Santos

Bayu-Undan FSO Vessel Cleaning – Terms of Reference (PROPOSED as per MD 46/2017)

DCOM-520-EN-TSD-00002

PROJECT / FACILITY	FSO Liberdade
REVIEW INTERVAL (MONTHS)	No Review Required
SAFETY CRITICAL DOCUMENT	NO

Rev	Owner	Reviewer/s *Managerial / Technical / Site*	Approver
	Decommissioning HSSE Lead	**Bayu-Undan Decommissioning Facilities Lead**	**Project Manager (DoA)**
0	Glen Mitchell	Stephen Kretschmer	Mark Wood

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Rev	Rev Date	Author / Editor	Amendment
A	02/11/2022	MCC Environmental	Draft for Santos review
B	18/11/2022	MCC Environmental	Draft for Santos review
0	16/01/2023	MCC / Glen Mitchell	Issued as Proposed TOR

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Acronyms

Acronym	Description
ADB	Asian Development Bank
ANLA	Autoridade Nacional de Licenciamento Ambiental – National Authority for Environmental Licensing
ANPM	Autoridade Nacional do Petróleo e Minerais – National Petroleum and Minerals Authority
ANZECC	Australian and New Zealand Environment and Conservation Council
ANZG	Australian and New Zealand Guidelines
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
AQGs	Air Quality Guidelines
AS NZS	Australia and New Zealand Standards
CPSFRV	Country Partnership Strategy Final Review Validation
EDTL	Government of Timor-Leste
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
ENVID	Environmental hazard identification workshop
ESIA	Economic and Social Impact Assessment
EU	European Union
EVAWC	Ending Violence Against Women and Children
DO	Santos Dili Office
DoA	Designation of Authority
FSO	Floating Storage and Offloading vessel
GRI	Global Reporting Initiative
HSSE	Health, safety, security and environment
IEC	International Electrotechnical Commission
IFC	International Finance Cooperation
IUCN	International Union for Conservation of Nature (IUCN
IMDG	International Marine Dangerous Goods Code 1994
IMO	International Maritime Organisation
ISO	International Standards Organisation
IPP	Independent Power Producer
JPDA	Joint Petroleum Development Area
LEL	Lower Explosion Level
MD	Ministerial Diploma

NAEL	National Agency for Environmental Licensing
NAGD	National Assessment Guidelines for Dredging (2009)
NHMRC	National Health and Medical Research Council (Australian Government)
NORM	Naturally occurring radioactive material
PPE	Personal protective equipment
RDTL	República Demokrátika Timór-Leste - Democratic Republic of Timor-Leste
SOLAS	International Convention for the Safety of Life at Sea 1974
STO	Santos
TDS	Total Dissolved Solids
TEU	Twenty-Foot Equivalent Unit
TOR	Terms of Reference
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea (1982)
UNTL	Universidade Nacional Timor Lorosa'e
WHO	World Health Organization
WTP	Water Treatment Plant

Abbreviations

Acronym	Description
g	gram
km	kilometre
L	litre
m	meter
m^3	cubic metres
mg	milligram
MW	Megawatt
t	tonne
µg	microgram

1 Introduction

Ministerial Diploma No. 46 / 2017 Requirements (the Regulations, as established in Decree-Law no. 5/2011, the Law of Environmental Licensing)
Chapter III: Scope of Category A Projects
Based on the results of the scoping phase, the proponent must prepare a proposal for Terms of Reference for the environmental assessment of any project proposed Category A, based on the formats of Terms of Reference established in Appendix III of the regulation.
Appendix III of the Regulations: Format for the Terms of Reference of the projects of the Category A
The Terms of Reference for the proposed Category A Project contains information as per Table 1.1 below

Table 1-1: Terms of Reference Requirements

Terms of Reference Requirement	Relevant Section of this document
1. Introduction	**Section 1**
2. Background Information	**Section 2**
3. Proponent Details	**Section 3**
4. Details of Consultants	**Section 4**
5. Legal Requirements	**Section 5**
6. Study Area	**Section 6**
7. Scope of Work **a. Description of the Proposed Project** **b. Environment Description** **c. Analysis of Alternatives** **d. Determining the potential impacts** **e. Analysis and evaluation** **f. Environmental Management Plan** **g. Public Consultation**	**Section 7**
8. Flexibility Statement	**Section 8**

Ministerial Diploma No. 46 / 2017 Requirements
Annex III (1): Introduction
Indicate the purpose of the Terms of Reference (TOR).

The Project and environmental licence application relates to the decontamination cleaning of residual contaminants from cargo tanks and topsides process pipework on the FSO Liberdade (the FSO) to prepare the vessel for international export and final dismantling and recycling.

The scoping phase of the FSO Liberdade Decontamination Cleaning Project (The Project) was conducted in alignment with the requirements of Ministerial Diploma No. 46 / 2017 and Decree-Law no. 5/2011.

The scope of the project was investigated using desktop reviews of available reports, contracting of external surveys and studies, engaging with Regulators and Stakeholders and conducting assessments of potential project impacts. The scoping phase has helped to inform this Terms of Reference document.

The purpose of the Terms of Reference is to identify and provide a description of the potential impacts to:

- The Natural Environment
- The Socio-economic Environment
- Community Health and Safety

and outlines the methodology for the management and monitoring of these.

2 Background Information

Ministerial Diploma No. 46 / 2017 Requirements
Annex III (2): General information
Briefly describe the need for goals and main components of the project proposal, as well as any agreements entered into with the Environmental Authority.

2.1 Project Goals

The Santos Decommissioning Project objective is the safe completion of all activities and well managed environmental controls with:

- No negative impact to the health and safety people and the community
- No negative impact to the natural environment
- A Positive Socioeconomic Impact to the workforce, service providers and greater community

2.2 Main Components of the Project

The Bayu-Undan Field covers an area of approximately 25 kilometres (km) by 15 km and is located 250 km south of Timor-Leste and 500 km north of the Australian mainland. The FSO, named Liberdade, provides the storage and offloading facility for processed products.

