

PART 2 – WORKS REQUIREMENTS

Section VII. Works Requirements

SECTION VII (b):

Specifications for Project Area Environmental, Social, Health and Safety Management (ESHS)

b) Specifications for Environmental, Social, Health and Safety Management (ESHS) of the Works

[Note to the Employer as to the preparation of the ESHS Specifications]

Projects financed by KfW are categorized in categories A, B+, B or C depending on their adverse environmental and social impacts and risks. This categorization takes place at an early stage and applies to the overall Project. However, typically projects comprise several components and specific individual contracts are awarded to consultants, contractors, firms or suppliers. The categorization of these individual contracts may differ from the categorization of the overall project (e.g. a separate supply contract for computers, or a separate small works contract for the rehabilitation of a guard house etc. may be categorized as minor, whereas the overall project may be a large hydro power project categorized as A).

When establishing the ESHS Specifications for an individual contract, the potential environmental and social impacts and risks and in particular those related to occupational health and safety aspects (OHS) of this specific contract must be taken into account. The relevant parts of the standard ESHS Specifications listed below in Part 2 shall be modified accordingly.

If a country has own ESHS requirements which are more stringent than the present standard ESHS requirements, then these may apply.

*For individual contracts with **significant environmental and social impacts** and / or significant operational health and safety (OHS) impacts and risks, modifications must ensure **high ESHS standards**. The ESHS Specifications listed below are designed for contracts with high ESHS standards and need to be adapted for contracts with lower ESHS standards.*

*For medium sized contracts with **limited environmental and social impacts and risks** and / or limited operational health and safety (OHS) impacts and risks the modifications of the ESHS Specifications shall ensure **elevated ESHS standards**.*

*For small contracts with **minor environmental and social impacts and risks** and minor OHS impacts and risks, the modifications must ensure **basic ESHS standards**. A basic set of ESHS Specifications especially with regards to operational health and safety (OHS) of workers on site shall be maintained.*

Modifications of the below listed ESHS Specifications shall be reflected in the ESHS Cost Schedule and the ESHS Methodology in Section IV and should be in line with the ESHS requirements for Bidders during qualification. In any case, any modification of the ESHS Specifications shall not result in lower standards than applicable standards in the Employer's country.]

Throughout the ESHS Specifications, a reference to the Conditions of Contract (CC) means a reference to both the General Conditions of Contract and the Particular Conditions of Contract. Readers should apply due care, when referring to a specific Clause or Sub-Clause, and:

- (a) Read first the Clause or Sub-Clause text from the General Conditions of Contract;
- (b) Then check whether this text has been amended by the Particular Conditions of Contract, and if so, to which extent.

As per CC Sub-Clause 1.5, when interpreting the Contract, the terms of the Particular Conditions of Contract prevail over those found in the General Conditions of Contract.

Any term in these ESHS Specifications which is identical to a term in the Conditions of Contract shall have the same meaning as the one defined in the Conditions of Contract.

Any term in capital letters in these ESHS Specifications is defined in CC Sub-Clause 1.1 – Definitions.

Table of Contents

A.	<i>Environmental, Social, Health and Safety Management</i>	7
1.	<i>Responsibilities and liabilities</i>	7
2.	<i>ESHS Planning Documents</i>	8
3.	<i>Management of Non-Conformities</i>	10
4.	<i>Resources allocated to ESHS management</i>	12
5.	<i>Inspections</i>	14
6.	<i>Reporting</i>	14
7.	<i>Code of Conduct</i>	14
8.	<i>ESHS Training</i>	16
9.	<i>Standards</i>	18
B.	<i>Protection of the Environment and People</i>	18
10.	<i>Protection of adjacent areas</i>	18
11.	<i>Selection of borrow areas, backfill material stockpile sites and access road</i>	20
12.	<i>Pollution prevention</i>	20
13.	<i>Effluents</i>	21
14.	<i>Atmospheric emissions and dust</i>	23
15.	<i>Noise and vibration</i>	24
16.	<i>Waste</i>	25
17.	<i>Vegetation clearing</i>	29
18.	<i>Biodiversity</i>	31
19.	<i>Erosion and sediment transport</i>	33
20.	<i>Site rehabilitation</i>	36
21.	<i>Documentation on site conditions</i>	38
C.	<i>Health and Safety</i>	38
22.	<i>Health and Safety Plan</i>	38
23.	<i>Health and Safety Reporting</i>	39
24.	<i>Accident reporting procedure</i>	40
25.	<i>Health and Safety meetings</i>	41
26.	<i>Security</i>	41
27.	<i>Equipment and operating standards</i>	41
28.	<i>Work permit</i>	42
29.	<i>Personal protective equipment</i>	42
30.	<i>Dangerous substances</i>	42
32.	<i>Medical check-ups</i>	45
33.	<i>First-aid</i>	46
34.	<i>Medical Services and Personnel</i>	46
35.	<i>Health care</i>	47
36.	<i>Emergency medical evacuations</i>	47
37.	<i>Access to health care and training</i>	47
38.	<i>Health monitoring</i>	48
39.	<i>Sanitary repatriation</i>	48
40.	<i>Hygiene, accommodation and food</i>	49
41.	<i>Substance abuse</i>	51
D.	<i>Local labour and relations with local communities</i>	51
42.	<i>Labour conditions</i>	51

43.	<i>Local recruitment.....</i>	<i>52</i>
44.	<i>Transport.....</i>	<i>54</i>
45.	<i>Workers' accommodation</i>	<i>54</i>
46.	<i>Meals</i>	<i>55</i>
47.	<i>Community Interaction</i>	<i>56</i>
48.	<i>Damage to people and property.....</i>	<i>56</i>
49.	<i>Land acquisition and land take.....</i>	<i>57</i>
50.	<i>Traffic management.....</i>	<i>57</i>
51.	<i>Fossils/ Archaeological Chance Finds</i>	<i>59</i>
	<i>Appendix 1 Example for the Contents of a PA-ESMP.....</i>	<i>60</i>
	<i>Appendix 2 - Properties rendering a product dangerous.....</i>	<i>65</i>

A. Environmental, Social, Health and Safety Management

1. Responsibilities and liabilities

- 1.1. In conjunction with his obligations defined under the Contract, the Contractor will plan, execute and document construction works pursuant to the present Environment, Social, Health and Safety specifications (ESHS).
- 1.2. The Contractor is liable for all damages to the environment and people caused by the execution of the works or the methods used for execution, unless it is established that the execution or methods were necessary, according to the provisions of the Contract or an Engineer's instruction.
- 1.3. Under the Contract and as introduced by the present ESHS Specifications, the term "Project Area" means:
 - a) The land where work will be carried out; or
 - b) The land necessary for the implantation of construction facilities (work camp, workshops, offices, storage areas, concrete production plants) and including special access roads; or
 - c) Quarries for aggregates, rock material and riprap; or
 - d) Borrow areas for sand and other selected material; or
 - e) Stockpiling areas for backfill material or other demolition rubble; or
 - f) Any other location, specifically designated in the Contract as a Project Area.

The term "Project Area" encompasses any individual Project Area or all Project Areas.

For the sake of clarity, Project Area is a different concept than Site under CC Sub-Clause 1.1.6.7.

Project Area defines an area within which the Contractor is to comply with environmental, social, health and safety obligations defined in the present ESHS Specifications.

Site is the places where the Permanent Works are to be executed and to which Plant and Materials are to be delivered, and where right of access to, and possession of, is to be given by the Employer to the Contractor. The Employer is under no similar obligation for any area located outside the Site, even if within the Project Area, where access is at Contractor's risk.

In term of physical footprint, the CC Sub-Clause

1.1.6.7 Site is included in the Project Area. The Project Area is then of greater geographical extent than the Site.

1.4. The ESHS Specifications refer to:

- a) Protection of the natural environment (water, air, soil, vegetation, biological diversity) in areas within any Project Area and its surroundings, i.e. including but not limited to access roads, quarries, borrow areas, stockpiling of backfill material, camps or storage areas;
- b) Health and safety conditions to be maintained for the Contractor's personnel and any other person present on the Project Areas, or along access routes;
- c) Working practices and the protection of people and populations living near the Project Area, but exposed to the general disturbance caused by works.

1.5. Subcontractors

The Contractor shall ensure that all Subcontractors and Suppliers (in particular those for major supply items) are familiar with the ESHS requirements and guidelines valid on Site and Project Area.

1.6. Applicable regulations

The Contractor must identify all applicable laws, permits and regulations in relation to the protection of the environment (water, air, soils, noise, vibration, vegetation, fauna, flora, waste, groundwater) and, pursuant to Clauses 4 and 6 of the CC, the protection of people (labour law, indigenous populations, standards on occupational exposure, other). The Contractor must list all texts, standards and other regulatory limitations in its Project Area Environmental and Social Management Plan (PA-ESMP as specified in ESHS Specifications Sub-Clause 2.1) and specify the means taken for compliance.

2. ESHS Planning Documents

- 2.1. The Contractor prepares and ensures prior validation by the Engineer, implementation and regular update of the Project Area Environmental and Social Management Plan (PA-ESMP), which includes Health and Safety aspects.
- 2.2. The PA-ESMP represents the unique reference document in which the Contractor defines in detail all organisational and technical provisions implemented to satisfy the obligations of the present ESHS Specifications.

- 2.3. The Contractor defines in the PA-ESMP the number, the locations and the type of Project Area as defined in ESHS Specifications Sub-Clause 1.3. For each Project Area, unless otherwise agreed by the Engineer, the Contractor establishes site specific management strategies and implementation and monitoring plans (Site-ESMP) to manage and monitor Environmental, Social, Health and Safety (ESHS) risks, depending on the type, scope and risks of the project and as assessed in the project's Environmental and Social Impact Assessment (ESIA). These sub-plans shall be included in the PA-ESMP and include:
- e.g. Health and Safety Plan
 - e.g. Traffic Management Plan (to ensure safety of local communities from construction traffic)
 - e.g. Water Resource Protection Plan (to prevent contamination of drinking water)
 - e.g. Boundary Marking and Protection Strategy (for mobilization and construction to prevent offsite adverse impacts)
 - e.g. Biodiversity Action Plan
 - e.g. Worksite Management Plan
 - e.g. Site Emergency Plan
 - e.g. Accommodation Plan
 - e.g. Waste Management Plan
 - e.g. Hazardous Materials Management Plan
 - e.g. Specific mitigation plan for endangered species in the wider area
 - e.g. Emergency plan
 - e.g. Community Interaction plan
- 2.4. The PA-ESMP (and the sub-plans) are structured according to the plan specified in Appendix 1 of the present ESHS Specifications.
- 2.5. PA-ESMP covers the entire period from the Contract Agreement signature date to the date of issue of the Performance Certificate by the Engineer.
- 2.6. Unless agreed otherwise by the Engineer, the PA-ESMP is written in the language of communication defined under Sub-Clause 1.4 of the CC.
- 2.7. The first draft version of the PA-ESMP is to be provided by the Contractor to the Engineer within 28

days from the date of execution of the Contract Agreement.

- 2.8. The Contractor shall proceed in accordance with the programme, subject to the Engineer's approval of the PA-ESMP. The Employer's Personnel shall be entitled to rely upon the programme when planning their activities.
- 2.9. No physical work or activity shall commence on any Project Area until such time when the PA-ESMP, and the annexed Site ESMP corresponding to the Project Area, are approved by the Engineer.
- 2.10. During the execution of the works, whenever instructed by the Engineer, the PA-ESMP will be updated by the Contractor and reissued to the Engineer. The revised version shall highlight the new elements incorporated in the document. Such approval shall only be withheld if the PA-ESMP shows substantial deficits.
- 2.11. Related to the PA-ESMP, the Contractor will be responsible for:
 - a) communicating the contents of the ESMPs to their Subcontractors and Suppliers (in particular those for major supply items) and workers and training them to ensure that they understand their respective responsibilities
 - b) ensuring that adequate resources are mobilised to implement the specific Plans, including input from any specialist resources necessary to ensure effective planning and implementation of measures
 - c) ensuring that the procedures established in the PA-ESMPs are complied with by their workers and Suppliers (in particular those for major supply items)
 - d) implementing effective monitoring measures listed in the PA-ESMP to ensure that the effectiveness of the activities are assessed and any issues are promptly detected and addressed
 - e) ensuring that lessons are learned and corrective actions are taken
 - f) keeping the Engineer fully informed of any Project Area ESHS issues.

