRACTOR	If temporary damming is required, a pre-construction engineering, social and environmental review will be undertaken with the aim of planning the work to minimise the duration of the flow interruption and determining the need for pump around to maintain flows.
A13	13-05	Surface water	CONTRACTOR	The Contractor will undertake a flood risk assessment of any major open cut watercourse crossings that are planned to be constructed between April-June inclusive. This will identify potential environmental, social and health and safety impacts if flooding should occur and propose contingency plans with the aim of reducing any potential risks and impacts.
A15	15-01	Infrastructure & Services	CONTRACTOR	All necessary permits/consents to drill and abstract groundwater will be obtained before water is abstracted for construction or domestic use. Groundwater will not be used for pipeline hydrotesting.
A15	15-03	Surface Water	CONTRACTOR	River flow will be assessed before and during abstraction; abstraction rates will be set taking into account information that the contractor shall acquire about downstream users.

SCPX Issue	SCPX Ref.	Primary Topic	Responsible Party	SCPX COMMITMENT (MITIGATION MEASURE)
A15	15-04	Groundwater	CONTRACTOR	The abstraction borehole, when completed, will be test pumped and a sustainable yield will be determined together with aquifer characteristics such as hydraulic conductivity and radius of influence.
A15	15-09	Groundwater	CONTRACTOR	If groundwater is extracted for Project use, from either new or existing boreholes at temporary facilities, the water quality and sustainability will be monitored to confirm that the supply meets Project standards and does not impact adversely on other users.
A17	17-14	Landscape	CONTRACTOR	A record will be made of the condition of access roads, construction camps, laydown areas and rail offloading areas and any special features on the RoW before construction to inform the reinstatement works.
A17	17-18	Ecology	ECOLOGICAL MANAGEMENT CONTRACTOR	A pre-construction survey between April and May inclusive will be undertaken at pipe storage and camp locations and any nearby watercourses that may be impacted, to assess the value of the plants and animals present on site and identify any need for site-specific mitigation measures.
A18	18-05	Ecology	CONTRACTOR	The Contractor shall inspect and wash if required, all plant and equipment prior to shipping to the country of use, with the aim of ensuring as far as practicable,it is free from soil and plant material.
A19	19-07	Community Health & Safety	COMPANY/ CONTRACTOR /ECOLOGICAL MANAGEMENT CONTRACTOR	All drivers will undergo safety and environmental and social awareness training; driving performance will be assessed and monitored with additional training provided if necessary.
A19	19-10	Ecology	ECOLOGICAL MANAGEMENT CONTRACTOR	The Company will prepare Site specific Ecological management Plans for priority areas. CONTRACTOR will incorporate the requirements of the plans into the site specific method statements.
A19	19-11a	Ecology	ECOLOGICAL MANAGEMENT CONTRACTOR	The Company will check the ROW and any other working area immediately prior to vegetation cutting and topsoil stripping to identify any IUCN Red List or Azerbaijan Red Data Book species.
A19	19-11b	Ecology	ECOLOGICAL MANAGEMENT CONTRACTOR	If any IUCN Red List or Azerbaijan Red Data Book species are found on the ROW or other working area outside of the breeding (July to September inclusive), they will be moved a safe distance away from the ROW and released into suitable habitat in accordance with the methods in the Site specific ecological management plans.
A19	19-11c	Ecology	ECOLOGICAL MANAGEMENT CONTRACTOR	If any IUCN Red List or Azerbaijan Red Data Book species are found hibernating on the ROW or other working area during the hibernating season (October to March inclusive) they will be moved to a new hibernating site a safe distance from the ROW in accordance with the methods in the Site specific ecological management plans.