The Bayu-Undan field is approaching the end of its field life. The FSO Liberdade storage tanks and topsides process systems are to be cleaned of residual contaminants prior to international export of the FSO and final dismantling and recycling. It is proposed that the FSO is cleaned alongside the newly constructed wharf in Timor-Leste, Timor Port (**Figure 2-1**).

Figure 2-1: Representation of FSO Liberdade alongside in Timor Port

The objective of the overall cleaning activity is to remove residual contaminants including mercury and other naturally occurring contaminants which may be present in the FSO process systems. This material may be present as scale or within the surface substrate. These systems will be flushed with a chemical solution to extract the residue. The chemical solution will then be neutralised and filtered to remove any contaminants until the wastewater meets acceptable criteria. The treated wastewater will not be discharged within the Timor Port or within Timor-Leste waters and will remain in, and depart with, the FSO.

The solid waste produced through the cleaning process, will be collected and transferred into UN approved drums that especially cater for hazardous waste. The drums will be transferred into shipping containers and exported from Timor-Leste to an approved, licenced international facility to manage the waste outside of Timor-Leste.

The chemical cleaning process may create a vapour and therefor, the tanks will be sealed with emissions filtered so that no harmful emissions can occur outside of the FSO tanks and process systems.

No hazardous waste will be disposed of in Timor-Leste as currently, the country has no hazardous waste disposal facilities.

Santos will conduct environmental monitoring of sediment, biota, water and air quality to assess any potential impacts from the activities within Timor Port and the surrounding local environment. This will include the following monitoring activities:

- Baseline environmental monitoring prior to commencement of activities,
- Ongoing environmental surveillance monitoring during activities,
- Final environmental re-baseline monitoring after completion of the activities.

2.3 Agreements Entered Into

Santos will not dispose of any of the Hazardous Waste streams produced by the decontamination cleaning process in Timor-Leste whilst there are no facilities for hazardous waste management in country.

All hazardous waste taken into the country with the FSO or produced whilst the FSO is alongside in Timor Port, will either be transported to Australia as per the Bilateral agreement or with the FSO to the final disposal yard. See the Australian Regulations for *Hazardous Waste (Regulation of Exports and Imports) (Imports from the Democratic Republic of Timor-Leste) Regulations 2003 - Statutory Rules No. 56, 2003* made under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989.*

3 Proponent Details

Ministerial Diploma No. 46 / 2017 Requirements
Appendix III (3): Proponent details

Santos NA (19-12) Pty Ltd (Santos) is the Operator of the Bayu-Undan Field, located in Timor-Leste offshore waters, and in petroleum titles PSC-TL-SO-T 19-12 and PSC-TL-SO-T 19-13.

Key Bayu Undan Decommissioning Project Team members:

- Project Manager – Lincoln Palmer
- Package Lead Removal & Disposal - Stephen Kretschmer
- Package Lead for FSO Decontamination – Ryan Dack
- Regulatory Compliance Lead – Mike Prime
- **EHSS Lead – Glen Mitchell**

3.1 Details of Nominated Liaison Person

Details for Santos' nominated liaison person for the activities covered by this Terms of Reference document are as follows:

Name:	**Glen Mitchell (HSSE Lead – Bayu-Undan Decommissioning)**
Business address:	Level 7, 100 St Georges Terrace, Perth, WA 6000
Telephone number:	+61 (0)436 662 457
Email address:	glen.mitchell@contractor.santos.com

4 Details of Consultants

Ministerial Diploma No. 46 / 2017 Requirements
Appendix III (4): Details of consultants and experts to prepare the Environmental Impact Statement and Environmental Management Plan

4.1 Details of Environmental Licencing Support Consultants

Santos has contracted a number of competent Consultants to assist with the management of the Environmental scope involved with bringing the FSO Liberdade to Timor-Lest for cleaning. These environmental activities include:

- Timor-Leste Environmental Licencing Application
- Socioeconomic Impact Assessment
- Environmental Baseline Survey
- Environmental Monitoring
- The Contracted Company and the nominated competent Consultant details are listed below.

4.1.1 Timor-Leste Environmental Licencing Application

4.1.1.1 MCC Environmental

MCC Environmental (MCC) has been engaged to assist Santos in preparing all necessary environmental documentation relating to the decommissioning of the Bayu-Undan FSO Liberdade, including the Environmental Impact Statement and Environmental Management Plan.

MCC offer a pool of skilled professionals with proven success in developing and providing environment, climate, and sustainability services. they provide the optimum fit to integrate with Clients to ensure they provide the best outcome for Client projects.

MCC is committed to developing long term relationships with clients and delivering fit for purpose products that are tailored to each project. They are a known and trusted company that deliver high quality reports and products and always meet client's needs.

MCC have developed excellent relationships with regulators and maintain current knowledge of latest research and guidance to help guide Clients through the approvals processes. MCC staff have successfully completed Global Reporting Initiative (GRI) Accredited Sustainability Reporting training and as a member of the GRI community are able to offer the latest advice and updates to the standards.

Name:	**Tyron Miley (Environment - Decommissioning Lead)**
Business address:	The Wentworth, 300 Murray Street, Perth, WA, 6000
Telephone number:	+61 (0) 438 222 602
Email address:	tyron@mccenvironmental.com.au

Experience:

June 2021 - Present · 1 year 8 months:

MCC Environmental / TCAM Environmental
Position: Environmental Professional

April 2019 - November 2020 · 1 year 8 months

Santos Ltd

Position: Senior Advisor - Environmental Approvals

July 2017 - April 2019 · 1 year 10 months

ConocoPhillips

Position: Environmental Specialist

June 2013 - July 2017 · 4 years 2 months

Jacobs

Position: Senior Environmental Consultant

October 2011 - May 2013 · 1 year 8 months

RPS Australia Asia Pacific

Position: Environmental Consultant

November 2009 - October 2011 · 2 years

City of South Perth

Position: Environmental Officer

4.2 Economic and Social Impact Assessment (ESIA)

Environmental, Social and Economic Impact Studies will be carried out by competent Consultants. Circle Advisory and Tebedai Solutions have been contracted to conduct Economic and Social Impact Studies while Stantec will carry out the Baseline Environmental Survey and the Environmental Monitoring Program through to the Final Baseline once the FSO has departed Timor Port.