3. Management of Non-Conformities

- 3.1. In application of Clause 5, non-conformities detected during inspections carried out by the Engineer are subject to a process adapted to the severity of the situation. The non-conformities will be defined as

deviations from the requirements of the applicable regulations, the present ESHS Specifications, the ESMP, and the Worksite - ESMP. Non-conformities are divided into 4 categories as follows:

- a) Notification of observation of minor non-conformities. The non-conformity results in a notification to the Contractor's Representative, followed-up by a signed notification of observation prepared by the Engineer. The multiplication of notifications of observation at the Project Area, or absence of corrective actions by the Contractor, can result in the severity of the non-conformity being raised to that of level 1.
- b) Level 1 non-conformity: Non-conformities that do not represent a serious immediate risk for health, environment, social or safety. The non-conformity is the subject of a report addressed to the Contractor and which shall be resolved within five (5) days. The Contractor addresses to the Engineer a report explaining how the non-conformity has been corrected. Further to an inspection and a favourable evaluation of effectiveness of the corrective action, the Engineer signs a close-out report for the non-conformity. In all cases where a non-conformity of level 1 is not resolved within one (1) month, the severity of the non-conformity is raised to level 2.
- c) Level 2 non-conformities: applies to all non-conformities that represent a risk with major consequences to health and/or the environment, social or safety. The same procedure as for level 1 non-conformities is applied. Corrective action shall be taken by the Contractor within three (3) days. The Contractor addresses a report explaining the corrective actions implemented. All level 2 non-conformities which are not resolved within one (1) month, are raised to level 3.
- d) Level 3 non-conformities: applies to all non-conformities that have resulted in damage to health or the environment, or which represent a high safety hazard or high social risk. The highest levels of the Contractor's and Engineer's hierarchies present in the Employer's country are informed immediately and the Contractor has twenty-four (24) hours to bring the situation under control. Pursuant to Clause 14.6 of the Particular Conditions of Contract (PC), a level 3 non-conformity results

in the staged reduction of interim payments until the non-conformity has been resolved. Following the resolution of the Level 3 Non-Conformity the reduction(s) will be included in the next Interim Payment Certificate for payment. No interest will be paid on any reductions or suspended payment amounts. If the situation requires, and in pursuance to Clause 8.8 of the PC, the Engineer can order the suspension of work until the resolution of the non-conformity.

4. Resources allocated to ESHS management

4.1. ESHS supervisors and managers

- a) Pursuant to Sub-Section Specifications (c) Personnel Requirements, Sub-Clause 4.18 of the CC and in addition to the provisions of Sub-Clause 6.7 of the CC, the Contractor appoints at one or several competent Environment, Social, Health and Safety manager in charge of implementing the present ESHS Specifications.
- b) The appointment of the ESHS Manager shall include specific instruction to enforce regulations and delegated authority to take any action, measure or to issue instructions regarding their enforcement. All staff and labour within the Project Area shall be made aware of the name and authority of the ESHS managers and supervisors.
- c) The ESHS manager holds the power within the Contractor's organisation to suspend the works if considered necessary in the event of severe non-conformities, and allocate all resources, personnel and equipment required to take any corrective action considered necessary. The ESHS Manager speaks fluently the language of communication of the Contract, and the official language of the Employer's country, if the language of communication of the Contract is not the official language.
- d) If so required in accordance with Sub-Section Specifications (c) Personnel Requirements, ESHS supervisors represent the ESHS Manager within work teams. Their role is to ensure that the works are carried out pursuant to the present ESHS Specifications and notify the ESHS Manager of any detected non-conformities.

4.2. Personnel in charge of relations with external stakeholders

- a) If so required in accordance with Sub-Section

Specifications (c) Personnel Requirements, the Contractor appoints an External Stakeholders Relations Manager responsible for relations local communities, administrative authorities, and representatives of economic activities located within one hour travel from the Project Area. In smaller projects, the person responsible for relations with external stakeholders can also be the ESHS Manager appointed under Sub-Clause 4.1.1 of the ESHS Specifications, providing that the latter speaks the local population language fluently.

- b) If so required in accordance with Sub-Section Specifications (c) Personnel Requirements, the Contractor shall appoint several subject specific Community Liaison Officers.
- c) Personnel in charge of relations with external stakeholders will be based on or near the Project Area on a permanent basis.
- d) Administrations and local authorities will be informed of the existence of this person as of the start of works and will be provided with telephone contact details so as to be able to contact this person if a problem arises during the execution of works, or concerning the behaviour of the Contractor's Personnel, inside or outside the Project Area.

4.3. The team, including the ESHS supervisors and manager, and the person in charge of relations with external stakeholders, will be equipped with the necessary resources to operate independently and get to all location of the Project Area without delay. Commensurate with the size and location of the project, this may include:

- a) A 4WD vehicle (unless otherwise instructed by the Engineer) and the necessary operating budget;
- b) A complete IT workstation: computer, printer, Internet access;
- c) Field equipment: GPS, digital camera;
- d) One communication equipment per person adapted to the context (mobile phone, satellite phone, or, should coverage not be adequate, a long-range two-way radio).
- e) Lists of equipment will be maintained on site for inspection by Employer.

5. Inspections

- 5.1. The ESHS Manager will carry out an ESHS inspection of the facilities and Project Area on a weekly basis. A written report of reasonable length will be drafted for each weekly inspection, in a format approved by the Engineer, addressing non-conformities detected on the Project Area as specified in the present ESHS Specifications.
- 5.2. Any non-conformity shall be immediately addressed by corrective actions, which will be mentioned in the reports to the Engineer.
- 5.3. Each non-conformity will be documented by a digital photograph with captions to provide a visual illustration, explicitly indicating the location, date of inspection and the non-conformity in question.

6. Reporting

- 6.1. The Contractor includes a summary of ESHS activities implemented in relation to the execution of the works during the reporting period in the monthly Progress Report (as specified in Sub-Clause 4.21 of the CC) to the Engineer. The Contractor shall report on compliance with applicable laws, permits and regulations and the project related ESHS requirements. E.G. key issues shall include: monitoring results, covering amongst other issues, safety issues, incidents/accidents, need for corrective measures, conflicts amongst construction workforce or with local residents, grievances of workforce or stakeholders, any other details related to the social and environmental management and performance. Issues related to Subcontractors and Suppliers (in particular those for major supply items) shall also be included.
- 6.2. The ESHS progress report is written exclusively in the language of communication defined under Sub-Clause 1.4 of the CC.
- 6.3. Specific reporting requirements related to Health and Safety are detailed in Section (e.g. Health and Safety, accident reporting)

7. Code of Conduct

- 7.1. A Code of Conduct is established by the Contractor for the Project Areas, addressing the following: safety rules, zero tolerance for substance abuse (as defined in Clause 41 of these ESHS specifications), environmental sensitivity of areas around the Project Areas, the dangers of STDs and HIV/AIDS, gender issues (in particular sexual harassment) and respect for the beliefs and customs of the populations and community relations in general (drawing special attention to the risks of prostitution and human trafficking).
- 7.2. The rules are clearly displayed at the different Project

Areas and posted in the Contractor's vehicles and machinery driving cabs.

- 7.3. The rules confirm the Contractor's commitment to implementing the ESHS provisions provided for in the Contract.
- 7.4. New Contractor's Personnel and existing Contractor's Personnel are made aware and acknowledge their understanding of the rules of procedure and the associated provisions. Rules of procedure document are initialled by all Contractors' Personnel prior to the start of any physical work at any Project Area.
- 7.5. Pursuant to Sub-Clauses 6.9 and 6.11 of the CC, the rules of procedure include a list of acts considered as serious misconduct and which must result in dismissal from any Project Area by the Contractor, or by the Engineer if the Contractor is not acting in due course, should a Contractor's Personnel repeatedly commit an offence of serious misconduct despite awareness of the rules of procedure, and this is without prejudice to any legal action by any public authority for non-compliance with applicable regulations:
 - e) Drunkenness during working hours, leading to risks for the safety of local inhabitants, customers, users and personnel;
 - f) Punishable statements or attitudes, and sexual harassment in particular;
 - g) Violent behaviour;
 - h) Intentional damage to the assets and interests of others, or the environment;
 - i) Repeated negligence or imprudence leading to damage or prejudice to the environment, the population or properties, particularly breaching provisions intended to prevent the spreading of STD and AIDS;
 - j) Drug use;
 - k) Possession and/or consumption of meat or any other part of an endangered animal or plant as defined in the Washington convention (CITES) and national regulations.
 - l) Entering property of neighbouring people without permission of the landowners or those cultivating/renting the land.
- 7.6. Serious misconduct, such as organization of sex trade (pimping), committing paedophilia, physical aggression, drug trafficking, deliberate and severe pollution, trading and/or trafficking in all or part of protected species, shall lead to immediate dismissal

as of the first report of misconduct is detected, in application of the rules of procedure and labour laws.

- 7.7. The Contractor establishes a record for each case of serious misconduct, and a copy will be provided to the Contractor's Personnel in question, indicating all action taken to terminate the misconduct by the Contractor's Personnel in question and to bring the attention of other Contractor's Personnel to the type of incident detected. This record will be provided to the Engineer as an attachment to the ESHS progress report (see ESHS Specifications Sub-Clause 6.1.).
- 7.8. The Contractor shall without delay inform the Engineer who in case of serious misconduct shall immediately inform the Employer.

8. ESHS Training

- 8.1. The Contractor prepares a training programme adequate for the works to be performed within the Project Areas and the personnel engaged in the works.
- 8.2. The Contractor ensures that Employees with direct responsibility for activities relevant to the Project's ESHS performance are adequately qualified and trained so that they have the knowledge and skills necessary to perform their work.
- 8.3. Training sessions are two-fold: introductory sessions for starting work at the Project Area, and technical training as required in relation to the execution of the works.
 - 8.3.1. Starting work sessions are organised for each Contractor's Personnel and shall cover as a minimum:
 - a) Rules of procedure;
 - b) Safety rules on Project Areas;
 - c) Protection of areas adjacent to Project Area;
 - d) Risks relating to sexually transmitted diseases (Sub-Clause 6.7 of the CC), prostitution, human trafficking, and sexual harassment;
 - e) Basic health: combating malaria (if prevalent) and waterborne diseases, improving hygiene;
 - f) HIV/AIDS sensitization training,
 - g) Gender sensitization;
 - h) Emergency response procedures or evacuation;

- i) Community relations training for workers interacting with local communities;
 - j) Communication of the contents of the Employment, Training and Worksite Management Plans to workers and all Subcontractors and Suppliers (in particular those for major supply items) and training them to ensure they understand their responsibilities with respect to employment, training and worksite management, incident reporting and response.
 - k) Health and Safety awareness training
 - l) The Contractor shall be responsible for informing all workers of the Worker Grievance Mechanism at the time of hiring
- 8.4. The Contractor shall ensure that adequate resources are mobilised for these trainings, including input from any specialist resources necessary to ensure effective planning and implementation of measures and that trainings are delivered in a timely manner.
- 8.5. Technical training:
- a) Training in the skills needed for tasks requiring a work permit (see ESHS Specifications Clause 27)
 - b) Training in first aid and transporting the injured
 - c) If applicable: appropriate driving skills
 - d) If applicable: the Contractor establishes and implements a transparent and binding Local Workforce and Supplier Training plan to enhance the capabilities of local people and companies, with a view to increasing local content
 - e) a matrix of training requirements showing the training frequency and interval between refresher courses and covering:
- 8.6. The Contractor details in the training programme the actions and ESHS training for all Subcontractors and Suppliers (in particular those for major supply items) or personnel of a joint venture when applicable.
- 8.7. The Contractor prepares an awareness program for local communities on the risks of prostitution, human trafficking and other forms of illegal trafficking.
- 8.8. The Contractor shall develop means of confirming that

the training system is effective.

9. Standards

- 9.1. The Contractor complies with all applicable norms, standards and discharge limit values defined in the national regulations of the Employer's country regulations and pursuant to Sub-Clause 1.6 of the present ESHS Specifications.
- 9.2. The Contractor complies with norms, standards and discharge limit values recommended by the specialised international organisations affiliated to the United Nations, as described in ESHS Specifications 9.3 below. In the event of discrepancies in between international standards and national regulations, the Contractor shall comply with the most stringent requirements.
- 9.3. The specialised international organisations affiliated to the United Nations referred to in ESHS Specifications Sub-Clause 9.2 include:

- a) World Bank, including the IFC and its Environmental, Health and Safety guidelines available from <http://www.ifc.org/ehsguidelines>;

For matters not addressed in the above mentioned IFC document, the most stringent of the norms, standards and discharge limit values of the following institutions shall apply:

- a) World Health Organization (WHO);
- b) International Labour Organization (ILO) (in particular in pursuance to Clauses 6.20, 6.21, 6.23 and 6.24 of the CC);
- c) International Maritime Organization (IMO).

B. Protection of the Environment and People

10. Protection of adjacent areas

- 10.1. The Contractor shall be responsible for any foreseeable adverse environmental and social impacts arising from its activities and operations and for putting in place any necessary measures to avoid or if not possible mitigate them.
- 10.2. Pursuant to Sub-Clause 4.18 of the CC, and unless instructed otherwise by the Engineer, the Contractor uses construction methods and means of protection in order to avoid or minimize adverse effects that are incurred on vegetation, soils, groundwater and surface water, biodiversity, natural drainage and the water quality in areas within any Project Area and its surroundings for the entire duration of the works.
- 10.3. Prior to the start of Project activities, the Contractor will stake out the alignments, boundaries and limits of

Project sites in accordance with plan(s) agreed upon in advance with the Engineer. Contractor will establish the working strip to restrict the area of impacts to within the working corridor and limit personnel and vehicle movements to only within working areas.