SCPX Issue	SCPX Ref.	Primary Topic	Responsible Party	SCPX COMMITMENT (MITIGATION MEASURE)
A19	19-11d	Ecology	ECOLOGICAL MANAGEMENT CONTRACTOR	If any IUCN Red List or Azerbaijan Red Data Book species are found actively nesting on the ROW or other working area they will be left undisturbed until breeding has been completed and the young have moved away from the nest. Any deviations will be subject to Company approval.
A19	19-12a	Ecology	ECOLOGICAL MANAGEMENT CONTRACTOR	The actual location and extent of cultivated and un-cultivated land on the ROW and working areas will be determined during a pre-construction survey. The survey will be completed in the year prior to construction.
A19	19-12b	Ecology	CONTRACTOR	The vegetation in areas of uncultivated land where topsoil stripping will occur between April and July (inclusive) will be cut close to ground level in the period between August and March prior to stripping, to discourage animals from nesting here.
A19	19.13a	Ecology	ECOLOGICAL MANAGEMENT CONTRACTOR	A survey will be completed for bank nesting fauna on river crossings programmed to be constructed in April-July (inclusive). The survey will be undertaken between April and September in the year prior to construction. It will search in particular for IUCN and RDB species, which may include: Otter (*Lutra lutra*), European Marbled Polecat (*Vormela peregusna*), Ladder Snake (*Elaphe hohenackeri*), Crested Porcupine (*Hystrix indica*) and hole-nesting birds.
A19	19-13b	Ecology	ECOLOGICAL MANAGEMENT CONTRACTOR	If any bank-nesting IUCN or RDB species are found in pre-construction surveys of these watercourses, measures will be taken to aim to prevent inhabitation of the area during construction.
A19	19-14	Ecology	ECOLOGICAL MANAGEMENT CONTRACTOR	All open-cut or watercourse crossings or vehicle crossings constructed between April to July (inclusive) will be checked by the Company for amphibian spawn of suspected red data book species, and if any is found it will be moved to a suitable location upstream.
A24	24-05	Air Quality	COMPANY	Community Liaison Officers will identify any beekeepers whose hives are within 300m of the pipeline or an access route before the start of the honey production season. These beekeepers will be asked to move their hives (both mobile hives and stationary hives) a suitable distance (at least 300 metres) from the route for the season.
A24	24-12	Air Quality	CONTRACTOR	The distances from the nearest dwellings to temporary working areas will be determined and commitment X8-04 implemented if any dwellings are close enough for there to be medium or high predicted impacts from dust during construction.
A25	25-13	Vibration	CONTRACTOR	Vibration sensitive locations will be determined by the Contractor and listed in their Pollution Prevention Implementation Plan, together with details for monitoring vibration before and during movement of heavy equipment. Further actions will depend on the outcome of vibration monitoring.

SCPX Issue	SCPX Ref.	Primary Topic	Responsible Party	SCPX COMMITMENT (MITIGATION MEASURE)
A26	25-14	Vibration	CONTRACTOR	A survey will be undertaken to record the external condition of buildings in close proximity to the ROW or access roads prior to construction; this will provide baseline evidence in the event of claims for damage.
A25	25-20	Noise	CONTRACTOR	The distances from the nearest dwellings to temporary working areas will be determined and commitments 25.09, X9.03 and X9.04 implemented where dwellings are close enough for there to be medium or high predicted impacts from noise during construction.
A27	27-01	Cultural Heritage	COMPANY and CONTRACTOR	A Cultural Heritage Management Plan will be implemented that includes the five-phase strategy for the progressive assessment and mitigation of the effects of construction.
A27	27-02	Cultural Heritage	COMPANY	Areas of potential cultural heritage impact will be examined and any necessary excavations conducted prior to construction.
A27	27-04	Cultural Heritage	COMPANY	Pre-construction works to evaluate and record known archaeological sites will be agreed with the Ministry of Culture.
A28	28-07	Economy, Employment, Skills & Livelihoods	CONTRACTOR	Clear job descriptions will be provided in advance of recruitment and will explain the skills required for each post.
A28	28-08	Economy, Employment, Skills & Livelihoods	COMPANY and CONTRACTOR	Community Liaison Officers will monitor that PACs are given priority in recruitment and that recruitment is non-discriminatory in terms of PACs and ethnicity.
A29	29-03	Economy, Employment, Skills & Livelihoods	CONTRACTOR and COMPANY	Taking into account relevant commercial considerations as appropriate, the project will seek to purchase goods and services from within Azerbaijan and will monitor such purchases
A30	30-08	Community Health & Safety	CONTRACTOR	Community Liaison Officers (CLOs) appointed by the Contractor will participate in, or deliver safety awareness training to, local children and their parents and/or their teachers.
A30	30-23	Community Health & Safety	CONTRACTOR	The ROW of the SCPX pipeline and any additional temporary workspaces will be surveyed and set out (i.e. marked out and, where necessary, fenced off). The contractor will be required to keep within the designated footprint.
A30	31-02	Community Health & Safety	CONTRACTOR	Risk assessments will be carried out to identify sensitive receptors such as hospitals and clinics along Project access routes. The project will ensure that access to and from these facilities is not restricted by Project activities or an alternative access is in place and has been agreed with the hospital or clinic staff.
A32	32-01	Land Ownership & Use	COMPANY and CONTRACTOR	The project will consult with local government authorities, landowners and land users, including grazers, before restricting access to land and will establish the need for temporary fencing.