Elemental Consulting Services Pty. Ltd. Was used to carry out the Environmental Monitoring Study. These Consultants and the primary focal point experience has been listed below.

4.2.1 Business name: Circle Advisory Pty Ltd

Circle Advisory is a social and economic impact management advisory company. Established in 2014, who work with all sectors of society, private, public and community.

Areas of Work Include:

- Social and Economic Impact Assessment and Management
- Social Performance and Social Licence
- Local Content
- Aboriginal Land, Native Title and Cultural Heritage Management
- Community and Stakeholder Consultation and Engagement
- Government Relations and Approvals

Circle Advisory works with clients to help them assess and manage social and economic impacts (risks and opportunities) throughout the resource development cycle.

They offer bespoke and practical advice and services to help clients chart the optimal course in social performance as well as on the ground, hands on services and support to clients to build their own internal capacity.

Services are demand based, providing support for the management of specific issues, programs or projects, or at full enterprise level (tap on/tap off). Circle Advisory aims to provide effective, appropriate and efficient conditions that result in realistic, workable and measurable outcomes.

Name: **James Kernaghan**

Telephone Number: +61 (0) 419 835 704

Email address: james@circleadvisory.com.au

Experience:

January 2014 - Present · 9 years 1 month
Circle Advisory Pty Ltd
Position: Managing Director

January 2006 - January 2014 · 8 years 1 months
Eni Australia
Position: External Relations and Communications Manager, Australia and Timor-Leste

1996 - 2006 · 10 years
Woodside Energy
Position: Corporate Affairs Manager

January 1987 - June 1994 · 7 years 6 months
BHP Billiton
Position: Site Administrator

4.2.2 Business name: Tebedai Consultants

Tebedai Solutions, Lda (E.T. Solutions Lda.) was established in May 2013 as a local agency consisting of young Timorese with strong and qualified professional experience in providing developmental and professional training to individuals, government employees and the private sector.

E.T. Solutions, Lda was established with the purpose of contributing to improving the quality of human resources of private and public institutions through a teaching model that is contextually based on the culture and norms of the Timorese people. We strive to offer continuous services that serve with one objective “Empowering People and Organizations as the everyday’ milestone.

Core Services:

- Soft Skills Training and Team Building
- HRM and Administrative Training
- Social Services & Community Development
- HRM Diagnosis and Research
- Monitoring & Evaluation
- Event Organizer
- Recruitment Services
- Business Development
- Finance & Procurement

Name: **Zofimo Hanjan Corbafo**

Telephone Number: +670 7731 1646

Email address: zozohanjam@gmail.com

Experience:

December 2022 - September 2023

WTI Advisors Ltd
Position: National Consultant to Support Timor-Leste Accession to the World Trade Organizations

October 2022 - January 2023

Asian Development Bank (ADB)
Position: National Consultant to Carry Socio-Economic and Gender Survey to ADB and Government of Timor-Leste (EDTL) in Preparation and Tendering of up to 100 MW Solar Independent Power Producer (IPP) project

October 2022 - July 2023

ARUP
Position: Social Development Gender Equality and Social Inclusion Consultant – Southeast Asia Transport Project Preparatory Phase 2 – Project Preparation for Timor-Leste Public Transport Project

September 2022 - November 2022

D-Eight VDA Lda
Position: GEDSI Adviser for GEDSI – Sensitive Market System Assessment for the Better Food Better Health (BFBH) Project of World Vision Timor-Leste

May 2022 - April 2023

Asian Development Bank (ADB)
Position: Gender Consultant

March 2022 To: July 2022

TPF Engenharia
Position: Social and Gender Specialist for ADB's East to Southcoast Road Connectivity Project

January 2022 - May 2022

FORSAE
Position: Gender and Social Inclusion Consultant- UNDP's Assessment to Public Defensor Office

December 2021 - April 2021

The Asia Foundation in Timor-Leste
Position: Gender and Social Inclusion Consultant to conduct assessment and stakeholder consultation to help Government of Timor-Leste develop its roadmap to achieve gender and inclusion targets for rural infrastructure as stated in Maubisse Declaration

October 2021 - March 2022

UN WOMEN in Timor-Leste
Position: National Consultant to develop Country Gender Equality Profile for Timor-Leste

October 2021 - November 2021

CARDNO Emerging Markets (Australia)
Position: Social/Resettlement Specialist to support International Finance Cooperation (IFC) with the engagement to provide technical advice and assistance for the implementation of The Timor-Leste Affordable Housing Project

August 2021 - September 2021

ROM Global (Results-Oriented Monitoring) - External Monitoring System of the European Commission in Brussels, Belgium
Gender–based Violence in Timor-Leste" funded by European Union and implemented by Plan International in Timor-Leste

February 2021 - July 2021

The Independent Evaluation Department (IED) of the Asian Development Bank (ADB) in Manila, Philippine.
Position: Evaluation Specialist to undertake the Country Partnership Strategy Final Review Validation (CPSFRV) of ADB support to Timor-Leste during 2016–2022.

November 2020 - February 2021

Morrissey Consulting International (MCI) Consulting Services – Contracted by International Labour Organization
Position: National Consultant Independent Evaluation of "The Roads for Development – support Program"

July 2020 - December 2020

Cardno Emerging Markets (Australia)
Position: Social Impact (Resettlement) Consultant to support IFC and Government of Timor-Leste on Environmental and Social Scoping Study for Proposed Dili Airport Redevelopment

January 2020 - June 2020

OASIS, Unipessoal Lda (Timor-Leste) – Contracted by TETRA TECH International Consulting based in USA
Position: Resettlement Specialist to support the project of Feasibility Study to Drainage Wastewater Management Construction that to be funded by Millennium Challenge Cooperation (MCC) Funds from USA to Timor-Leste.