- 10.4. All Project work activities will stay within the staked out alignments and boundaries, and outside the designated ecologically and archaeologically sensitive areas unless specifically authorised by the Employer as part of the Project.
- 10.5. Prior to construction, the Contractor shall place signs with environmental protection information in areas identified as environmentally sensitive, and other areas where sensitive flora and fauna species are situated immediately adjacent to construction areas and that may be inadvertently disturbed or damaged during construction. Sensitive areas may include, but are not limited to, nest sites, plant and wildlife species of high conservation value, site-specific habitat features to be protected.
- 10.6. Wetland areas include marshes, fens, mires or natural or artificial bodies of water, whether permanent or temporary, where water is stagnant or flowing, fresh, saline or briny, including seawater with a low-tide depth of six metres or less. Filling of all or part of a wetland area is not permitted, unless the works are necessary according to the provisions of the Contract or the instructions of the Engineer.
- 10.7. With the exception of access roads, or unless instructed otherwise by the Engineer, the entire perimeter of land sites with a surface area of less than 2 hectares is physically demarcated with a fence or tape. For Project Area with a surface area of more than 2 hectares, the perimeter will be physically demarcated by a perimeter track, road, signs or any other means leaving no possible ambiguity as to the location of the Project Area perimeter.
- 10.8. Unless otherwise specified, the perimeter of the Project Area is at a distance of at least:
 - a) 50 m from any permanent water course and outside of floodable areas;
 - b) 300 m from sensitive urban services and buildings (health centre, school, water supply for populations);
 - c) 200 m from any housing; and
 - d) 300 m from housing in the specific case of work requiring the use of explosives.

10.9. If the footprint of the works are located in the situations a) to d) of the ESHS Specifications Sub-Clause 10.8 above, and unless agreed upon otherwise by the Engineer, the Contractor will contract a bailiff to make a sworn statement regarding the existence and conditions of residential buildings situated around the site with a distance specified in Sub-Clause 10.8 above.

10.10. The Contractor shall perform a topographic survey of all additional areas and facilities, including ground elevations in order to reinstate the land after termination of the works; this includes recording all perimeter GPS coordinates; and ensuring that the entire area proposed for land take or temporary usage is included in the survey and recorded via photographs. Access roads shall be identified as new, upgraded or existing. All data, including GPS coordinates, shall be provided electronically to the Engineer.

10.11. The bailiff's sworn statement is prepared and provided to the Engineer with the Site-ESMP.

11. Selection of borrow areas, backfill material stockpile sites and access road

11.1. The Contractor will submit to the Engineer for prior approval, including but not limited to (i) the location of proposed borrow areas or areas to be excavated, or (ii) proposed backfill material stockpile locations or zones designated for the rubble from demolition works; maintenance facilities, storage areas, batch plants, etc.

11.2. This requirement also applies to the side casting during the construction of linear infrastructure (roads, pipelines, transport routes) and which are included in the category of stockpiling of waste material.

11.3. The opening or rehabilitation of all access routes between Project Areas will be shown on a map and approved by the Engineer prior to the start of the corresponding works.

12. Pollution prevention

12.1. The Contractor shall take the necessary measures to ensure that pollution to air, water or land is prevented or, where this is not possible, reduced and mitigated as far as practicable during the construction phase. If required in the PA-ESMP the Contractor will develop a pollution prevention Plan for managing e.g. atmospheric emissions and dust, e.g noise and vibrations, e.g waste (specified in ESHS Specifications 13, 14 and 15 below):

- a) liquid effluents (see Clause 15 of these ESHS specifications)
- b) air emissions

- c) noise and vibration management
- d) vehicle and equipment maintenance and selection
- e) fuel, oil and chemical storage and handling.

12.2. Environmental and/or occupational health and safety regulators will be notified and informed as required by applicable laws about any Environmental pollution. The Contractor shall ensure that all appropriate environmental protection measures are adopted during the clean-up process after termination of works and that clean-up activities are appropriately documented

13. Effluents

13.1. Effluents consist of liquid discharges, including infiltration, from Project Area, transporting a pollutant (dissolved, colloidal or particles).

13.2. A pollutant is a given chemical compound that is at a concentration greater than the limit value established for that compound according to the Clause 9 of the present ESHS Specifications.

13.3. If no recognized threshold exists for a chemical compound pursuant to ESHS Specifications Sub-Clause 12.2, the Contractor provides proof that the concentrations of the chemical in effluents released (discharged) to the environment are harmless to it and human beings.

13.4. No effluent is discharged by the Contractor neither into water courses or bodies including marine environment nor to ground surface or infiltrated into subsoils, without prior treatment and without monitoring quality of the treatment's performance to guarantee the absence of pollution in the effluent. Effluent discharge and flow rates into natural water bodies will be managed to control erosion/sediment freight.

13.5. The Contractor is responsible for carrying out or contracting the monitoring of the effluent quality pursuant to Sub-Clause 12.4 of the present ESHS Specifications by in situ measurements, and sampling and laboratory analysis. In the first case, the Contractor provides the ESHS manager with the resources, equipment and skills to carry out in-situ monitoring and laboratory analysis of the performance indicators. In the second case, the Contractor establishes a contract with a specialised laboratory, accredited with the Employer's country authorities for this activity.

13.6. The physical and chemical parameters of an effluent that require quantity and quality monitoring are those

listed in the Employer's country environmental regulations or in additional international standards or guidelines, or if these do not exist, the parameters are based on the recommendations of specialised international organisations pursuant to Clause 9 of the present ESHS Specifications. The list of monitoring parameters requires approval from the Engineer.

13.7. The Contractor will list, locate, and characterise (flow, expected quality, discharge frequency) all sources of effluents and outlets to the natural environment in the Site Environment Management Plan(s).

13.8. The Contractor will submit to the Engineer an Effluent Quality Monitoring Report on a monthly basis, including documentation for the following for each effluent discharge point: (i) average flow rates of discharged effluents, (ii) discharge frequencies and durations over the month, and (iii) the physical and chemical quality of the effluent discharged, for the conformity with parameters listed in ESHS Specifications Sub-Clause 12.1 above.

13.9. Wastewater run-off

13.9.1. The Contractor will take appropriate measures to ensure that discharges of process wastewater, sanitary wastewater, wastewater from utility operations or stormwater to surface water will not result in contaminant concentrations in excess of local ambient water quality criteria or, in the absence of local criteria, other sources of ambient water quality.

13.10. Rainwater run-off

13.10.1. Run-off consists of the rainwater flow on the surface or the soil and other technical surfaces at Project Areas.

13.10.2. In the context of the Contract, surface run-off is considered as an effluent unless demonstrated otherwise, as documented and substantiated by the Contractor, and approved by the Engineer.

13.10.3. All platforms where generators, hydrocarbon storage tanks and refuelling stations are installed have impervious and chemical resistant surfaces are drained separately and equipped with an oil removal treatment (oil-water-separator) to prevent pollution pursuant to ESHS Specifications Sub-Clause 12.4 above. For concrete batching plants, run-off will be drained to settling basin, where the pH will

be buffered.

- 13.11. Contractors shall prohibit its workers and its subcontractors from bathing or washing clothes and vehicles/equipment in rivers or watercourses.

14. Atmospheric emissions and dust

- 14.1. Emissions refer to any discharge into the air of solid substances, aerosols, gases, radiation, or energy, whether point sources (e.g. incineration stack) or diffuse (e.g. fugitive dust emissions from road use by trucks).
- 14.2. The Contractor will use equipment and adopt construction and transport methods with atmospheric emissions which are not in excess of the threshold emission values recommended by the Employer's country standards, or the organisations mentioned in Clause 9.
- 14.3. Once having received the agreement from the Engineer, the Contractor will document the maintenance records for its fleet of vehicles, machinery and equipment. The records will be in the language of communication defined under CC Sub-Clause 1.4, or any other language approved by the Engineer, and will be at the disposal of the Engineer.
- 14.4. The fleet of vehicles or equipment emitting combustion gases will be maintained at the intervals and according to the methods specified by the manufacturer.
- 14.5. The Contractor shall exercise care to minimize emissions of dust from its activities, including traffic, at work sites, in residential areas and on access roads. Where it is deemed that dust is impacting or may have an impact on human, plant or animal receptors or where dust may cause sedimentation of watercourses/water bodies or unacceptable levels of soil loss, the Contractor shall apply water to the area creating the dust and consider implementing other dust control measures such as using windbreaks, netting screens or semi-permeable fences; controlling vehicle speeds to reduce traffic-induced dust dispersion and resuspension by setting and enforcing speed limits (Contractor vehicle speed limits are specified in ESHS Specifications Sub-Clause 50.10).
- 14.6. This shall include: posting speed limit signs in sensitive areas; ensuring trucks hauling sand, dirt or other loose materials are covered (sheeting trucks); suspending topsoil stripping and replacement during strong winds; using a dust collection system for bulk materials unloading; wet

suppression (as needed, depending on the soil type) in the dry season, where unpaved roads and/or the working strip is located <200 m from settlements taking appropriate abatement measures.

- 14.7. The Contractor describes in the PA-ESMP the road sections designated for the application of dust suppression agents and the methods and frequencies programmed. The Contractor will implement the measures approved by the Engineer.

14.7.1. Where applicable, visual inspections of atmospheric emissions shall be conducted, especially dust and emissions from vehicles and machinery as agreed with the Engineer. The inspections shall identify areas where the implementation of dust reduction measures is required,

14.7.2. When storage, transport and handling of bulk materials is made in the open air and exposed to the wind, the Contractor implements the necessary dust abatement measures.

15. Noise and vibration

- 15.1. The Contractor uses equipment and adopts construction and transport methods so not to generate noise levels in excess of values recommended by the Employer's country regulations and organisations mentioned in Clause 9.

15.2. The Contractor will plan high noise generating works (e.g. pile driving, blasting, rock clearing, drilling, percussion drilling) in line with national regulations and respect maximum ambient noise-levels and night time rest hours at the nearest receptor area. A receptor is defined as an area used for nocturnal socioeconomic activities (e.g. accommodation camps, residential areas, hotels, health centres).

15.3. The Contractor shall locate stationary equipment (such as power generators and compressors) as far as possible from nearby receptors (e.g. worker resting areas, populated areas and environmentally sensitive areas). Equipment known to emit noise strongly in one direction, whenever possible, will be orientated so that the noise is directed away from sensitive receptors

15.4. The use of heavy vehicles at night is specified in ESHS Specifications Sub-Clause 50.9.

15.5. Standard noise abatement equipment shall be fitted to equipment by the Contractor, used and maintained in accordance with manufacturers' instructions.

16. Waste

- 16.1. The Contractor is responsible for identifying, collecting, transporting and treating all waste produced on the Project Areas.
- 16.2. The Contractor shall minimize the generation of waste and reuse, recycle and recover waste in a manner that is safe for human health and the environment.
- 16.3. The Contractor shall establish a Waste Management Plan which details a concept to manage non-hazardous and hazardous waste in line with the local legislations and adapted to the level of danger for human health or the natural environment. In absence of adequate legislation, waste shall be managed according to the guidance provided in the respective sections of the General World Bank Group EHS Guidelines with the objective of protecting soil and water resources. The Waste Management Plan shall include provisions for the training of workers.
- 16.4. Waste register and categorization:
 - 16.4.1. The Contractor establishes and maintains a waste register which is at the disposal of the Engineer. This register will record all waste management operations: production, collection, transport, treatment. It will be available as of the Contractors mobilisation to any Project Area. Waste shall be categorized according to the following definitions:
 - a) Non-hazardous solid waste generated at construction and decommissioning sites includes excess fill materials from grading and excavation activities, scrap wood and metals, and small concrete spills. Other non-hazardous solid wastes include office, kitchen, and dormitory wastes when these types of operations are part of construction project activities.
 - b) Hazardous solid waste includes contaminated soils, which could potentially be encountered on-site due to previous land use activities, or small amounts of machinery maintenance materials, such as oily rags, used oil filters, and used oil, as well as spill cleanup materials from oil and fuel spills.
 - c) Hazardous liquid waste includes effluents and waste material containing "free liquids" (e.g used cutting oil or wastewater mixed with oil after cleaning machinery).

16.5. The following aspects are documented in this register:

- a) Type of waste, using the nomenclature specified in Sub-Clause 16.3.1 above;
- b) Waste quantities;
- c) Name and address of the third party waste management facilities receiving waste or parties taking possession of the substances no longer considered as waste;
- d) Name and address of waste transport Contractors;
- e) Planned waste treatment.

16.6. In accordance with national regulations, the Contractor files and maintains at the disposition of the Engineer the waste manifests for the collection, transport, treatment and/or elimination of waste.

16.7. The Contractor assesses, document and effectively implements any local recycling or re-use options for its waste.

16.8. Waste is stored separately prior to removal from the Project Areas, depending on the level of danger, phase (liquid, solid or gas), the waste management solution to be applied and its potential in terms of recycling or reuse.

16.9. Waste is collected from each Project Area at the same rate that it is produced and is placed in temporary locations meeting the following criteria:

It shall be located at a distance of over 100 m from any natural sensitive area and over 500 m from any socioeconomic sensitive area (school, market, healthcare centre, water well or catchment area), with the exception of waste storage area in camps; and on a flat impervious surface to prevent infiltrations.