SCPX Issue	SCPX Ref.	Primary Topic	Responsible Party	SCPX COMMITMENT (MITIGATION MEASURE)
A32	32-04	Land Ownership & Use	CONTRACTOR	The Project will provide a substitute for watering holes used by livestock that cannot be used due to Project-related actions. The substitute will be of a type, and in a location, to be agreed with representatives of the livestock owners and herders.
A32	32-05	Land Ownership & Use	CONTRACTOR and COMPANY	The Company Land Acquisition Team, environmental representative and the construction contractors will carry out an exit inspection with the previous land owner/user of all land that was used during the construction period.
A32	32-07	Land Ownership & Use	COMPANY and CONTRACTOR	The project will inform land owners/users about any reuse restrictions that apply to land used by the project.
A32	32-17	Land Ownership & Use	COMPANY and CONTRACTOR	The Project will seek to identify whether any herders use the construction areas and aim to consult with them on potential restrictions during construction.
A33	33-03	Economy, Employment, Skills & Livelihoods	COMPANY and CONTRACTOR	The community liaison teams will maintain regular liaison with local communities before, during and after construction.
A33	33-04	Economy, Employment, Skills & Livelihoods	CONTRACTOR	An employee Code of Conduct will be prepared and issued to all recruits and camp residents during the employee induction process.
A32	33-19	Land Ownership & Use	CONTRACTOR	Land users and local communities will be consulted to determine their requirements for access across the ROW.
A35	35-01	Infrastructure & Services	CONTRACTOR	Contractor will prepare a Method Statement that includes measures to protect the integrity of the third-party services and is acceptable to the service operator.
A35	35-03	Infrastructure & Services	CONTRACTOR	Any planned diversion of services will be communicated to local authorities and affected communities at least 72 hours in advance of the works
A35	35-05	Infrastructure & Services	CONTRACTOR	Surveys of irrigation and drainage systems will be undertaken before construction to determine their location and condition.
A35	35-09	Infrastructure & Services	CONTRACTOR	Pre-entry agreements including reinstatement requirements will be agreed prior to work affecting third-party assets.
A37	37-17	Traffic & Transport	CONTRACTOR	The Project will undertake a road condition survey before construction begins in areas as defined by Project.
A37	37-20	Traffic & Transport	CONTRACTOR	Prior to selection, all access routes will be subject to a multidisciplinary assessment.
A37	X16-01	Traffic & Transport	CONTRACTOR	At Agstafa Camp Option 3, passing places will be constructed along the access road.
A37	X16-03	Traffic & Transport	CONTRACTOR	At Saloghlu Rail Spur and Offloading Area, the existing access will be widened or an alternative access provided for existing users.