August 2016 - February 2017

Sustainable Solutions Lda (Timor-Leste)
Position: Curriculum Development Consultant – Ending Violence Against Women and Children (EVAWC) Program

Business name: **Tebedai Consultants**

Name: **Cancio Monteiro**

Telephone Number: +670 7731 1646

Email address: cancio.monteiro@untl.edu.tl

Experience:

2022

UNTL for ERA/ILO
Agro-forestry project on the feasibility of operationalization of CCI-TL MoU with the MoPW.
Position: Key Experts – Member

16 September — 10 November 2021

UNDP
Position: Negotiator for Accelerating Clean Energy to Reduce Inequality

31 May—31 August 2021

UNDP
Position: Negotiator for Supporting Flood Response and Recovery Project

2017—2019

National Agency for Academic Assessment and Accreditation (ANAAA)
Position: National Assessor of ANAAA for Programmatic Assessment, New Academic Program Registration and Higher Education Progress Report Assessment

October/2009—Present

Universidade Nacional Timor Lorosa'e (UNTL)
Position: Senior Lecturer at the Department of Electronics and Electrical Engineering

From—To: January-February 2007

UNMIT
Position: Interpreter for UNPOL in Criminal Investigation

October/2005—September/2009

Universidade Nacional Timor Lorosa'e (UNTL)
Position: Assistant Lecturer at the Department of Electronics and Electrical Engineering

4.3 Environmental Baseline Survey

4.3.1 Business name: Stantec

In addition to the local experience gained since 2017, the Stantec team will also be supported by Daniel Hunter, who currently leads Cardno, now Stantec's consulting business in Timor-Leste. Daniel has been delivering projects in Timor-Leste since 2014. Over this time, he has established valuable working relationships with many key Government and Private stakeholders (including ANPM and other relevant regulatory authorities) and has been involved in the delivery and technical oversight of many major development projects in the country. He has been responsible for establishing and maintaining client relationships, leading projects, managing local operations (including managing a local team) and leading many corporate responsibility initiatives. Key projects Daniel has provided leadership to include (but not limited to):

- Tibar Port Dredging Environmental Monitoring Program on behalf of China Harbour Timor and Timor Ports
- Dili Airport upgrade and runway extension Environmental & Social Scoping Study on behalf of IFC
- Sunrise LNG Project Owners Engineer Technical and Environmental Advisory Services
- Tibar Port Quarry A HV Pylon geotechnical and civil structural baseline assessment (to support ANPM quarry licence application, on behalf of CHEC
- EIS for Tibar Port, to support $2M FEED on behalf of Timor Ports
- EIS for $USD 350M Timor-Leste Cement Project, Baucau, on behalf of TL Cement (first Category A EIS in country)
- Bathymetry and Marine Survey to support EIS for proposed materials handling jetty for TL Cement, Timor-Leste
- Kitan field (Timor-Leste) Decommissioning Comparative Options Assessment on behalf of Eni.

Name: **Daniel Hunter**

Telephone Number: +61 (08) 6222 7000

Email address: daniel.hunter@cardno.com.au

Experience:

May 2018 - Present · 4 years 9 months

Cardno / Stantec

Position: Principal Environmental Consultant / Director Consulting, Timor-Leste

Sep 2016 - May 2018 · 1 year 9 months

Advisian

Position: Country Director, Timor-Leste | Principal Environmental Consultant

Apr 2013 - Jun 2015 · 2 years 3 months

WorleyParsons

Position: Manager Environmental Planning and Management

4 year 7 months

KBR

Position: Manager Environment - Minerals, Asia Pacific

3 years 1 month

Sinclair Knight Merz

Position: Senior Environmental Project Manager

6 years 7 months

Victorian Department of Primary Industries

Position: Environmental Assessment Coordinator

1996 - 2000 · 4 years

Parks Victoria

Position: Research Wildlife Biologist (P/time)

4.3.2 Environmental Monitoring Study

4.3.2.1 Business Name: Elemental Consulting Services Pty Ltd (ECS)

Santos completed a study during 2022 to determine the area and extent of Environmental Monitoring that would be required if the FSO Liberdade was taken into Timor Port for cleaning. Elemental Consulting Services completed this Study which is now the basis of the Environmental Monitoring Package that will be completed prior to, during and after the FSO arrives in Timor Port.

Elemental Consulting Services Pty Ltd (ECS) is a professional consulting company which specialises in marine, terrestrial and aquatic environmental management.

They provide complete environmental management solutions for all onshore and offshore industries.

ECS are passionate about environmental protection and what they do, but we also believe that industry can co-exist with healthy environments when managed in the appropriate way.

ECS was founded and is operated out of Perth but can work digitally to deliver its services to clients across the country and abroad.

Name: **Tye Pope**

Telephone Number: +61 (0) 425 890 116

Email address: tye.pope@elementalconsultants.com.au

Experience:

Jan 2018 – Present: 5 years 1 month
Elemental Consulting Services
Position: Managing Director

November 2011 - December 2017: 6 years 2 months
Chevron
Position: Environmental Supervisor

May 2010 - November 2011: 1 year 7 months
Clough
Position: Senior Marine Environmental Advisor

November 2009 - April 2010 · 6 months
Woodside Energy
Position: Senior Environmental Advisor

November 2005 - September 2009: 3 years 11 months
URS Corporation,
Position: Senior Marine Environmental Advisor

January 2005 - October 2005 · 10 months
Western Australian Marine Research Laboratories (Dept of Fisheries)
Position: Technical Research Assistant

January 2005 – October 2005: 10 months
The University of Western Australia
Position: Research Assistant

4.3.3 FSO in Timor Port Environmental Monitoring Package

Santos has, as part of the planning for the FSO Liberdade to go to Timor Port for cleaning of the Hydrocarbon tanks and process systems, identified the requirement for an environmental monitoring program. At the time of submitting the Terms of Reference to ANLA, the tender for this scope of work had been issued to the market. Santos has received responses to the tender, however, there has not yet been an award for the Scope of Work and therefore, Santos cannot, at this stage, provide details of the Company or the Nominated Liaison.