16.10. Unless otherwise specified in the Contract or instructed by the Engineer, waste incineration is prohibited on Project Areas. Two exceptions are medical waste and green waste, which unless instructed to the contrary by the Engineer, are managed pursuant to Clause 16.3 of the present ESHS Specifications.

16.11. The use of third party waste management services is subject to a documented prior audit of the treatment, storage and recycling facilities by the Contractor, to guarantee the conformity with the provisions of the present ESHS Specifications on

waste.

16.12. Pursuant to Sub-Clause 1.5 of the present ESHS Specifications, the provisions applicable to the Contractor regarding waste management also apply to any third party waste management Subcontractor. The Engineer reserves its right to inspect third party waste management facilities and prohibit the Contractor from using the facilities if considered unacceptable.

16.13. Non-hazardous waste management

16.13.1. The management of non-hazardous waste shall comply with the following conditions:

- i. The Employer will communicate information to the Contractor about the location of and distance to the nearest landfill area and the disposal conditions.
- ii. If no landfill area exists nearby, the Employer will communicate to the Contractor where the Contractor shall establish a temporary landfill area. The Employer is responsible for obtaining the respective permits.

16.14. Hazardous waste management

16.14.1. The Contractor shall develop a Hazardous Materials Management Plan for those hazardous materials the Contractor is directly responsible for, and detailed procedures for working with chemical products and hazardous materials and handling hazardous waste.

16.14.2. Hazardous materials are those that pose a potential risk to human health or the environment and include cleaning chemicals, solvents and fuels.

16.14.3. Fuel and hazardous chemicals/materials shall be stored in designated areas, pursuant to Sub-Clause 26.8 of the present ESHS Specifications, except for quantities generated or required for the daily construction activities. Fuel, oil or hazardous materials required to be temporarily stored onsite shall be stored within secondary containment located greater than 100m from a watercourse or water body.

16.14.4. Fuel and hazardous chemical storage

areas shall not be allowed within 30m of a minor watercourse, within 100m of a major watercourse, within a floodplain or where there is the potential for spilled fuel to enter groundwater.

- 16.14.5. All fuel and hazardous chemical storage facilities shall be located on flat or gently sloping ground and shall be contained within a bund designed to contain at least 110% of the total capacity of the storage containers plus 10% of the aggregate tank volume within the containment area or as otherwise specified by regulatory requirements. The bund walls and floor shall be constructed of concrete or other suitably impermeable material. The filling connection must be within the bund. No drain valves or other connections through the bund walls shall be permitted. Tanks shall be fitted with a gauge to allow the fill level to be monitored during refilling and preferably with a high-level alarm.
- 16.14.6. When the Contractor's hazardous waste management is conducted by third parties, they must be reputable and accredited in the Employer's country for this activity.
- 16.15. If applicable and in the absence of an existing waste management solution for hazardous waste, the Contractor takes the following action:
 - 16.15.1. Medical waste is incinerated in a specific facility constructed and accredited for this purpose. The Contractor will submit the technical specifications of the facility to the Engineer before importing or procuring the equipment.
 - 16.15.2. Hydrocarbons, lubricants, paints, solvents and batteries are transported in drums to suitable waste management facilities available, if available.
 - 16.15.3. If not otherwise instructed by the Engineer, contaminated soils from construction/demolition and drilling muds shall be treated, stabilized and disposed of to landfill. Prior approval is required from the Engineer regarding the method and site location. The Employer obtains authorization from the competent local authorities prior to any disposal to landfill.
 - 16.15.4. Prior approval from the Engineer is

required before implementing waste management solutions on any other hazardous waste.

- 16.15.5. Prior to the issue of the Taking Over Certificate for the Works, the Contractor provides documentation on hazardous waste, produced by the Contractor's works, landfilled at other sites than accredited third party waste management facilities. The documentation includes a plan showing the location of landfill sites. The document is provided to the competent local authorities whose jurisdiction covers the landfill sites.

17. Vegetation clearing

- 17.1. The works, including the opening up of the right of way and other worksites (e.g. camps, access roads, storage yards) may require vegetation clearance in work areas. Vegetation includes crops, trees, shrubs, bushes, grasses and other minor vegetation. Supervisors shall be trained in the controlled felling of trees to prevent impacts beyond worksites. They shall also be trained on the importance of identification and preservation of wild fauna encountered and disturbed during the stripping operation.
- 17.2. The Contractor describes in the PA-ESMP the planned methods and schedule for vegetation clearing. Specific agreement from the Engineer is obtained prior to any clearing works.
- 17.3. Vegetation clearing using chemicals is not permitted. Vegetation clearing using bulldozer is not permitted in zones less than 30 m from areas designated as sensitive by the Engineer, where only manual clearing is authorised.
- 17.3.2. Where it is not possible to restrict the timing of construction practices, vegetation shall be removed outside the breeding period so that works can carry on into this period unhindered.
- 17.3.3. The felling of trees shall be avoided where possible. Felled trees may be used for building gabions if required for land stabilization. Vegetative material (slash) is not to be used for construction purposes and shall be stockpiled at the edge of worksites. Areas of gathered plant material shall be separated to prevent flames spreading in the event of a fire.

- 17.3.4. Unless otherwise specified in the Contract or if otherwise instructed by the Engineer, burning vegetation is not permitted. Green waste can be burnt with prior approval from the Engineer regarding the location, method and schedule.
- 17.3.5. The collection of wild plants is prohibited.
- 17.3.6. Lighting fires in work areas is prohibited unless specifically authorised by the Employer.
- 17.3.7. It is prohibited to introduce foreign/non-adapted vegetation to the worksites.
- 17.3.8. Removed vegetation will be placed far from surface water. Large woody debris will be stored along the outside edge of worksites in clear areas. Small twigs, branches and pieces of vegetation shall be used for composting along with biodegradable waste generated in the camp and work areas.
- 17.3.9. Clearing of vegetation shall be limited to that which is strictly necessary.
- 17.3.10. Where possible, cutting of vegetation on steep hillsides will be minimal.
- 17.4. Areas cleared prior to undertaking earthworks are shown on a plan with a minimum scale of 1/10,000. Plans are submitted to the Engineer, for validation prior to starting clearing works.
- 17.5. The Contractor undertakes physical demarcation of zones to be cleared using a method approved by the Engineer.
- 17.6. The characteristics (location, species, diameter at chest height) of trees not to be cut down are defined by the Engineer in coordination with the Employer. Such trees are marked with paint and protected against clearing machinery using a method approved by the Engineer.
- 17.7. Trees and areas to be cleared are to be marked precisely so that clearing is undertaken without damage to adjacent non-cleared areas. Topsoil is stored within the cleared areas at the edge of the cleared zone. Clearing is undertaken working from the edge of the zone inwards.
 - 17.7.1 During clearing, the Contractor stockpiles separately:

(i) tree trunks with a diameter at chest height greater than the size defined by the Engineer, and

(ii) trunks with a smaller diameter, branches, leaves, stumps and roots.

17.7.2 Unless instructed otherwise by the Engineer the trunks of trees exceeding the diameter defined by the Engineer are the property of the Contractor.

18. Biodiversity

18.1. The Contractor shall ensure that all personnel are informed and aware of the importance to protect species, habitats, fauna and flora and are informed about wildlife encounter procedures. Information and awareness training is documented.

18.2. If applicable, the Employer will provide to the Contractor a range of ecological surveys prior to the start of construction, conducted by the Employer. These will include but not be limited to the type and location of identified species and habitats of conservation interest within the Project Area, and any resulting measures that are required by Contractor.

18.3. The Employer will provide to the Contractor a constraints map, showing the areas where sensitive, endangered or breeding species are known to occur, including protected areas, sites of importance for nature conservation, wildlife refuges, nature and national parks, important bird areas.

18.4. The Employer will inform the Contractor about seasons for the protection of birds and wildlife. If applicable, the Employer will inform the Contractor if, as a result of protecting birds and wildlife, construction is restricted during a certain period and/or the Contractor must take precautionary measures in compliance with respective national laws and/or as stipulated by the respective local authorities.

18.5. The Employer may update information on the presence of wildlife or sensitive or endangered species' in the Project Area following any additional wildlife/endangered species' survey. If any are identified, the Employer will notify the Contractor who will ensure that all personnel are informed and aware of the required mitigation procedures as communicated by the Employer.

18.6. The Contractor shall apply the Contracting Authority's procedures with regards to fauna and flora management prior to clearing activities.

18.7. The Employer will communicate to Contractor his specific responsibilities related to protecting

endangered species, biodiversity and wildlife, present within the Project Area. Responsibilities may include but not be limited to the following measures:

- a) The Contractor's personnel shall not approach, injure, hunt, capture, possess, feed, transport, rear or trade wild animals and/or collect birds' eggs on the Project Areas
- b) The Contractor's personnel shall avoid where possible breeding, feeding and nesting sites of endangered species, as identified by the Employer's environmental experts and as communicated to the Contractor by the Employer.
- c) The Contractor personnel shall not collect flora or fauna species on the Project Areas.
- d) The Contractor shall report any sighting or finding of dead wildlife killed by the works to the Engineer immediately.
- e) The Contractor shall protect excavations with temporary fencing to prevent injury to animals.
- f) The Contractor shall release any trapped uninjured animals immediately.
- g) The Contractor shall report injured endangered and/or larger animals to the Engineer who will inform the appropriate Environmental Authority.
- h) The Contractor shall not disturb natural habitats outside the Project Areas.
- i) The Contractor shall only use designated roads or paths and abide by speed limits.
- j) The Contractor shall not start forest fires.
- k) The Contractor shall not introduce Invasive Alien Species (IAS)
- l) All construction machinery imported from overseas shall be inspected to detect IAS and washed before dispatching to the Project Areas.
- m) Where necessary, the Contractor shall develop IAS control procedures (e.g. physical removal, slashing, mulching, herbicides, etc.). Methods used to control or prevent such species shall not cause adverse impacts on the environment or communities.
- n) To limit the risk of introducing marine invasive species, the Contractor shall control the ballast water and anti-fouling systems of vessels arriving from other bioregions in accordance with

International Maritime Organization (IMO) conventions and guidelines.

18.8. For impacts to biological resources:

- a) development of a specific mitigation plan for endangered species in the wider area
- b) trenches or holes created during site works must be covered at night

18.9. Regarding habitat loss/degradation and habitat fragmentation Contractor will:

- a) site permanent infrastructure on unused land of no particular ecological value
- b) take no construction materials from the surrounding environment unless otherwise specified in the respective management plan
- c) monitor the impacts on flora and fauna at sensitive locations

18.10. The Contractor will adopt best construction site practices to minimize the risks of adverse effects on neighbouring habitats/species from construction activities (dust, noise, waste disposal etc.). This will include appropriate toilet and litter collection facilities as inspected by the environmental coordinator.

19. Erosion and sediment transport

19.1. Erosion and sediment control shall be taken into consideration from the beginning of the construction phase, i.e. from site clearance.

19.2. The Contractor plans earthworks and optimises the management of space to ensure that all cleared surfaces and areas exposed to soil erosion are minimised on all Project Areas and erosion is minimised as far as practical.

19.3. The Contractor shall determine the appropriate locations and the type of erosion control measures required, to be agreed with the Engineer.

19.4. If not instructed otherwise by the Employer, the Contractor shall install erosion matting to provide an immediate protection for slopes against erosion, prevent the washing-out of seeds and enhance the micro-climatic conditions in the soil for plant growth. Erosion matting is used to provide temporary protection of the soil surface until sufficient natural vegetation cover has been established.

19.5. Topsoil

- 19.5.1. Topsoil is the uppermost and most fertile portion of the soil (unless indicated otherwise, the top 25

centimetres), containing organic matter, seeds and nutrients that promote vegetation growth. Its presence is a key factor in promoting revegetation success. Consequently, preserving topsoil is a key component of revegetating worksites and restoring the soil's ability to protect itself against erosion. Contractor shall observe the following basic principles of good topsoil management:

- 19.5.2. Topsoil shall be removed from working areas only when absolutely necessary and in accordance with Project guidelines. Areas subject to topsoil stripping will be identified prior to grading activities.
- 19.5.3. Any plant, turf layer or root mass will be stripped together with the topsoil, except in wetlands where the turf will be stripped separately from the topsoil layer where practical. Topsoil will be removed using backhoes only.
- 19.5.4. Topsoil is stored according to the provisions approved by the Engineer to enable reuse during Project Area rehabilitation.

19.6. Draining rainwater run-off

- 19.6.1. Run-off from the working corridor will be intercepted. Surface water run-off will not be permitted to enter surface watercourses. Contractor will take appropriate measures.
- 19.6.2. The gradient of Project Areas allows the collection and drainage of rainwater from the entire surface area to one or several discharge points. No pools of water are created.
- 19.6.3. Suspended solids in rainwater are removed using sediment traps / settling ponds. Rainwater from vehicle parking areas, machinery areas, workshops is subject to treatment with oily water separators.
- 19.6.4. Rainwater pre-treatment units are sized, cleaned, maintained and accessible to ensure compliance with the effluent quality criteria defined in ESHS Specifications Sub-Clause 12.9

and to allow monitoring of performance.