SCPX Issue	SCPX Ref.	Primary Topic	Responsible Party	SCPX COMMITMENT (MITIGATION MEASURE)
A32	39-01	Land Ownership & Use	CONTRACTOR	The relevant authorities will be consulted if the need for any additional land take is identified and the relevant permits and consents will be obtained.
A32	41-02	Land Ownership & Use	CONTRACTOR	Site assessments (taking into consideration ecology, cultural heritage, social, erosion risk, water resources) will be undertaken if the need for additional land is identified following submission of the ESIA.
A32	39-03	Land Ownership & Use	CONTRACTOR	An environmental and social assessment report will be prepared by the Project if any additional land outside that described in the ESIA is to be used, the scale of which will depend on the proposed activities and sensitivities of the area.
A17	D5-045	Ecology	CONTRACTOR	Existing third-party services and sensitive receptors that need to be avoided during construction (e.g. cultural heritage sites, or specific trees that are to be retained) will be marked.
A23	D12-06	Surface water	COMPANY	Each major river crossing will have a site-specific design which will be set to account for the maximum flow rates (1:200 year storm event), sediment movement patterns, anticipated changes to the river bed contour and the predicted extent of lateral erosion.
A8	8-05	Ecology	CONTRACTOR/ ECOLOGICAL MANAGEMENT CONTRACTOR	The necessary permit from the MENR will be applied for to cut down the any Forest fund trees on the ROW or temporary working areas. The location of the Forest fund areas will be confirmed by MENR consultation
A30	X5-17	Surface water	COMPANY	Site-specific crossing designs for open-cut watercourse crossings will be prepared that will specify the depth of installation and set back distance, based on a hydrological assessment of the river, and will consider the need for protection works to protect the integrity of the pipe.
A8	X5-19	Surface water	COMPANY	The Company will determine whether the water abstraction at the Hasansu is still in existence and if so, will consider if there are potential impacts and agree if mitigation measures are required.
A17	X7-21a	Ecology	ECOLOGICAL MANAGEMENT CONTRACTOR	If artificial bank or bed reinforcement is required at the Kurekchay, Ganjachay, Goshgarachay, Zeyamchay, Asrikchay, Tovuzchay, Hasansu or Kurudere, an assessment of the potential impacts (including habitat connectivity) and identification of any necessary mitigation measures will be undertaken by the Contractor.
A19	X7-23	Ecology	ECOLOGICAL MANAGEMENT CONTRACTOR	A Site specific ecological management plan to address Iris camillae on the ROW will be developed. This will be completed when the plants are visible i.e. during or after the flowering season between April and May
A17	X7-28a	Ecology	ECOLOGICAL MANAGEMENT CONTRACTOR	Preconstruction surveys will be carried out by the Company at the most appropriate time of year (generally April-May depending on seasonality) and will be undertaken at the defined locations to seek to establish the presence of any RDB plant species.

SCPX Issue	SCPX Ref.	Primary Topic	Responsible Party	SCPX COMMITMENT (MITIGATION MEASURE)
A17	X7-28b	Ecology	CONTRACTOR	A Site specific ecological management plan to address RDB plants are identified on the ROW or working areas during pre-construction surveys will be developed. This will be undertaken when the plants are visible i.e. during or after the flowering season between April and July, depending on the species.
A17	X7-32	Ecology	ECOLOGICAL MANAGEMENT CONTRACTOR	A preconstruction survey (in April or May depending on seasonality) will be carried out by the Company and will seek to identify the presence of *Iris acutiloba* KP0 - KP35 and a Site specific ecological management plan will be developed. This will be completed when the plants are visible i.e. during or after the flowering season between April and May.
A17	X7-33a	Ecology	ECOLOGICAL MANAGEMENT CONTRACTOR	Between KP321 - KP 322.9, KP335.4 - KP336.48, KP342 - KP346, KP346.1 - KP351, KP359 - KP370 and KP383 - KP390, seed will be collected from similar habitats where and to the extent feasible in the local area and re-sown onto the ROW during reinstatement.
A17	X7-37	Ecology	ECOLOGICAL MANAGEMENT CONTRACTOR	A preconstruction survey between November and February inclusive will be undertaken at KP205-250 to identify any need for site-specific mitigation measures to reduce potential impact to gazelle during winter migration.
A25	X9-03	Noise	CONTRACTOR	Site layout will be designed, where practical and feasible, to locate noisy plant in areas further away from houses at the BVR at KP172 and camps and pipe storage areas where a risk assessment shows that there may be significant noise impacts on sensitive receptors.
A25	X9-04	Noise	CONTRACTOR	An assessment and a baseline noise survey will be undertaken prior to construction at any camp and pipe storage areas located within 450m of dwellings, or other sensitive receptors such as schools or hospitals, and at locations where the proposed SCPX route passes in close proximity to dwellings (KP62.2, KP104-KP108, KP116-KP120, KP121-KP125, KP287-KP289); and at the BVRs at KP21 and KP172.
A25	X9-05	Noise	CONTRACTOR	A new access road will be created away from existing houses and occupied residences.

