



Exploration & Production

GENERAL SPECIFICATION

ENVIRONMENT

GS EP ENV 112

Environmental Baseline and Monitoring Studies: Offshore and Nearshore Sites
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1. Scope

The purpose of the present General Specification is to define the technical instructions for compiling a detailed Scope of Work in order to establish the reference environmental status or to carry out the environmental monitoring of an offshore or a nearshore site.

This General Specification is the minimum standard required by the Company. It should be adapted to each project in order to define a particular specification, or Scope of Work.

Additional requirements from the local authorities shall be taken into account.

This General Specification defines the content of the study and its organization, progress, content of the different phases and deliverables.

2. Reference documents

The reference documents listed below form an integral part of this General Specification. Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the EFFECTIVE DATE of the CONTRACT.

Standards

Reference	Title
Not applicable	

Professional Documents

Reference	Title
ESI	Environmental Sensitivity Index Guidelines, NOAA , version 3.0, 2002, updated 2009

Regulations

Reference	Title
Not applicable	

Codes

Reference	Title
Not applicable	



Other documents

Reference	Title
Not applicable	

Total General Specifications

Reference	Title
GS EP ENV 001	Environmental requirements for projects design and E&P activities
GS EP ENV 111	Environmental Baseline and Monitoring Studies: Onshore sites
GS EP ENV 120	Environmental Impact Assessment of E&P activities
GS EP ENV 501	GIS deliverables for HSE
GS EP SDV 101	Social Baseline Study

3. Terms and definitions

For the purpose of this document, the following definitions apply:

Coastal area refers to a distance of few hundred meters inland starting from the lowest low-tide point.

Nearshore or coastal water: in the absence of more stringent local regulations, nearshore or coastal water starts from the lowest low-tide point and extends up to 3 nautical miles towards the sea

Onshore or terrestrial means on land.

Offshore means situated at sea some distance from the shore and beyond the 3 nautical mile coastal water limit.

The **sensitivity** is the degree to which a **system** may be affected, directly or indirectly, by a perturbation (i.e. potential consequences based on its intrinsic physical, biological and socio-economic characteristics).

System includes areas with ecological or economical importance, such as protected areas or sensitive ecosystems such as mangroves, peat bogs, fishing areas, areas of tourist interest, etc.

The **vulnerability** is the degree to which a **system** (ecologic, socio-economic) is susceptible to, or unable to cope with a perturbation. The vulnerability relies on the sensitivity of the **system**, on the nature, extent, rate of the perturbation, and on the capacity of the **system** to recover from the effects of the perturbation (also known as resilience).

For other definitions or acronyms, refer to Appendix 1 and [GS EP ENV 001](#).

4. Objectives of environmental baseline and monitoring studies

The objective of the Environmental Baseline Study (EBS) or reference status of an offshore or a nearshore site is to describe, before starting any new E&P project, the physic-chemical, biological, and general socio-economical characteristics of the site and highlight its main

sensitivities. Any existing contamination of the natural Environment by pollutants shall be identified and clearly assessed, in particular that which is related to oil industry activities. The EBS shall also provide an evaluation of the capacity of the disturbed environment for natural self-restoration.

The EBS includes both a bibliographic study and a field survey.

The EBS shall provide all the factual elements and parameters to support completion of an Environmental Impact Assessment (EIA) of the project to satisfy the **GS EP ENV 120** requirements.

The mapping of the sensitive areas should be used as a basis to develop an accidental spill prevention and intervention plan.

The objective of the Environmental Monitoring Study (EMoS) is to assess the site conditions at regular intervals during the operation phases or after the end of activities, and to compare to the original reference status.

According to the local context, Company may define a specific Social Baseline Study Scope of Work in accordance with **GS EP SDV 101**.

5. Responsibilities

The Company Representative, appointed by the Company, is responsible for coordination between the parties involved:

- Company headquarter departments (EP/HSE/ENV, EP/HSE/SUR, EP/OPS/LSO),
- The entity responsible for the Project,
- The affiliate HSE, Environment, Security and Logistics departments, and site RSES,
- The Contractor selected to carry out the study,
- Local Authorities and any International Organizations involved,
- Local community(ies) and associations.

The Company Representative is also responsible for:

- Adapting, if necessary, the scope of work or particular specification to the local conditions and to the characteristics of the project,
- Providing all in-house available information,
- Defining a tentative schedule and approving the final schedule of the study,
- Approving the choice of the logistics means, survey team and laboratory(ies) in charge of the analyses,
- Approving safety and security arrangements,
- Supervision of the field survey,
- Deciding on the final choice of survey routes and sampling locations,
- Approving methods and equipment for sampling, samples pre-treatments, storage, packaging and transport to Laboratory,
- Deciding to analyze part or all samples recovered and approving methods for analysis,

- Defining the number of copies of the reports and validation of the Contractor's deliverables.