This Scope of Work consists of:

Monitoring

To manage the cleaning phase and to ensure it complies with local regulatory conditions, Santos is proposing a rigorous monitoring program consisting of four stages:

1) Sampling and testing prior to the arrival of the FSO to define a baseline condition and alert Company to any areas of concern
2) Sampling and testing of critical areas immediately prior to the arrival of the FSO to update the baseline condition
3) Sampling, testing and monitoring during the cleaning of the FSO Liberdade to alert Company to any changes in the local environment
4) Sampling and testing after completion of the cleaning to demonstrate decontamination activities have not impacted the environment or identify where impacts have occurred if applicable.

The key objectives of the monitoring program are to:

- Detect the presence of oil and oil-derived (petrogenic) hydrocarbons in seawater, marine sediments, marine biota, soils, and air
- Determine the concentrations of the hydrocarbons
- Benchmark the level of individual hydrocarbons against trigger levels of concern for aquatic life and human health
- Detect the presence of oil and oil-derived (petrogenic) heavy metals in seawater, marine sediments, marine biota, soils, and air
- Determine the concentrations of the heavy metals; and
- Benchmark the level of individual heavy metals against trigger levels of concern for aquatic life and human health

Santos will notify ANLA once a Contractor has been awarded this scope.

5 Legal Requirements

Ministerial Diploma No. 46 / 2017 Requirements
Appendix III (5): Legal Requirements
Identify legislation and any guidelines that regulate the performance of the EIA study and the elaboration of the Environmental Impact Statement (EIS) and Environmental Management Plan (EMP). *This section should also identify any other laws, regulations, guidelines, or standards that regulate quality, environment, health and safety, protection of protected areas and other sensitive areas, the protection of vulnerable species, control of land use, and other relevant legislation.*

5.1 EIS Requirement and Preparation

Government licensing (or approval) of this project is required under Timor-Leste *Decree-Law 5/2011 Environmental Licensing* prior to cleaning the FSO in Timor Port. In accordance with Decree-Law 5/2011, the Bayu-Undan FSO Vessel Cleaning is classified as a Category A project and as such it is subject to the preparation of a Project Document, Terms of Reference (ToR), Environmental Impact Assessment (EIA) which will produce an EIS and an EMP.

This ToR has been prepared to meet the requirements of the Government of Timor-Leste, to guide the preparation of the EIS in accordance with the project approval conditions. The EIS will be prepared by the suitably qualified and experienced environmental consultants detailed in **Section 4**.

The EIA shall identify and assess the environmental, social, and economic risks and impacts of the proposed project from both planned activities and unplanned events, and incorporate proposed measures to prevent, reduce or offset any significant negative impacts.

Local regulations require that the cleaning process is undertaken safely and without compromising local environmental values and objectives.

5.2 Environmental Assessment and Approvals Process

Regulatory approval of this project is undertaken by the National Environmental Licensing Authority (ANLA). The below **Figure 5-1** outlines the environmental licensing process followed for a category A project.