APPENDIX F – TIME CONSTRAINED ECOLOGICAL COMMITMENTS

The preliminary seasonal sensitivity table has been prepared on the basis of the results of the ecological surveys undertaken as part of the ESIA process. The tables provide an indication of the constraints and required actions that will govern the construction of the SCPX Pipeline; for the purposes of the table the following categories of response have been defined:

	Actions or activities that cannot be completed at this time
	Optimal period for actions or activities that need to be completed at this time

In each instance the response is qualified or expanded by the accompanying mitigation. The responses, constraints and measures indicated in the table are requirements that seek to mitigate the specific sensitivities associated with ecological seasonality.

In many cases, pre-construction ecological surveys will be required prior to the finalisation of the contractors work method statements and programmes. The surveys will be designed to improve understanding of the ecological resources and dynamics within, and in the vicinity of, the pipeline Right of Way (RoW) and to provide the basis for determining an appropriate course of action. In some cases, the surveys will establish the need to schedule construction activities outside key sensitive periods, in others, a range of options may be available, from narrowing of the RoW to the clearance of vegetation outside of the breeding season of species. There may also be instances in which the surveys indicate that seasonal sensitive activities are not occurring within the RoW; under such circumstances no further action would be required in respect to this specific issue.

It should be noted that the pre-construction surveys are, in themselves, constrained by seasonal considerations. Botanical surveys, for example, are generally most effective if undertaken during spring or early summer, when the flowering of plants facilitates species identification. Each of the proposed survey programmes and scopes will be reviewed by COMPANY prior to the onset of the surveys.

In managing the ecological implications of the SCPX Project a number of key principles need to be accommodated.

Firstly, the country-specific ecology of individual species (including breeding seasons, hibernation patterns, etc) may not be fully understood and has not been the subject of significant ecological research. The management of this uncertainty will represent a key challenge during the pre-construction and construction stages of the Project.

Secondly, the ecological surveys undertaken as part of the ESIA process have been designed to develop an understanding of the species and habitats that are encountered along the pipeline route and to develop a strategy for mitigating potential impacts to key resources. At key locations, more detailed pre-construction surveys will supplement the high level surveys undertaken during the ESIA. As such, the findings of the pre-construction surveys will inform a range of decisions that will need to be taken during the early phases of the construction programme roll out. It is critical, therefore, that appropriate expertise is mobilised in undertaking the surveys and developing effective and practicable mitigation.

Thirdly, as ecological considerations are a key influence upon the construction of the pipeline, it is anticipated that ongoing ecological advice will be required during the construction phase, particularly within ecologically sensitive sections of the route. The CONTRACTOR will be required to ensure that the available advice informs on-site decision-

making and issue resolution and to demonstrate that appropriate response have been pursued to mitigate impacts to ecological resources. The mechanisms by which ecological issues are integrated into the day-to-day management of the construction process shall be clearly defined within the CONTRACTOR's Ecological Implementation Plan, which will be subject to audit and monitoring.

Finally, a precautionary approach shall underpin the management of ecological issues during the construction period. This requires that all parties to the PROJECT seek to manage uncertainty in a manner that provides contingent flexibility in accommodating any new data that might emerge during the construction phase.