The Contractor is responsible for:

- Propose a schedule for the study,
- Carrying out the bibliographic study,
- Proposing a preliminary sampling plan,
- Obtaining all the necessary authorizations from the Local Authorities,
- Submitting logistics, safety and security arrangements to Company for approval,
- Providing all the equipment necessary for the sampling campaign, and the certificates of conformity/calibration of the equipment,
- Carrying out the field survey,
- Ensuring at his own cost the accommodation, food, health, safety, welfare of all personnel involved in the work on the vessel,
- Selection of the accredited laboratory(ies),
- Performing the in situ and laboratory analyses and Quality Control,
- Ensuring full quality control for samples recovery, storage, equipment calibration,
- Ensuring the correct packaging and shipment of samples and that samples are received in good condition by the selected laboratory(ies),
- The interpretation of the results,
- The deliverables and results integration in a GIS (Geographic Information System).

Excessive out-sourcing should be avoided, but the Contractor may use dedicated external consultancies or scientists from institutes and specialist laboratories for detailed or special analyses with the agreement of Company.

Integration and participation of local personnel in the field team should be considered (Local Authorities representatives, scientists, experts, etc.) and the choice of participants shall be approved by the Company.

6. Organization of the study

6.1 General content of the study

The study consists of:

- **A bibliographic study** of all available documents (previous studies, maps, remote sensing studies,...) in order to identify the specific concerns of the type of environment,
- **A field survey** in order to acquire the environmental and general socio-economic data necessary for the study, including in-situ analysis, taking pictures, collecting samples of the different representative media (soil, sediments, air, water) as well as flora and fauna identification,...,
- **Laboratory analyses,**

- **An interpretation** of the results from field observations, in-situ and laboratory analyses, socio-economic data and data from the bibliographic study, ...,
- **Deliverables preparation** (production of a stand-alone document or in some cases limited to a section in the contents of the EIA).

6.2 Schedule

The Company defines a tentative schedule including:

- The date of the contract award,
- The estimated date for start-up the study,
- The time required for the acquisition of bibliographic data,
- The time necessary for personal and equipment mobilization/demobilization,
- The estimated duration of the field survey and the administrative authorization,
- The dates for deliverables issues.

The survey duration shall be adapted to the specificity of the study. In some cases, the field survey may need to be split in to several phases in order to take into consideration particular local situations (regulations, site access, climate, seasons, logistics...).

The final schedule of the study is approved by the Company Representative before starting any work. Any change in the work to be done or the time table shall also be approved by the Company Representative.

6.3 Field survey organization

The following minimum information shall be submitted by Contractor to the Company for approval, before the field survey mobilization, to help for the selection of the sampling locations and survey routes:

- A short description of the main characteristics of the concerned site (geography, bathymetry, meteorology, protected areas, sensitivities),
- Valid maps, directly usable for the field survey,
- A proposal for the site study perimeter, route and sampling locations,
- A list of bibliographical references and local contacts.

During the field survey, the surveyed locations shall be plotted on maps on a daily basis, and if possible in real time.

6.3.1 Field survey team

The personnel should include:

- Company:
 - A Company Representative or mandatory expert,
 - One or several project representatives (Optional).
- Contractor (indicative list to be adapted according to the project and the specific characteristics of the site):

- One senior Project manager,
- Experienced marine biologist(s),
- One engineer/technician specialized in marine physic-chemistry and sedimentology (who may be the same person than the marine biologist).
- One team of labourers experienced in sampling with corers and grabs.

Local experts, representatives from local Authorities or project partners may be integrated in the survey team on Company request or local authorities' requirements.

The role of the various participants shall be clearly defined especially regarding:

- Sampling decisions and procedures,
- Samples treatment, preservation and transportation,
- In-situ sea water and sediments analysis.

6.3.2 Logistics

Any logistics used for personnel local transportation (helicopter, vehicles, planes,...) shall be in accordance with Company safety requirements.

The marine survey vessel is chosen according to the bathymetric, sea and weather conditions prevailing in the zone to be sampled.

Contractor shall provide all necessary navigation and survey positioning equipment.

The vessel shall have all the equipment and material on board to ensure the safety of all personnel in accordance with regulation and Company requirements. This equipment shall be checked to ensure good working order.

In the case of *Nearshore* survey, two kinds of vessels can be required for the survey:

- The principal vessel to be used as logistics base and selected according to the prevailing bathymetric, sea and weather conditions in the zone to be sampled,
- An auxiliary vessel for accessing shallow water depths and berthing for studying the terrestrial side of the shoreline.

The minimum requirement for the vessels is listed in Appendix 2, but Company reserves the right to impose modifications in the particular specification and to audit the safety on board the vessel.

A short duration **helicopter (or small plane) survey** can be proposed for a preliminary survey of *Nearshore* areas with particularly difficult access, with approved landing points for observation.

Diving, rock climbing or speleological survey details shall be submitted to Company for approval.

6.3.3 Equipment

The Contractor shall provide all survey equipment and spares required to perform the survey in good operating conditions.

Any modification or additional material shall be justified and approved by the Company.