19.7. Sediment control

19.7.1. The Contractor installs sediment control barriers to slow the flow of water and control sediment transport at Project Areas with (i) a gradient of more than 20%, and (ii) where land is disturbed by the works or where stockpiled mineral material exposed to sheet or rill erosion.

19.7.2. Sediment control barriers are installed on the slope or at the base of the slope to protect the natural drainage system from sediment accumulation at levels higher than the natural situation. These barriers comply with the following principles:

- a) Made with geotextiles or straw bales or any other means pre-approved by the Engineer;
- b) Deployed before the start of works and removal of topsoil. Barriers can be used for the physical demarcation of working areas;
- c) Installed, cleaned, maintained and replaced according to manufacturer recommendations;
- d) If applicable, drainage surface area does not exceed 1,000 m² per 30 m of barrier. The length of the slope behind the barrier is less than 30 m, and is not used for flows in excess of 30 l/s.

19.7.3. For the dredging of marine sediments, if applicable and unless specified otherwise in the Contract, or instructed otherwise by the Engineer, and particularly if the working area is exposed to currents, the Contractor will install a geotextile silt curtain, or any other technique approved by the Engineer to control turbidity clouds.

19.8. Backfilling and stockpiling of backfill materials

19.8.1. In case mineral material stockpiles do exceed a height of 6 m, with a maximum slope of 3:2 (height:

volume), the slope has to be crossed at a height of 3 m by a berm with a minimum width of 2 m and with a peripheral drainage trench, to ensure stability and resistance to rainwater runoff erosion.

19.8.2. For permanent backfill material stockpiles, the stockpile is shaped and compacted every 30 cm to ensure long-term stability.

19.8.3. Temporary stockpiles in place for more than 60 days are protected against runoff erosion by (i) revegetation using fast-growing grass species, either by direct seeding or by hydro-seeding, or (ii) using other natural anti-erosion cover with prior approval from the Engineer.

19.9. Side casting during the construction of linear structures (roads, pipelines, transport lines), will be permitted in the following conditions:

19.9.1. For natural gradients with a slope $<40\%$, the side cast materials are piled to create a slope of less than 2H:1V.

19.9.2. For natural gradients with a slope $>40\%$, to ensure stability 3m wide berms will be installed perpendicular to the slope and onto which the side cast material is deposited. Regular earthworks to maintain the form of the side case and long term stability of the side cast is carried out. The slope of the side cast in general does not exceed 3H:2V.

19.9.3. The provisions of Clauses 10 and 19.6 for the protection of water courses exposed to erosion induced by the works apply.

20. Site rehabilitation

20.1. Unless instructed otherwise by the Engineer, the Contractor will rehabilitate all Project Areas and landscapes disturbed by the works, to their original condition where possible upon completion of construction and prior to the provisional acceptance of the works. Close collaboration with all statutory stakeholders will be conducted in cooperation with the Employer during the reinstatement.

20.2. The Contractor describes in the PA-ESMP the planned revegetation works to ensure sustainable Project Area rehabilitation: methods, plant species to be used and their origins, activity schedule based on a

progressive taking over of Project Areas.

20.3. As a minimum, the Contractor shall carry out the following reinstatement activities:

20.3.1. If not otherwise instructed by the Engineer, all buildings, campsites and free standing and underground structures (e.g. piping, underground tanks, sumps and basins) are removed pursuant to the provisions of Sub-Clause 4.23 of the CC. All waste and rubble is removed in accordance to the provisions of Clause 16 of the present ESHS Specifications. After removal of buildings structures and rubble, the Contractor returns Project Areas to their original condition, according to the following provisions.

20.3.2. Land is levelled to ensure that run-off water drains without eroding soil or stagnating in pools.

20.3.3. Rehabilitated Project Areas do not represent hazards for people. Areas near steep drops at quarries are fenced off and indicated with permanent concrete warning signs. Holes are refilled. Sharp or unstable items are rendered inoffensive.

20.3.4. Unless specified otherwise in the Contract, or instructed otherwise by the Engineer, the Contractor undertakes revegetation of all Project Areas disturbed by the works and bears the cost of such work.

20.4. Fertiliser application shall be limited to areas where it is necessary to establish a rapid vegetative cover for erosion control purposes in areas of high risk. Any fertiliser applications must be formulated and performed so that natural nutrient balances in adjacent ecosystems are not altered, particularly where there are nearby water bodies.

20.5. The Contractor shall perform routine maintenance of revegetated areas until such time that occupation of the land is officially handed back to the Employer or third parties.

20.6. The Contractor shall control noxious weeds and invasive species within revegetated areas.

20.7. Prior approval by the Engineer is required regarding the origin of seeds and plants proposed by the Contractor. The species used for revegetation must be suitable for the local environmental conditions, and selected according to the rehabilitation programme:

stabilisation of backfill, landscaping, drainage, prevention of erosion, etc.

20.8. Revegetation is undertaken throughout the duration of construction works, and is not limited to the rehabilitation of Project Areas at completion of the works.

20.9. The present Clause applies to the side casting of waste mineral materials generated during the construction of linear structures (roads, pipelines, transport lines).

21. Documentation on site conditions

21.1. The Constructor documents changes in condition of all Project Areas from the start of works until the Performance Certificate is issued. Documentation comprises dated and geo-referenced colour photographs taken from a constant angle and viewpoint.

21.2. The Project Area condition is documented as a minimum for the following stages:

- a) Before any Project Area disturbance at the start of works;
- b) On completion of works, but prior to starting rehabilitation;
- c) On completion of rehabilitation and revegetation, if necessary, but prior to the Taking Over Certificate issuing;
- d) After the end of the Defects Notification Period and prior to the Performance Certificate issuing.

21.3. The Contractor specifies in the PA-ESMP (i) the list of viewpoints to be used, (ii) areas to be photographed, and (iii) methods used for taking and archiving photographs, according to industry photographing and archiving standards.

21.4. Adjacent areas (100 m from the perimeter of the Project Area) are included in photographic documentation.

C. Health and Safety

22. Health and Safety Plan

22.1. In application of Clauses 4 and 6 of the CC, the Contractor shall develop a Health and Safety Plan (HS Plan) section of the PA-ESMP, its organization for managing health and safety, pursuant to its Health and Safety Management system (HSMS).

**23. Health and
Safety
Reporting**

- 22.2. Pursuant to Clause 6 of the CC, the HS plan identifies and specifies:
- a) That Contractor understands and manages all health and safety risks relating to the execution of the works, including gender-specific risks;
 - b) Prevention and protection measures to control risks related to the execution of the works, by differentiating, where necessary, measures concerning the protection of women and men;
 - c) Human and material resources involved;
 - d) Works requiring a permit (e.g. blasting, butting of trees);
 - e) Emergency plans to be implemented in the case of an accident.
- 22.3. The Contractor implements prevention, protection and monitoring measures, as described in the health and safety plan.
- 22.4. The Contractor shall have in place a Behavioural Safety Based Programme and actively train and encourage Personnel to intervene on unsafe behaviours and situations and report on deviations.
- 23.1. The Contractor shall document in a structured system (e.g. a Site Accident record sheet) all accidents, dangerous occurrences and investigations which shall be available at all times for inspection by the Engineer.
- 23.2. The Contractor shall investigate any incident and record and report systematic follow-up of relevant findings and recommendations. Problem areas related to HS shall be recorded with information about status, responsible person(s) and alternative solutions.
- 23.3. As specified in Sub-Clause 4.21 of the CC, the Contractor includes in the Progress Report to the Engineer a monthly HS Performance Report. The format and content of the HS Performance Report shall be agreed with the Engineer prior to the commencement of the works and report them to the Engineer.
- 23.4. In pursuance to clauses 4 and 6 of the CC, this report shall contain the following data, as related to the works:
- a) Progress against implementation of the Contractor's HS Plan
 - b) A list, including a brief description, of all incidents and dangerous occurrences
 - c) Number of fatalities

24. Accident reporting procedure

- d) Number of serious incident frequency
 - e) Total Recordable injury frequency
 - f) Number and type of accidents with and without lost-time
 - g) Serious illness
 - h) Total number of 'near miss events;
 - i) Number of theft incidents;
 - j) Number of security and number and type of other incidents;
- 23.5. In the event that the Contractor receives communication from the Engineer on HS under-performance, the Contractor shall prepare and implement an HS Improvement Plan to rectify such.
- 24.1. The Engineer is informed within one hour day/night of any accident involving serious bodily injury to a member of personnel, a visitor or any other third party, caused by the execution of the works or the behaviour of the personnel of the Contractor.
- 24.2. The Engineer is informed as soon as possible of any near-accident (near misses) relating to the execution of the works which, in slightly different conditions, could have led to bodily injury to people, or damage to private property or the environment.
- 24.3. The Contractor shall prepare a report on each accident or dangerous occurrence and a copy of the report, together with witness statements and any other relevant information, shall be submitted to the Engineer as soon as possible.
- 24.4. A reportable accident shall include any accident to any person on Site requiring medical attention or resulting in the loss of working hours or any incident that resulted, or could have resulted in injury, damage or a danger to the Works, persons, property or the environment. Contractors will also notify and report of incidents of Subcontractors and Suppliers (in particular those for major supply items) and their Contractors Sites.
- 24.5. The Contractor shall report any HS accident, related to Contractor activities or personnel, to national or local authorities as required by relevant legislation. A copy of all such reports shall be provided to the Engineer.
- 24.6. The Contractor shall not notify or give any information to the media or other units or people without the employer's consent.
- 24.7. The Contractor shall immediately rectify any situation

or condition that could result in injury or a danger to the Works, person, property or the environment. If the situation or condition cannot be corrected immediately, the Contractor shall provide temporary barriers and appropriate warning signs and devices and/or take other appropriate action necessary for the protection of persons, property and the environment.

25. Health and Safety meetings

- 25.1. Contractor shall ensure efficient and effective HS communication and consultation with all Personnel involved in the Work. This includes but is not limited to toolbox meetings prior to the start of the Work, worksite HS meetings on a regular basis with all parties involved (including Subcontractors, the Engineer and third parties). It may also comprise other forms of communication.
- 25.2. Contractor shall ensure that supervision, directly in charge of construction activities, fully brief and discuss with Personnel at HS Tool Box Talks at the start of each work day and prior to commencing new activities. These talks shall be conducted in a language understood by the workforce. A checklist shall be utilised for this purpose. At a minimum it shall include the following;
 - a) Nature of the job
 - b) Associated hazards
 - c) Safe working methods to be adopted
 - d) Requirements of the Permit to Work

- 25.3. The Contractor shall convene weekly team talks, extended to Subcontractors if applicable.

26. Security

- 26.1. The Contractor shall evaluate the security strategy and arrangements required for all worksites including transport. This evaluation shall be performed by qualified security experts and shall form the basis for the Worksite Security Strategy and Plan which shall be submitted and approved by the Engineer as part of the PA-ESMP. The Security Strategy and Plan shall describe:
 - Security risks and the identified mitigation / management measures
 - Roles and responsibilities including details of the Contractor and Subcontractors
 - Detection, monitoring and management procedures
 - Escalation plans including resources

27. Equipment and operating

- 27.1. The facilities and equipment used by the Contractor are installed, maintained, revised, inspected and tested pursuant to the manufacturer's

- standards** recommendations. The recommendations are available in the language of communication defined under CC Sub-Clause 1.4 (or any other language approved by the Engineer).
- 28. Work permit**
- 28.1. The Contractor puts in place a work permit procedure, prior to the starting of the works. The procedures define the approval process between the person qualified to issue the work permit and the personnel (or Subcontractors) carrying out the work.
- 28.2. Permits are issued in writing. Unless specified otherwise in the Contract, or instructed otherwise by the Engineer, works which require a work permit are defined in the health and safety plan. All other work permits required by the Engineer will be implemented by the Contractor.
- 29. Personal protective equipment**
- 29.1. The Contractor ensures that all personnel, visitors or third parties entering a Project Area are equipped with Personal Protection Equipment (PPE) pursuant to the practices and standards specified in Clause 9.
- 29.2. Where appropriate, PPE must be worn by women as well as by men.
- 29.3. The Contractor describes in the PA-ESMP the PPE to be used per Project Area and per activity.
- 29.4. Personnel and visitors to Project Areas are equipped with a safety helmet, safety shoes and a reflective jacket as a minimum.
- 29.5. Adequate quantities of PPE are available on the Project Areas. Storage conditions must be compatible with usage pursuant to the provisions of ESHS Specifications Clause 30.
- 29.6. Contractor personnel are trained in how to use and care for PPE and the Engineer has access to training certificates.
- 29.7. When handling acids, caustics, and chemicals with corrosive or toxic properties, suitable protection shall be worn to prevent accidental contact with the substance.
- 30. Dangerous substances**
- 30.1. A substance is considered dangerous if one or several of its properties render it dangerous, as defined in Appendix 2 of the present ESHS Specifications. The Contractor identifies and manages dangerous substances planned for use on the Project Area in the manner described in the present Clause.
- 30.2. The assessment of the impact of the toxicity of dangerous substances on the reproductive functions of women and men must be taken into account.
- 30.3. The transport to the Project Area and use of

dangerous substances requires prior authorisation from the Engineer.