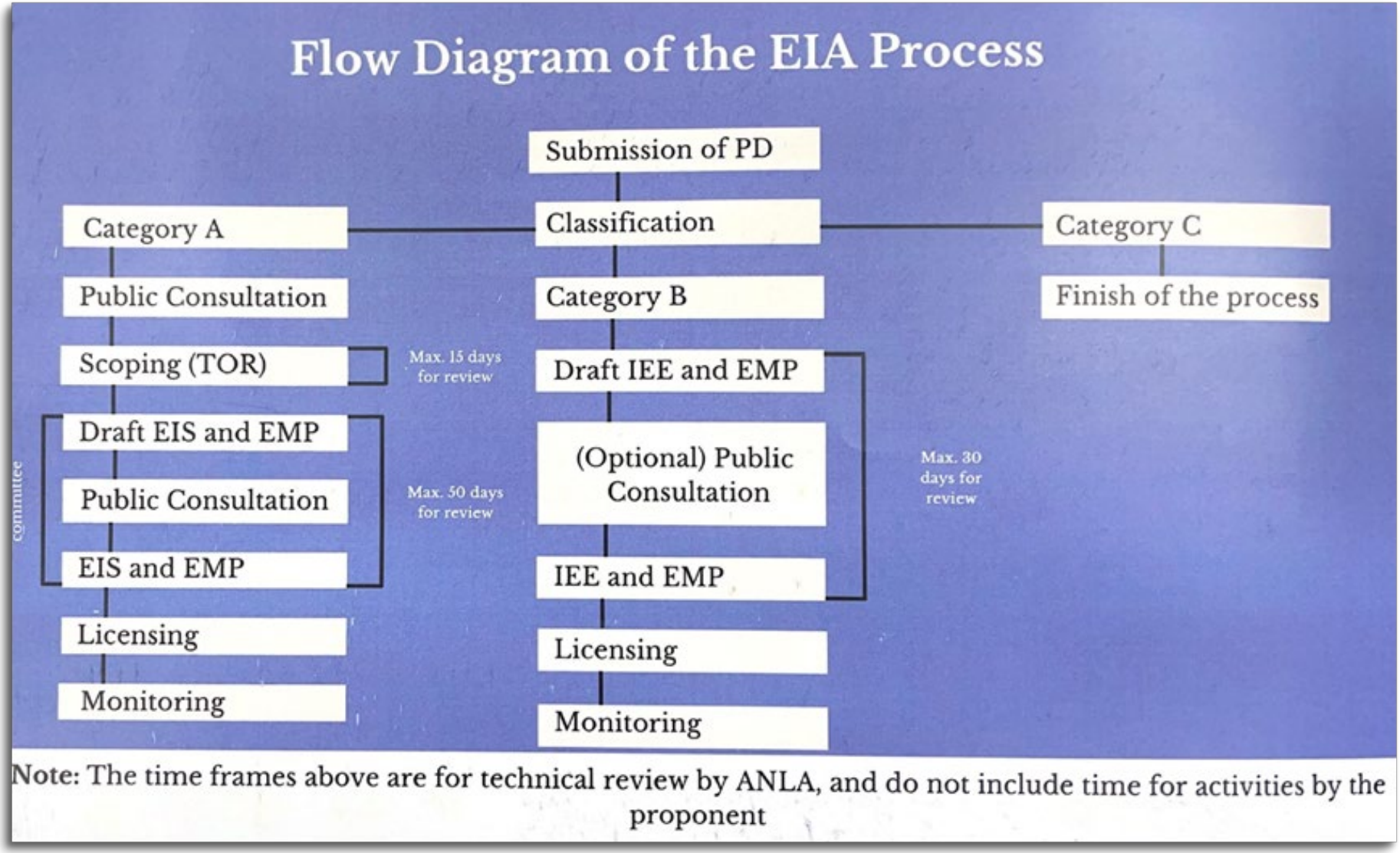

Figure 5-1: Environmental Licensing Process - Category A

5.3 Relevant Timor-Leste Legislation

The Timor-Leste legislative authorities and frameworks relevant to the FSO cleaning activities in Timor Port are outlined below. Information on how the project will comply with this relevant legislation will be provided in the EIS.

5.3.1 National Maritime Transport Authority (DNTM)

- Decree Law 4/2003

5.3.2 National Petroleum and Minerals Authority (ANPM)

- ANPM Decommissioning Decree Law xx/2022 (Draft)

5.3.3 National Environmental Licensing Authority (ANLA)

- Decree Law 26/2012 Environmental Basic Law
- Decree Law 5/2011 Environmental Licensing
- Decree Law 39/2022 Environmental Licencing
- Decree Law 6/2020 Establishing the Legal Regime for the Protection and Conservation of Biodiversity
- Ministerial Diploma 44/2017 Regulation on Impact and Benefit Agreements
- Ministerial Diploma 45/2017 Regulations Concerning the Statutes and Rules of Procedure for the Assessment Committee for the Management of the Environmental Assessment Process for Category A Projects
- Ministerial Diploma 46/2017 Regulation on Requirements of Detailed Screening, Definition of Scope and Terms of Reference, Environmental Impact Statements and Environmental Management Plans for Environmental Evaluation
- Ministerial Diploma 47/2017 Regulation on Procedures for Public Consultation and requirements during the Environmental Assessment Process
- UNTAET Reg. 19/2000 On Protected Places
- UNTAET Guideline on Ambient Noise (2002)

5.3.4 General Inspector of Work (IGT)

- Health and Safety Plan
  - Law 4 / 2012 – Labor Code
  - Decree Law 18/2020 Onshore Petroleum Operations (Ch. XVI; Art. 120) (used as a reference pending issue of the New Decommissioning Decree Law)
- Emergency Response Plan
  - Law 4/2012 – Labor Code
  - Decree Law 18/2020 Onshore Petroleum Operations (Ch. XVI Art. 131) (used as a reference pending issue of the New Decommissioning Decree Law)

5.3.5 Directorate of Quarantine and Biosecurity (DQB)

- Decree Law 21/2003 Quarantine and Sanitary Control on Goods Imported and Exported (Ch. IV Art. 46)

5.3.6 Ministry of Finance / T-L Customs Authority

- Decree Law 11/2004 Customs Code of Timor-Leste (Ch. II, Art.28; Ch. III, Art. 33)

5.3.7 Secretary of State for The Environment

- Decree Law 26/2012 Environmental Basic Law (Ch. V; S. 1; Art. 38)

5.3.8 Ministry of Agriculture, Forestry and Fisheries

- Decree Law 1/2006 General Regulation on Quarantine

5.3.9 National Directorate for Climate Change

- Decree Law 36/2012 Import / Export of Any Substance Damaging the Ozone Layer

5.3.10 National Directorate of Pollution Control

- Decree Law 37 / 2020 Sale, Import and Production of Bags, Packaging and other Plastic Objects

5.3.11 National Environmental Licensing Authority (ANLA) / General Inspector of Work (IGT)

- Decree Law 5/2011 Environmental Licencing (Ch. X; Art. 31)
- Decree Law 34/2016 Second Amendment to the Statute of the General Inspector of Work
- Decree Law 39/2022 Environmental Licencing

5.3.12 Timor-Leste Draft Legislation applicable to the project

- ANPM Decommissioning Decree Law xx/2022 (Draft)

5.4 International Agreements and Conventions

In addition to Timor-Leste legal requirements and guidelines, the EIS shall comply with the following key international environmental agreements and conventions that apply to the FSO cleaning activities in Timor Port. Information on how the project will comply with these relevant agreements and conventions will be provided in the EIS.

5.4.1 Convention for the Control of Transboundary Movements of Hazardous Wastes and their Disposal 1989 (Basel Convention)

This international convention has been established to reduce the movement of 'hazardous wastes' (as defined in the convention) between countries with a goal of reducing the movement of 'hazardous wastes' from developed nations to less developed nation.

Although Timor-Leste has not ratified the Basel Convention, Santos will ensure it complies with the Basel Convention for safe disposal of hazardous waste.

5.4.2 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (known as the London Protocol)

The London Convention contributes to the international control and prevention of marine pollution by prohibiting the dumping of certain hazardous materials. In addition, a special permit is required prior to dumping of a number of other identified materials and a general permit for other wastes or matter.

5.4.3 Hong Kong Convention

The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (the Hong Kong Convention is aimed at ensuring that ships, when being recycled after reaching the end of their operational lives, do not pose any unnecessary risks to human health, safety and to the environment. The Hong Kong Convention intends to address all the issues around ship recycling, including the fact that ships sold for scrapping may contain environmentally hazardous substances such as asbestos, heavy metals, hydrocarbons, ozone-depleting substances and others. It also addresses concerns raised about the working and environmental conditions at many of the world's ship recycling locations.

5.4.4 Minamata Convention on Mercury 2021

Aims to reduce the risks to human health and our environment from mercury used in imported and manufactured products.