Table F1: Preliminary Time-constrained Ecological Commitments

Commitment Number	Location	Summary of Commitment[7]	J	F	M	A	M	J	J	A	S	O	N	D
Planning and Site Preparation														
D5-045	Specific locations identified during ESIA	Mark out existing third-party services and sensitive receptors that need to be avoided during construction												
Year before Construction														
17-18	All camp and pipe storage areas and watercourses	Pre-construction survey at watercourses and pipe storage and camp locations												
19-12a	Determine actual location and extent of cultivated and un-cultivated land on the ROW and working areas	Pre-construction survey												
19-12b	Any sections in uncultivated land that will be constructed between April and July	Cutting vegetation to 5cm high in sections of the ROW and working areas												
19-13a	All open-cut watercourse crossings and non-open-cut where vehicle crossings installed	Survey for bank nesting fauna												
19-13b	All open-cut watercourse crossings and non-open-cut where vehicle crossings proposed	Exclude any bank-nesting IUCN or RDB species from the ROW or working areas												
X7-23	KP345 - KP347	Site specific ecological management plan - *Iris camillae*												

[7] This text paraphrases the commitment text. Only the commitment text is legally binding and it should always be consulted before proceeding.

Commitment Number	Location	Summary of Commitment[7]	J	F	M	A	M	J	J	A	S	O	N	D
X7-28a	KP254-256, KP321 - KP 322.9, KP33.54 - KP336.4, KP342 - KP346, KP346.1 - KP351, KP359 - KP370 and KP383 - KP390	Preconstruction surveys for RDB plant species												
X7-28b	KP254-256, KP321 - KP 322.9, KP33.54 - KP336.4, KP342 - KP346, KP346.1 - KP351, KP359 - KP370 and KP383 - KP390	Site Specific Ecological plan for RDB plant species												
X7-32	KP0 - KP35	Preconstruction survey for *Iris acutiloba* and Site Specific Ecological plan												
X7-34	Buildings or large trees at KP1201-KP1245, KP120-KP124, KP287-KP289	Bat mitigation strategy to be completed following bat survey												
X7-37	KP205-250	A preconstruction survey between November and February inclusive will be undertaken at KP205-250 to identify any need for site-specific mitigation measures to reduce potential impact to gazelle during winter migration.												
Immediate Pre-construction														
19-11a	Entire route	Pre-construction check for IUCN Red List or Azerbaijan Red Data Book species												
19-14	All river crossings suitable for breeding amphibians	Check watercourses constructed in this period for amphibian spawn												
X7-30	Kurekchay (KP221), Ganjachay (KP240), Goshgarachay (KP261), Shamkirchay (KP277), Zeyamchay (KP303), Asrikchay (KP323), Tovuzchay (KP324), Hasansu (KP345) and Kurudere (KP369)	If any crossings are constructed in spawning season, check them for spawning fish												
Construction														
19-11b	Any locations where IUCN Red List or Azerbaijan Red Data Book species are found	Moving non-breeding or non-hibernating IUCN Red List or Azerbaijan Red Data Book animals off-ROW												
19-11c	Any locations where	Moving hibernating IUCN												

Commitment Number	Location	Summary of Commitment[7]	J	F	M	A	M	J	J	A	S	O	N	D
	IUCN Red List or Azerbaijan Red Data Book species are found	Red List or Azerbaijan Red Data Book animals off the ROW												
19-11d	Any locations where IUCN Red List or Azerbaijan Red Data Book species are found	Avoid disturbance of breeding IUCN Red List or Azerbaijan Red Data Book species												
X7-30	Kurekchay (KP221), Ganjachay (KP240), Goshgarachay (KP261), Shamkirchay (KP277), Zeyamchay (KP303), Asrikchay (KP323), Tovuzchay (KP324), Hasansu (KP345) and Kurudere (KP369)	Avoid construction of river crossings during fish spawning season												
Reinstatement and Operations														
X7-21b	KP221, KP240, KP261, KP277, KP303, KP323, KP324, KP345, KP370	Avoid installing bed or bank reinforcement during the fish spawning season												
X7-33a	KP321 - KP 322.9, KP335.4 - KP336.4, KP342 - KP346, KP346.1 - KP351, KP359 - KP370 and KP383 - KP390	Collect seed from adjacent habitats and sow onto ROW												
X7-29	KP237	Reinstate reedbed at the Korchay												
Verification and Monitoring														
17-08	Entire route	Replacement planting for any trees lost												