- 30.4. Details of risks and related prevention and protection measures are included in the health and safety plan.
- 30.5. The Contractor obtains all necessary authorisations and/or licenses for the storage and use of dangerous substances from local authorities. A copy of the authorisations is provided to the Engineer.
- 30.6. For each dangerous substance used, the Contractor will implement the recommendations described (i) in the Material Safety Data Sheets (MSDS), and (ii) by the Globally Harmonized System of Classification and Labelling of Chemicals established by the United Nations for hazardous chemicals.
- 30.7. Copies of MSDSs are kept on the Project Area, and made available to personnel. The Contractor provides the Engineer with copies of all MSDSs.
- 30.8. Storage of dangerous substances
 - 30.8.1 Storage areas are designed and equipped by the Contractor based on the chemical and physical properties of the substances, on the types of containers stored, the number of people requiring access, the ventilation requirements, the quantities of the substance used and potential chemical reaction with other substances (see ESHS Specifications Sub-Clause 30.8.5 below).
 - 30.8.2 Pursuant to ESHS Specifications in Clause 16.12, the Contractor anticipates and plans for the storage and management of hazardous waste.
 - 30.8.3 Storage areas for dangerous substances are subject to strict rules, which are regularly checked by the ESHS manager. The rules include the following as a minimum:
 - a) Access to the storage area is limited to trained and authorised individuals;
 - b) An inventory is maintained up-to-date;
 - c) MSDSs must be available for all stored dangerous substances, and the substances must be clearly labelled;
 - d) A strict and methodical storage system is implemented (storage plan posted, large or heavy packaging may not be stored at heights, equipment and tools may not be stored in the dangerous substance storage room);
 - e) Compliance with product expiry dates and

- implementation of a disposal procedure for substances which are not needed or which have expired;
- f) Entrances, exits and access to emergency equipment are kept clear at all times.
- 30.8.4 Storage areas are clearly identified with warning signs at the entrance. The Contractor displays the storage plan (location of the different products, maximum inventory), a summary of labelling system and information on chemical incompatibilities.
- 30.8.5 Chemicals which could react together (leading to explosions, fire, projections or the emission of dangerous gases) are physically separated.
- 30.8.6 Products that react violently with water are stored so as to prevent contact with water, even in the event of flooding.
- 30.8.7 Inflammable products are stored separately in a dedicated area with adequate ventilation at all times.
- 30.8.8 Buildings used to store large quantities of dangerous substances are isolated from other buildings to avoid the spreading of fire. Such buildings are constructed using solid and non-combustible building materials, and are equipped with evacuation systems and the appropriate firefighting equipment. Access to the buildings is clear, allowing for rapid evacuation in the event of an accident. The electrical systems are reduced to the essential minimum, and access points are equipped with adequate lighting (300 lux).
- 30.8.9 All storage areas are equipped with secondary retentions. Each storage area acts as a general secondary retention. Suitable absorbents (neutralising and non-combustible) are available in the storage area to clean up any spills and leaks.
- 30.8.10 The Contractor maintains the storage area at a suitable temperature for dangerous substances to prevent overpressure and bursting of containers.

31. Planning for emergency situations

- 31.1. The Contractor shall establish an emergency plan as a section of the PA-ESMP. It covers the following emergency situations as a minimum:
- a) e.g. Fire or explosion;
 - b) e.g. Collapse of structures, or scaffolding;
 - c) e.g. Loss of the containment of dangerous substances;

d) e.g. Safety incident or malicious act.

31.2. The Contractor shall maintain fit-for-purpose Emergency Response Capability, which shall be clearly documented.

31.3. At a minimum, the Contractor shall make contingency arrangements for calling a Doctor and transporting injured persons to hospital. The telephone numbers of the emergency services and the name, address and telephone number of the Doctor and the nearest hospital shall be prominently displayed in the Contractor's office.

31.4. The Contractor ensures that all personnel are informed and aware of how to react in an emergency situation, and responsibilities are defined. Information and awareness training is documented, and available on all Project Areas.

31.5. The Contractor organises and documents emergency simulation exercises within 3 months of the physical start of the works, and subsequently once every 12 months up to the issue of the Taking-Over Certificate. The Engineer is invited to participate in each of these exercises.

31.6. Fire protection

31.6.1. Based on a fire safety risk assessment, the Contractor will ensure that adequate and appropriate fire safety measures are in place to minimise the risk of injury or loss of life in the event of a fire. Appropriate actions include: Keeping sources of ignition and flammable substances apart; Avoiding accidental fires; Ensuring good housekeeping at all times, e.g. avoiding build-up of rubbish that could burn; Installing smoke alarms and fire alarms or bells; Installing fire warning systems; Having correct fire-fighting equipment; Keeping fire exits and escape routes clearly marked and unobstructed at all times; Ensuring workers receive appropriate training on procedures they need to follow, including fire drills.

31.6.2. Fire will not be used as a method of forest or vegetation clearance.

31.6.3. Fire extinguishers are made available in each building at clearly identified locations, and fires are strictly forbidden outside of the cooking area.

31.6.4. If applicable, the Contractor makes arrangements with local fire-brigades for emergencies

32. Medical check-ups

32.1. The Contractor organises medical check-ups carried out by a doctor or an appropriately qualified nurse for

all Contractor's Personnel prior to the initial mobilisation to the Project Area to check aptitude for the work. Medical check-ups are adapted to the anticipated occupied positions and carried out pursuant to the recommendations of the International Labour Organization. Subsequent to the check-up, a written medical certificate is issued declaring the aptitude of the worker for the allocated tasks.

- 32.2. Hearing tests are conducted for the Contractor's personnel exposed to noise levels above 80 dB(A) in order to establish initial audiograms. Annual tests are carried out to monitor any changes and detect any deterioration.
- 32.3. The Engineer can request additional medical examinations for the Contractor's Personnel if considered necessary, all costs to be borne by the Contractor.
- 32.4. A medical examination is carried out on any Contractor's Personnel returning to work after leave caused by a work related accident. A written medical certificate is issued confirming the Contractor's Personnel's aptitude to return to work at the designated workstation.
- 32.5. The Contractor can produce a copy of its Contractor's Personnel's work aptitude certificates at the request of the Engineer or any competent authority.
- 32.6. Specific arrangements for tasks' assignments or workstations shall be made for pregnant Personnel.

33. First-aid

- 33.1. The Contractor ensures a minimum of first-aid provisions on any work site, including: suitably stocked first-aid kits; a person, respectively an adequate number of staff appointed and trained to take charge of first-aid arrangements and ensure that staff and workers are informed about first-aid arrangements. .
- 33.2. The Contractor equips the Project Area with a communication system exclusively for the purposes of communication with the first aid services. Information on how to communicate with the first aid services is clearly indicated near the communications equipment.

34. Medical Services and Personnel

- 34.1. The Employer will inform the Contractor about the presence and number of medical personnel in the Project Area. If not otherwise instructed by the Engineer, in application of clause CC 6.7, the Contractor shall collaborate with local health authorities and make arrangement with an appropriate number of local doctors, and/or nurses, hospitals and ambulance services to ensure that medical staff, first aid facilities, sick bay and ambulance service are available at a minimum within 45 minutes at the Site, and at any

accommodation for Contractor's and Employer's Personnel or if appropriate, be based in the Project Area.

- 35. Health care**
- 35.1. The Contractor guarantees access to health care for all personnel in case of accident or illness occurring during the execution of the works.
- 35.2. In absence of a health or health post in the vicinity, or within the Project Area, the Contractor shall make contingency arrangement for transporting injured persons to a hospital in application of ESHS specification Clause 36.
- 36. Emergency medical evacuations**
- 36.1. The Contractor allocates rapid emergency transportation for first aid purposes to the first aid station pursuant to standard NF EN 1789:2007.
- 36.2. In cases where there is no first aid emergency vehicle available to evacuate severely ill or injured personnel, the Contractor establishes an agreement with a specialised company for the handling of personnel in the event of a serious accident requiring an emergency medical evacuation and ensures that transport is guaranteed any time and as fast as possible. The Contractor will provide a copy of the agreement to the Engineer within one month of the physical start of works.
- 36.3. The agreement includes a convention with a referring hospital where the member of personnel evacuated in emergency conditions will be treated.
- 36.4. In highly remote areas or in demonstrably life threatening cases, the agreement may cover the use of air transportation (if available) in order to evacuate the injured patient(s) to the referring hospital.
- 36.5. The telephone numbers of the emergency services and the name of the service providers and the doctors shall be prominently displayed in the Contractor's site office
- 37. Access to health care and training**
- 37.1. The Contractor guarantees access to health care as defined in Clause 34 for all personnel in case of accident or illness occurring during the execution of the works, i.e.:
- a) Medical check-ups: initial (recruitment), annual and upon returning to work after sick leave;
 - b) Screening, vaccinations and preventive healthcare;
 - c) General healthcare during the execution of the works;
 - d) Medical assistance in the event of an accident and assistance for emergency evacuations.
- 37.2. Subcontractor's personnel, other contractors, the

Employer or the Engineer, present at the Project Area, must never be refused medical assistance, under the pretext that they are not directly employed by the Contractor. The Contractor may however define a unit rate cost per medical act for personnel, other than its own Contractor's Personnel, display this rate in the healthcare centre and forward the information to the Engineer.

- 37.3. In the event of accident or serious illness, medical personnel must be trained, available and equipped with the necessary material, medicines and consumables to provide first aid for the patient, stabilise their condition, until the patient is:
- a) Either treated or discharged; or
 - b) Hospitalized at the camp or in a larger hospital; or
 - c) Evacuated to a medical centre which is well equipped for intensive care, if necessary.

38. Health monitoring

- 38.1. The Contractor cannot recruit workers in poor health.
- 38.2. The initial pre-recruitment examination must confirm that applicants are physically able to carry out the tasks required for the position.
- 38.3. The detection of pregnancy during the initial pre-recruitment examination of female applicants shall not constitute grounds for declining recruitment, unless medical risk is proven.
- 38.4. The Contractor organises annual medical check-ups for its Contractor's Personnel and keeps up to date a medical record for each Contractor's Personnel. The presence of Contractor's Personnel for medical check-ups, treatment and hospitalisation is incorporated into the Contractors planning.
- 38.5. If applicable and as recommended by a doctor or instructed by the Engineer, the Contractor provides the Contractor's Personnel with prophylaxis and vaccinations against local diseases and vectors. In particular, the Contractor will promote the use of impregnated mosquito nets by its Contractor's Personnel in camps or offsite lodging, and distributes these nets appropriately.
- 38.6. The health and safety plan includes a Contractor's Personnel health risk assessment based on exposure to dangerous substances and describes the medical monitoring implemented.

39. Sanitary repatriation

- 39.1. The Contractor is responsible for the sanitary repatriation of Contractor's Personnel in the event of a serious injury or illness, based on a diligent examination and a statement of the doctor in charge.

The Contractor will take out the necessary insurance to cover the cost of the sanitary repatriation of its Contractor's Personnel.

40. Hygiene, accommodation and food

40.1. Drinking water

40.1.1. Pursuant to Sub-Clause 6.14 of the CC, the Contractor provides personnel with drinking water at all Project Areas. The quantity and quality of this water complies with the standards of the World Health Organization at supply points.

40.1.2. Unless the supply of drinking water is provided by a certified supplier, the quality of the drinking water provided to workers is tested at least at the start of the works and then on a monthly basis. The protocol for taking and analysing samples is based on the recommendations of the World Health Organization. The results shall be documented and made available on the Project Areas.

40.2. Accommodation conditions

40.2.1. The accommodation provided for non-resident Personnel in a camp or an alternative structure outside of the Project Areas, such as a hotel or rented house, will comply with the conditions of the present ESHS Sub-Clause in pursuance of Sub-Clause 6.6 of the CC.

40.2.2. The person in charge of managing the accommodation has a specific duty to report to the ESHS manager or if existent, the HS manager, the outbreak of any contagious diseases, food poisoning and other important casualties. The ESHS Manager in turn will inform the appropriate health authorities.

40.2.3. Rooms are lit and equipped with power sockets, beds and windows fitted with mosquito nets. Flooring is of a hard and impervious material.

40.2.4. The temperature in rooms and common areas shall be kept at an appropriate level during occupied hours (20 degrees in moderate to cold zones and providing adequate ventilation in hot zones).

40.2.5. The Contractor provides one drinking water tap per 10 Contractor's Personnel, one shower per 10 Contractor's Personnel as a minimum, one individual toilet for 15 Contractor's Personnel as a minimum, and one urinal per 25 Contractor's Personnel at accommodation camps. Separate showers and toilets must be made available for women.

40.3. Hygiene in shared areas

40.3.1. Sanitary areas (showers, sinks, urinals, toilets) are cleaned and disinfected by the Contractor's cleaning

service at least once every 24 hours. Cleaning operations are documented.

40.3.2. The canteen, kitchen and kitchen utensils are cleaned after each meal service.

40.3.3. The number and location of toilets on Project Areas shall be adapted to the number of employees and the configuration of the Project Areas (distance, isolated area, etc.). For urinals and toilets, usual standards are 1 unit to max 15 persons.

40.3.4. Toilet facilities are conveniently located and easily accessible. In addition, all toilet rooms shall be well-lit, have good ventilation or external windows, have sufficient hand wash basins and be conveniently located.