5.4.5 Regulation (EU) No 1257/201 on ship recycling and amending Regulation (EC) No 1013/2006 and Directive 2009/16/EC

Aims to reduce the negative impact of ship recycling from EU flagged vessels. The occurrence of hazardous materials on board is restricted and an Inventory of Hazardous Materials is required. EU flagged vessels may only be recycled in facilities that are approved by the EU. Ship recycling facilities can be located in various countries where the facilities are approved to adhere to certain standards in regard to recycling practices, waste management and labour rights. A list of suitable recycling facilities has been established.

5.4.6 Convention on the Conservation of Migratory Species of Wild Animals 1979 (Bonn Convention)

The Bonn Convention aims to improve the status of all threatened migratory species through national action and international agreements between range states of particular groups of species.

5.4.7 United Nations Convention on Biological Diversity 1992

An international treaty to sustain life on earth.

5.4.8 Convention on Oil Pollution Preparedness, Response and Co-operation 1990 (OPRC 90)

This convention comprises national arrangements, or in co-operation with other countries, for responding to oil pollution incidents from ships, offshore oil facilities, seaports and oil handling. The convention recognises that in the event of pollution incident, prompt and effective action is essential.

5.4.9 International Convention for the Prevention of Pollution from Ships 1973/1978 (MARPOL 73/78)

This Convention and Protocol (together known as MARPOL 73/78) build on earlier conventions in the same area. MARPOL is concerned with operational discharges of pollutants from ships. It contains six Annexes, dealing respectively with oil, noxious liquid substances, harmful packaged substances, sewage, garbage, and air pollution. Detailed rules are laid out as to the extent to which (if at all) such substances can be released in different sea areas. The legislation giving effect to MARPOL in Australia is the Protection of the Sea (Prevention of Pollution from Ships) Act 1983, the Navigation Act 2012 and several Parts of Marine Orders made under this legislation.

5.4.10 International Convention for the Safety of Life at Sea (SOLAS) 1974

This convention is generally regarded as the most important of all international treaties concerning the safety of merchant ships Implemented in the Air Navigation Act 1920.

5.4.11 International Marine Dangerous Goods (IMDG) Code 1994

The IMDG Code was developed as a uniform international code for the transport of dangerous goods by sea covering such matters as packing, marking, labelling and stowage of dangerous goods with particular reference to the segregation of incompatible substances.

5.4.12 United Nations Convention on the Law of the Sea (UNCLOS) (1982)

Part XII of the convention sets up a general legal framework for marine environment protection. The convention imposes obligations on State Parties to prevent, reduce and control marine pollution from the various major pollution sources, including pollution from land, from the atmosphere, from vessels and from dumping (Articles 207 to 212). Subsequent articles provide a regime for the enforcement of national marine pollution laws in the many different situations that can arise. Timor-Leste, Australia and Indonesia are all parties to UNCLOS, which was signed in 1982 and came into effect in 1994.

5.4.13 International Convention for the Control and Management of Ships' Ballast Water and Sediments (Ballast Water Convention) 2004

The IMO has been addressing the problem of invasive marine species in ship's ballast water since the 1980s. Ballast water and sediments guidelines were adopted in 1991 and the ballast water convention was adopted in 2004. Recent accession by Finland has triggered the final entry into force of these international requirements. As a result, the International Convention for the Control and Management of Ships Ballast Water and Sediment will enter into force on 8th September 2017 (IMO Briefing 22 2016). It aims to prevent the spread of harmful aquatic organisms from one region to another, by establishing standards and procedures for the management and control of ships' ballast water and sediments. Ballast Water Management systems must be approved by the Administration in accordance with this IMO Guidelines.

5.4.14 The Montreal Protocol on Substances that Deplete the Ozone Layer

The act is an international treaty designed to protect the ozone layer by phasing out the production of numerous substances that are responsible for ozone depletion.

5.4.15 The Paris Agreement

The Agreement establishes a framework for managing global climate change that relies on nations setting Nationally Determined Contributions and establishing domestic policies to meet them. The Paris Agreement entered into force on 15 April 2016, on signing of the treaty by the Minister of Commerce, Industry and Environment of Timor-Leste.

5.4.16 The Vienna Convention for the Protection of the Ozone Layer

The convention acts as a framework for the international efforts to protect the ozone layer. However, it does not include legally binding reduction goals for the use of chlorofluorocarbons, the main chemical agents causing ozone depletion.

5.4.17 United Nations Framework Convention on Climate Change (1992)

The objective of the convention is to stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous interference with the climate system.

5.4.18 World Health Organization (WHO), 2006: Air Quality Guidelines (AQGs) for PM10

World Health Organization Air Quality Guidelines (WHO AQGs) provide an international reference that countries, particularly those without the resources to conduct their own assessment, can use to develop AAQSs.

The 2006 WHO AQGs are composed of a single guideline value and interim targets (ITs). The interim targets provide a stepwise approach to achieving the air quality guideline value. The guideline values can be used by developed countries, with the capacity to implement a strict AAQS, while developing countries, with higher levels of air pollution, could select an interim target level achievable based on their own air quality management infrastructure, and progress towards the AQG value at own pace.

5.4.19 IFC's Performance Standard on Environment and Social Sustainability 2012

The Sustainability Framework comprises IFC's Policy and Performance Standards on Environmental and Social Sustainability. The Policy on Environmental and Social Sustainability describes IFC's commitments, roles, and responsibilities related to environmental and social sustainability. IFC requires its clients to apply the Performance Standards to manage environmental and social risks and impacts so that development opportunities are enhanced.

There are eight performance standards including:

1. Assessment and Management of Environmental and Social Risks and Impacts
2. Labour and Working Conditions
3. Resource Efficiency and Pollution Prevention
4. Community Health, Safety and Security
5. Land Acquisition and Involuntary Resettlement
6. Biodiversity Conservation and Sustainable
7. Management of Living Natural Resources

8. Indigenous Peoples
9. Cultural Heritage

All IFC performance standards, except for No. 5 and 8, are relevant to the activity.