40.4. Food

40.4.1. In application of Sub-Clause 6.13 of the CC and ESHS Specifications Sub-Clause 46.1 of the present ESHS specification, the Contractor provides meals at a reasonable cost or free of charge to its Contractor's Personnel per shift in a canteen area and according to a procurement system which complies with the provisions of this ESHS Specifications Sub-Clause.

40.4.2. The Contractor defines and implements actions in order to guarantee (i) the quality and quantities of food stuffs, (ii) compliance with health rules when preparing meals, (iii) fitting out and servicing premises and equipment, both in the kitchen and food storage areas.

40.4.3. The Contractor inspects the cleanliness of food transport vehicles, temperature control and the cold chain, as well as best-before dates, and takes the necessary corrective actions. The temperatures of chillers are regularly checked.

40.4.4. The Contractor checks that health requirements are met for food storage conditions in the kitchen or other locations, food cooking times and temperatures, and the conditions in which prepared products are left prior to consumption, to ensure no health risks. Prepared food is eaten or thrown away, no food remains are reused.

40.4.5. The Contractor recruits trained canteen personnel and ensures that supervisors monitor compliance with sanitary instructions. The Contractor ensures that canteen personnel have means of ensuring compliance with health rules (changing rooms, linen, hand washers, the condition of flooring and paint, and the existence of a cleaning plan).

- 40.5. At the request of the Engineer, the doctor at the health centre specified in Clause 35.2.2. of the present ESHS Specifications, carries out an audit on all Project Areas every 3 months, and documents the results, and includes the conditions of hygiene in which meals are prepared and food conserved. The results of this audit are provided to the Engineer.
- 40.6. The Contractor, on the basis of the advice of the doctor at the health centre, informs Contractor's Personnel on appropriate behaviour in terms of workplace hygiene. The occasional distribution of information is not sufficient, the Contractor regularly reiterates the importance of hygiene, documents these reminders, and ensures that the information is understood, easy to apply and scrupulously complied with.
- 41. Substance abuse**
- 41.1. Pursuant to Sub-Clause 6.16 of the CC, the use, possession, distribution or sale of illegal drugs, controlled substances (as per local regulations) and alcohol is totally prohibited on the Project Areas. The Contractor implements a zero tolerance policy for the consumption of these substances.
- 41.2. Any person suspected by the Engineer to be under the influence of alcohol or controlled substances on any Project Area is immediately suspended from his position by the Contractor, pending the results of medical tests.

D. Local labour and relations with local communities

- 42. Labour conditions**
- 42.1. The Contractor shall ensure decent labour conditions for workers and notably compliance with applicable law and regulations in the country of implementation of the contract, and with the fundamental conventions of the International Labour Organisation (ILO). This includes workers' rights related to wages, working hours, rest and leave, overtime, minimum age, regular payment, compensation and benefits, equal opportunities, a non-discriminatory workplace, best practice on human resource management and occupational health and safety. Wages, benefits and conditions of work will be comparable to employers in the relevant region of that country/region and sector concerned.
- 42.2. The Contractor shall respect and facilitate workers' rights to organize and provide a Worker Grievance Mechanism for all workers, including the workers of subcontractors, shall receive an induction on their rights and on the Worker Grievance Mechanism. The Contractor will display the contact details of the Worker Grievance Mechanism at well visible places in all camps and work sides.

- 42.3. The Contractor shall issue and implement internal policies and procedures to assure that no employee or job applicant will be subject to discrimination and/or harassment.
- 42.4. The Contractor shall establish for their personnel and those of their main contractors a system to monitor hours worked on the Project and seek to identify and remedy any practices which lead to long working hours in excess of national legislation.
- 43. Local recruitment**
- 43.1. Local recruitment is defined as the number of positions actually allocated to people residing in the region of the Works (less than two hours by land transport to the Project Area) for more than one year and citizen of the Employer's country.
- 43.2. Pursuant to Sub-Clause 6.1 of the CC, and if requested by the Employer, the Contractor, and/or respectively the Subcontractor hiring local workers, establishes and initiates a local recruitment policy and a procurement plan to ensure that recruitment procurement procedures are transparent and disseminated to the project affected communities for the duration of the Works.
- 43.3. The policy and plan shall be enforced by the Subcontractors and suppliers of major supply items, responsible for hiring local workers.
- 43.4. The Contractor demonstrates the effective implementation of this policy to the Engineer in its monthly activity report as defined in Sub-Clause 6.1 of the present ESHS Specifications.
- 43.5. Pursuant to Clause 8 of the present ESHS Specifications and if requested by the Employer, the Contractor develops a training programme aiming to support the local recruitment policy.
- 43.6. This training programme must be available to women and adjusted to their level of education.
- 43.7. An incentive mechanism to increase the share of women recruited by the Contractor and the Subcontractors may be established.
- 43.8. Local labour needs are estimated prior to the start of works and described in the PA-ESMP with the following information:
- a) Identification of positions that could be filled by local staff and the level of qualification required;
 - b) Definition of the planned procedure for the effective recruitment of these members of staff;
 - c) Establishment of mechanisms to ensure non-discrimination of women in accessing recruitment

- procedures;
- d) Deployment schedule for these positions;
 - e) Initial training to be provided by the Contractor for each job description.
- 43.9. In order to prevent outsiders from entering the Project Area, local recruitment at the Project Area, including at the entrance, is prohibited.
- 43.10. Local recruitment office
- 43.10.1. One month prior to the start of Works, the Contractor establishes a local recruitment office in the district where the main Project Area is located, at a location pre-approved by the Engineer.
 - 43.10.2. A representative of the Contractor is present in this office at least two mornings each week, from the start of the works to a date pre-approved by the Engineer.
 - 43.10.3. The representative provides information on job vacancies with the Contractor for the execution of the works (required qualifications, duration, and location) and on the information to be provided in applications.
 - 43.10.4. Lists of local candidates are drafted by the representative allocated to the office and forwarded to the Contractor's Human Resources manager on a weekly basis.
- 43.11. The Contractor's Human Resources manager selects candidates listed by the local recruitment office based on requirements for the Works and the Contractor's recruitment procedures. A written contract between the Contractor and the local Contractor's Personnel is drafted, signed and archived by the Contractor.
- 43.12. If the Project Areas are located near to several different communities, the Human Resources manager ensures a fair distribution of local recruitment between the different communities.
- 43.13. The Human Resources manager will ensure that recruitment campaigns in local communities have been spread to women and that the latter have not been discriminated in recruitments.
- 43.14. Pursuant to Sub-Clause 6.22 of the CC, the Contractor maintains one record per local Contractor's Personnel indicating the hours worked per person allocated to the works, the type of tasks carried out, the wages paid and any training provided. Records are available at the main Project Area at all times, so the Engineer and the authorised representatives of the government can assess

the content.

- 44. Transport**
- 44.1. Unless specified otherwise in the Contract, or instructed otherwise by the Engineer, the Contractor provides or enables access to daily transport for Contractor's Personnel not housed in the camps managed by the Contractor and living more than 15 minutes' walk from the Project Area and less than one hour by land transport.
 - 44.2. The transport is organised under conditions which comply with local regulations and which ensure the safety of the people transported.
 - 44.3. The Contractor organises collective transport: pick-up times and locations are defined and services organised appropriately.
 - 44.4. Transport from the living facilities to his wages worksite is safe and free. If the Project Area is moved during the working season and if the Contractor retains the local personnel trained at the start of the works, the accommodation of the Contractor's Personnel is managed by the Contractor:
 - a) Within a mobile camp with the other non-local Contractor's Personnel; or
 - b) In villages located near to the mobile Project Area, in this case, each local Contractor's Personnel will receive a housing allowance in addition areas within each camp and a sports field for use by Personnel.
- 45. Workers' accommodation**
- 45.1. Living facilities are located to avoid flooding and other natural hazards.
 - 45.2. Living facilities are located to avoid flooding and other natural hazards.
 - 45.3. Where possible, living facilities are located within a reasonable distance from the worksite.
 - 45.4. The living facilities are built with adequate materials, the sites are adequately drained to avoid the accumulation of stagnant water, kept in good repair and kept clean and free from rubbish and other refuse.
 - 45.5. Rooms shall not be mixed: separate rooms must be made available for both men and women.
 - 45.6. Separate toilets and locker rooms shall be provided for women and men.
 - 45.7. The Contractor constructs and maintains a range of recreational facilities and shared leisure
 - 45.8. The Contractor ensures that at campsites:
 - a) Workers have access to an adequate and convenient supply of free potable water,

- b) that drinking water meets national/local or WHO drinking water standards,
- c) that all tanks used for the storage of drinking water are constructed and covered as to prevent water stored therein from becoming polluted or contaminated,
- d) that drinking water quality is regularly monitored.

45.9. Dormitories

45.9.1. A separate bed for each worker is provided. The practice of "hot-bedding" shall be avoided. Rooms shall not host more than 8 individuals.

- a) There is a minimum space between beds of 1 metre.
- b) Double deck bunks are not advisable for fire safety and hygiene reasons, and their use is minimised. Where they are used, there must be enough clear space between the lower and upper bunk of the bed. Standards range from 0.7 to 1.10 metres.
- c) Triple deck bunks are prohibited.
- d) Each worker is provided with a comfortable mattress, pillow, cover and clean bedding.
- e) Bed linen is washed frequently and applied with repellents and disinfectants where conditions warrant (malaria).
- f) Facilities for the storage of personal belongings for workers are provided, including 0,5 m³ and 1 meter of shelf unit.

45.10. The Contractor shall mitigate impacts of activities (e.g. those that create noise or light) at worksites in order to avoid any public disturbance or disturbance of camp residents.

46. Meals

- 46.1. Food supplies for the meals of the Contractor personnel will exclude any meat obtained from hunting or poaching, with the exception of fish.
- 46.2. The Contractor provides for at least two meals per shift to local Contractor's Personnel pursuant to the hygiene conditions specified in Clause 40 of the present ESHS Specifications, at reasonable price for the Contractor's Personnel. If no canteen is available, the Contractor at least pays for a minimum of 2 meals per day per shift.
- 46.3. The Contractor shall avoid any local disputes through respecting local culture and values. The Contractor shall ensure that workers are aware of local issues and sensitivities, and respect local culture and values in order to avoid any local disputes and crime.

- 47. Community Interaction**
- 47.1. Commensurate with the size of Construction activities and unsolved potential disturbances of the community and risks to public health and safety, the Contractor shall produce an Implementation Plan related to Community Interaction and submit it to the Engineer for review and acceptance prior the commencement of any works or traffic related to works.
 - 47.2. The plan shall include a schedule of planned work activities which may impact a neighbouring community and describe (i) the activities per task and phase which may impact the neighbouring communities (ii) the approach to engage and communicate with stakeholders related to the works defined in (i); (iii) responsibilities for community interaction per task and phase.
 - 47.3. When meeting stakeholders in neighbouring communities, minutes of meetings shall be produced and recorded as by Employer's guidelines;
 - 47.4. The Contractor shall disclose relevant information related to the involved impacts and risks to communities (e.g. related to Traffic Management or e.g. to entering of private property for surveys) in local language and at a level of complexity that is commensurate with local realities to ensure that stakeholders fully understand the content.
 - 47.5. The Contractor shall include information about the Employer's grievance mechanism and the contact details in all community communication materials.
- 48. Damage to people and property**
- 48.1. The Contractor shall implement a worker's Code of Conduct and not disturb or interfere with the inhabitants of local communities close to or in the Project Area, and shall respect their houses, cultures, animals, properties, customs and practices.
 - 48.2. The Contractor's 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.
 - 48.3. Pursuant to Clauses 4.14 and 17.1 of the CC, the Contractor is responsible for damages to people and property caused by the execution of the works or the procedures used for execution (e.g. project vehicles demolishing local fences or houses, driving accidentally over crops or causing any other material grievances).
 - 48.4. Access to the Project Areas is prohibited to unauthorized persons. The Contractor is responsible for the security and access control of the Project Areas.
 - 48.5. The Engineer is informed of any damage caused to people, or the property of individuals, other than the Contractor's personnel, within 6 hours of the event,

regardless of the value of the prejudice.

48.6. The Contractor shall establish procedures to manage and rectify and record incidents related to community disturbances.

48.7. Blasting

48.7.1. Housing existing before the start of the works, located within a minimum radius of 800 m around the perimeter of the quarries and within a minimum radius of 500 m around the other Project Areas that will be subject to blasting, will be examined by a bailiff unless agreed upon otherwise with the Engineer.

48.7.2. The bailiff's sworn statement is prepared and provided to the Engineer with the Site-ESMP.

48.7.3. Should any problems be detected due to the intensity of blasting, the Engineer is entitled to request that the Contractor carry out seismic measurements of the intensity of the vibrations induced by the blasting, at variable distances from the blasting points, under the supervision of the Engineer, and at the cost of the Contractor.

49. Land acquisition and land take

49.1. Pursuant to Sub-Clause 7.8 of the CC, the Contractor will cover (i) occupancy indemnities for the extraction or use of construction materials and (ii) the cost of acquiring the necessary land to stockpile excess backfill material.

49.2. The Contractor provides compensation for any prejudice suffered by the owners of the land mentioned in Sub-Clause 48.1 of the present ESHS Specifications, but also for any prejudice incurred by users of this land, if these users are not the same parties as the owners.

49.3. If not otherwise instructed by the Employer, the Contractor demonstrates to the Engineer (i) who are the owner and the users, if different parties have been identified, and (ii) a written agreement governing the temporary occupancy or acquisition of this land has been negotiated and duly paid up to the two parties, if different.

50. Traffic management

50.1. The Contractor defines the characteristics of its fleet of vehicles and site machinery in the PA-ESMP, in the form of a traffic management plan with the aim to prevent construction site vehicle incidents by the effective management of transport operations throughout the construction process.

50.2. The Contractor defines in the traffic management plan the itineraries used on a map for each route between the different Project Areas and for each phase of the construction works, and obtains the validation of the Engineer. The Contractor requests that the Employer obtain the authorisations of the competent administrative

authorities if public roads are used. Any Engineer's instruction to update the traffic management plan shall be implemented.

- 50.3. The Contractor defines in the traffic management plan the itineraries used on a map for each route between the different Project Areas and for each phase of the construction works, and obtains the validation of the Engineer. The Contractor requests that the Employer obtain the authorisations of the competent administrative authorities if public roads are used. Any Engineer's instruction to update the traffic management plan shall be implemented.
- 50.4. To reduce accidents, the Contractor will ensure that:
- a) Pedestrians and vehicles are kept apart (e.g. through providing separate entrances, walkways, signals)
 - b) Vehicle movements are minimized
 - c) Drivers are adequately trained and have the appropriate permits for driving vehicles
 - d) Turning circles for turning vehicles are installed.
- 50.5. Within one month of the physical start of works, the Contractor informs the administrative authorities of areas crossed by the Contractor's vehicles, of the itinerary and characteristics (frequency of passing, size and weight of trucks, materials carried) of the Contractor's fleet of vehicles.
- 50.6. If public roads are used, and unless approved otherwise by the Engineer, the Contractor mandates a bailiff to make a sworn report regarding the state of the road prior to use by the Contractor's vehicles. The report is annexed to the PA-ESMP.
- 50.7. The Contractor describes in the traffic management plan the expected traffic created by its fleet of vehicles (frequency of trips between Project Areas, working hours, convoys).
- 50.8. The Contractor also describes the number and positioning of flagmen.
- 50.9. Unless specified otherwise in the Contract or instructed otherwise by the Engineer, heavy vehicles (i.e. with a GVWR of more than 3.5 tons) may not be used at night between 22:00 and 06:00.
- 50.10. Speed limits
- 50.10.1. The Contractor takes action to limit and check the speed of all vehicles and machinery used to execute the works at an appropriate level.

- 50.10.2. The maximum speed of all machinery and vehicles of the Contractor comply with the lowest of the following: the speed limit defined according to the Employer's country regulations or the following limits.
- 50.10.3. 20 km/h within the Project Areas;
- 50.10.4. 30 km/h in villages or hamlets, in towns, from 100m before the first house;
- 50.10.5. 80 km/h on unpaved roads outside of towns, villages, hamlets and camps.
- 50.10.6. Pursuant to Sub-Clause 4.15 of the CC, and in coordination with the competent Employer's country authorities, the Contractor provides and installs signs for the fleet of vehicles along public roads, when public signs are inadequate.
- 50.10.7. The Contractor provides each of its drivers with a map at the appropriate scale of the roads authorised for the execution of the works, clearly indicating the maximum speeds authorised, and ensures their understanding.
- 50.11. It is strictly prohibited to transport people, equipment or products other than those required for the Works and the management of Project Areas, on board any of the Contractor's vehicles. This provision also applies to the transport of live animals and meat obtained from hunting, fishing or poaching.
- 50.12. The trailers and skips used to carry materials which could be projected (sand, crushed material, aggregates, selected materials) are covered with a tarpaulin for the entire itinerary between two Project Areas.
- 51. Fossils/ Archaeological Chance Finds**
 - 51.1. The Contractor shall establish specific procedures to manage the protection of archaeological and historical sites, chance finds and fossils as stipulated in Sub-Clause 4.24 of CC.

Appendix 1

Example for the Contents of a PA-ESMP

1.	Environmental policy	➤ Declaration of ESHS policy signed by the Managing director of the Contractor and clearly defining the commitment of the Contractor in terms of (i) ESHS management for its construction sites and (ii) compliance with the ESHS Specifications of the Contract.
2.	PA-ESMP	➤ Target and content of the Project Area Environmental and Social Management Plan (including Health and Safety) ➤ Preparation and updating schedule ➤ Quality assurance and validation
3.	ESHS resources	➤ Human resources: – ESHS manager – ESHS supervisors – Person in charge of relations with stakeholders – Medical personnel ➤ Logistics & communications: – ESHS vehicles – IT stations – In situ noise, air and water measuring equipment – Analysis laboratory used ➤ Reporting: – Weekly inspections – Monthly – Accident/ Incident
4.	ESHS regulations	➤ Definition of standards for the applicable national ESHS regulations and the ESHS recommendations of institutions affiliated to the United Nations (WHO, ILO, IMO, IFC), applicable to the execution of works: – Environment..... – Noise and Vibration Soil Erosion – Air Quality – Solid Waste – Hazardous Materials – Wastewater Discharges – Contaminated Land

		– Occupational Health and Safety – Community Health and Safety – General Site Hazards – Disease Prevention – Traffic Safety – Discharge standards – Minimum wage – Day and/or night traffic restrictions – Other ➤ Definition of ESHS standards for the industry applied
5.	ESHS operational inspection resources	➤ Site tracking procedure: – Frequency – Personnel – Assessment criteria ➤ Non-conformity handling and detection procedure: – Distribution of information – Notification depending on the level of importance allocated to non-conformities – Tracking of the closing of the non-conformity ➤ Management of data on tracking and non-conformities : – Archiving – Use as a performance indicator
6.	Project Areas	➤ Description of Project Areas (as per definition in ESHS Specifications Sub-Clause 1.3: – Number – Location on a topographical map – Activities – Opening & closing schedule – Access ➤ Reference to the Appendix: a Site-ESMP for each Project Area.
7.	Health and safety plan	➤ Identification and characterisation of health and safety risks, including the exposure of personnel to chemicals, biological hazards and radiation. ➤ Description of working methods to minimise hazards and control

		risks. ➤ List of the types of work for which a work permit is required ➤ Personal protection equipment ➤ Presentation of the medical facilities at Project Areas: – Healthcare centre, medical equipment and allocation of medical staff – Medical treatments that can be carried out on-site – Ambulance, communications – Referring hospital ➤ Evacuation procedure for medical emergencies ➤ Description of the internal organisation and action to be taken in the event of an accident or incident
8.	Training plan	➤ Basic training for non-qualified staff ➤ Health and Safety inductions ➤ Health & safety training
9.	Labour Conditions	➤ Description of Human Resource Policy for construction works of direct and indirect workers
10.	Local Recruitment	➤ Local labour requirements: – Job descriptions and the levels of qualifications required – Recruitment procedure and deployment schedule – Initial training to be provided by the Contractor for each job description ➤ Location and management of the local recruitment office(s)
11.	Project machinery and vehicle traffic	➤ Description of the fleet of vehicles/machinery used for the execution of the works and emission levels and safety requirements ➤ Deployment (Project Area & schedule) and maintenance sites for each vehicle and machine ➤ Mapping of itineraries, travel times, and areas where speeds are limited ➤ Dust suppression: – Mapping of road sections where dust reduction initiatives apply – Water points identified or to be created for refuelling tanker trucks – Capacity of the tanker trucks used and calculation of the number of trucks required – Width of the track to determine if one watering run or equivalent is adequate (narrow track) or if two runs are

		required (wide track) – Number of watering or equivalent operations proposed per day depending on the climate
12.	Dangerous substances	➤ Inventory of dangerous substances per Project Area and per period ➤ Transport and storage conditions and chemical incompatibility
13.	Effluents	➤ Characterisation of effluents discharged to the receiving environment ➤ Facilities for the treatment or pre-treatment of effluents including sufficient run-off ➤ Measures for reducing the sediment content of rainwater runoff ➤ Measures for monitoring the efficiency and performance of facilities for reducing sediment content of rainwater runoff ➤ Resources and methods for monitoring effluent and rainwater runoff quality
14.	Noise and vibrations	➤ Estimation of the frequencies, duration, days of the week and noise levels per Project Area
15.	Waste	➤ Inventory of waste per Project Area and per period ➤ Collection, intermediate storage, handling and treatment methods for ordinary or inert waste ➤ Storage and handling methods for dangerous waste
16.	Clearing and revegetation	➤ Methods & schedule for clearing vegetation and earthwork activities ➤ Methods, species and schedule for the revegetation of Project Areas disturbed by the works
17.	Biodiversity	➤ Schedule for adequate fauna and flora management ➤ Measures for minimizing impact on fauna and flora species based on the Contracting Authority procedures ➤ Measures for monitoring the efficiency and performance of the plan in place ➤ Measures for limiting IAS ➤ Measures for monitoring the efficiency and performance of the plan in place
18.	Prevention of erosion	➤ Location of zones suffering from erosion ➤ Methods and schedule for the implementation of anti-erosive actions, including topsoil storage
19.	Documentation of site condition	➤ List and cover of viewpoints ➤ Imaging method ➤ Archiving photographs
20.	Rehabilitation	➤ Method and schedule for Project Area rehabilitation

21.	Appendices	➤ Site-ESMP (number and location specified in Section 6 “Project Areas” above): – Marking out of the Project Area perimeter on a map – Definition of zones for vegetation clearing, zones for the storage of usable timber, zones for burning of green waste – Definition of on-site activities: construction, storage areas, accommodation areas, offices, workshops, concrete making units – Layout of activity areas on the Project Area: construction works, production/operation areas, rehabilitation and closure – Zones for the storage of topsoil, spoil from earthworks, materials – Access routes and checkpoints – Project Area occupancy schedule – Organisation of Project Area preparation – Liquid discharge outlet points – Proposed sampling points for monitoring water quality – Atmospheric emission outlet points – Location of the storage site for dangerous products – Location and mapping of waste treatment facilities when handled by an external service provider – Any other information relating to the environmental management of the Project Area ➤ Emergency plan – Description of facilities – Characterisation of hazards – Emergency situations – Organisation structure - roles and responsibilities – Emergency procedures – Human and material resources – Triggering of the plan – Reporting
-----	-------------------	--

Appendix 2 - Properties rendering a product dangerous

1. **Explosive** substances and preparations which could explode in the presence of a flame or which are more sensitive to impacts and friction than dinitrobenzene.
2. **Combustive** substances and preparations which, when in contact with other substances, particularly inflammable substances, undergo strongly exothermic reactions.
3. **Easily inflammable** substances and preparations (i) in liquid phase (including extremely inflammable liquids), with a flash point below 21°C, or which can heat up to the extent of spontaneous combustion in ambient air; or (ii) in solid phase, which can burst into flames easily in the brief presence of a source of inflammation and which will continue to burn after the removal of the source of inflammation or (iii) in gaseous phase, which are inflammable in air at normal pressure; or (iv) – which, when in contact with moist air or water, produce dangerous quantities of gases which are easily inflammable.
4. **Inflammable** liquid substances and preparations, with a flash point equal to or above 21°C and less than or equal to 55°C.
5. **Irritant** non-corrosive substances and preparations which, when in immediate, extended or repeated contact with the skin and mucosa, can cause inflammation.
6. **Harmful** substances and preparations which, in case of inhaling, swallowing or cutaneous penetration, can lead to risks of limited severity.
7. **Toxic** substances and preparations (including highly toxic substances and preparations), which, in case of inhaling, swallowing or cutaneous penetration, can lead to serious, acute or chronic risks, and even death.
8. **Carcino-genic** substances and preparations which, in case of inhaling, swallowing or cutaneous penetration, can lead to or increase the frequency of cancer.
9. **Corrosive** substances and preparations which, in case of contact with living tissues, can destroy the latter.
10. **Infectious** substances containing viable micro-organisms or their toxins, for which it is known or we have good reasons to believe that they cause disease in humans or other living organisms.
11. **Harmful to reproduction function** substances and preparations which, in case of inhaling, swallowing or cutaneous penetration, can induce or increase the frequency of undesirable non-hereditary effects in offspring or have a negative effect on reproductive functions and abilities.
12. **Mutagenic** substances and preparations which, in case of inhaling, swallowing or cutaneous penetration, can lead to hereditary genetic disorders or increase the frequency of these disorders.
13. **React with water** substances and preparations which, in case of contact with water, air or an acid, release a toxic or highly toxic gas.
14. **Sensitising** substances and preparations which, in case of inhaling or cutaneous penetration, can lead to a hypersensitisation, so that renewed exposure to the substance or preparation will cause characteristic harmful effects. This property can only be considered if test methods are available.
15. **Ecotoxic** substances and preparations with inherent or potential immediate or deferred risks for one or several environmental components.

16. **Dangerous for the environment** substances and preparations which are likely, after elimination, to lead to another substance, by any means, e.g. a lixiviation product, with one of the above characteristics.