5.4.20 Environmental Baseline Surveys and Monitoring Program Standards

The Environmental Baseline Survey and Monitoring Program will be completed by a competent Contractor operating under strict guidelines and standards. These are listed below:

+ A suite of impact and reference sampling stations will be monitored and compared with local and/or Australian environmental standards (i.e., ANZECC & ARMCANZ 2000).

Industry Codes and Standards

+ IFC (2017) EHS Guidelines: Ports, Harbours, and Terminals.
+ IFC (2012). Guidance Note 1: Assessment and Management of Environmental and Social Risks and Impacts
+ IMO (2005). Guidelines for Sampling and Analyses of Dredged Material Intended for Disposal at Sea.
+ IMO (2014). Guidelines on the Assessment of Dredged Material.
+ Minamata Convention on Mercury (2021) Guidance on monitoring of mercury and mercury compounds to support the effectiveness evaluation of the Minamata Convention
+ NAGD (2009). National Assessment Guidelines for Dredging. Commonwealth of Australia
+ ANZG (2018) Australian and New Zealand Guidelines for Fresh and Marine Water Quality.
+ AS NZS 3580.1.1-2016 Methods for sampling and analysis of ambient air - Guide to siting air monitoring Equipment.
+ AS NZS 3580.10.1-2016 Methods for sampling and analysis of ambient air - Determination of particulate matter.
+ AS NZS 3580.14-2014 Methods for sampling and analysis of ambient air - Meteorological monitoring for ambient air quality applications.
+ Australia New Zealand Food Standards Code (2017) Schedule 19 – Maximum levels of contaminants and natural toxicants
+ ANZECC/NHMRC (1992) Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites.
+ Dept of Environment and Conservation (2010) Contaminated Sites Management Series: Assessment Levels for Soil, Sediment and Water
+ Permits are also in place for the transport of samples to Australia-based ISO/IEC 17025 laboratories, all of whom maintain valid Quarantine Import Permits, allowing the importation of samples for analysis without delays.

5.4.21 Inventory of Hazardous Materials (IHM)

- Santos has commissioned an Inventory of Hazardous Materials (IHM) survey for the FSO prior to leaving the Bayu Undan Field. The IHM helps to maintain control of hazardous materials by detailing the types, quantities, and locations of such materials onboard the vessel.
- A thorough and accurate IHM is required for compliance with the EU Ship Recycling Regulation (EU SRR) and the Hong Kong Convention (HKC) for the Safe and Environmentally Sound Recycling of Ships.
- The IHM consists of three parts:
- Part I: Hazardous materials contained in the ship's structure and equipment
- Part II: Operationally (and residual) generated waste
- Part III: Stores
- The IHM will detail the type, quantity and location of the hazardous materials on the FSO and will be provided to ANPM and ANLA prior to the FSO cleaning activities.

5.4.22 Historic Mercury Decontamination projects

Santos has been tendering for a competent Contractor to carry out the cleaning of the FSO. At the time of submission of the Terms of Reference, this Contract had not been awarded, however, Contractors had presented previous history of Mercury Cleaning activity which are presented in the table below.

Historic Mercury Cleaning Work

Description of Services	Client, Project, Location	Environmental and Safety Performance
Bayu-Undan facility – Cleaning Chemical Efficacy Testing EnerMech completed the Cleaning Chemical Efficacy Testing program using coupons from sections of two Topside spools replaced on the CUQ in 2019. Exkal-XPM was shown to be effective at removing mercury from the mercury sulphide scale on the Bayu-Undan facility.	Santos Bayu-Undan, Timor-Leste	Completed without incident or injury. Hazardous work limited to laboratory analysis which was all completed safely.
Decontamination Program for the Northern Endeavour. The two projects share many similarities such as contamination with the potential for mercury and NORMs, and cleanliness standards for vessel recycling.	Upstream Production Solutions Northern Endeavour FPSO, Timor Sea	Pre-engineering and site visits completed without incident or injury. EnerMech personnel slotted right in with the UPS safety systems during site visits included submitting commendable Safety Observations.
Removal of Mercury contamination from valves and other specialised equipment for repairs and maintenance	Origin Bass Strait, Vic	Completed without incident or injury.

Engineering and Consultancy by Subject Matter Expert (SME) Of Chemical Mercury (Hg) Decontamination to Enable Safe Recycling Of FPSO Tantawan.	Chevron Thailand Exploration & Production	The Hg-decontamination had been split up into two (2) activities: chemical cleaning for piping and topside equipment and 2. hydro-jetting were designed for reuse to keep the quantity of wastewater to be disposed of could be kept within limits. Workers underwent specific mercury awareness training and were equipped with Hg-vapour indicator badges to indicate overexposure. Al workers underwent Hg-level testing before and after the job. No anomalies had been reported. for the cargo tanks. The chemical mixtures chosen did not emit any odours or vapours and suppressed Hg-vapours. The chemical mixtures

6 Study Area

Ministerial Diploma No. 46 / 2017 Requirements
Annex III (6): Study area
Outline the geographic area and timelines of the study. Identify if there may be any significant environmental impacts cross-border. Maps and scale plans must also be provided if appropriate.

6.1 Project Geographic Area

Timor Port is located in Tibar Bay which is 10 km west of Dili on the north side of the island of Timor-Leste, in Suco Tibar. Suco Tibar is located in the Post Administrative of Bazartete, Liquica Municipality. The majority of the bay foreshore lies in Tibar Suco, although most of the western side of the bay is in Suco Ulmera.

The location and coordinates of Timor Port, where the activity is proposed to take place, are provided in **Table 6-1** and illustrated in **Figure 6-2**. Photos of the FSO and Timor Port are provided in **Figure 6-3** and **Figure 6-**4. The project area within Timor Port is illustrated in **Figure 6-6**.

Table 6-1: Key coordinates for the activity

Infrastructure / Location	Longitude	Latitude
Timor Port	125°28’28”E	8°34’22”S

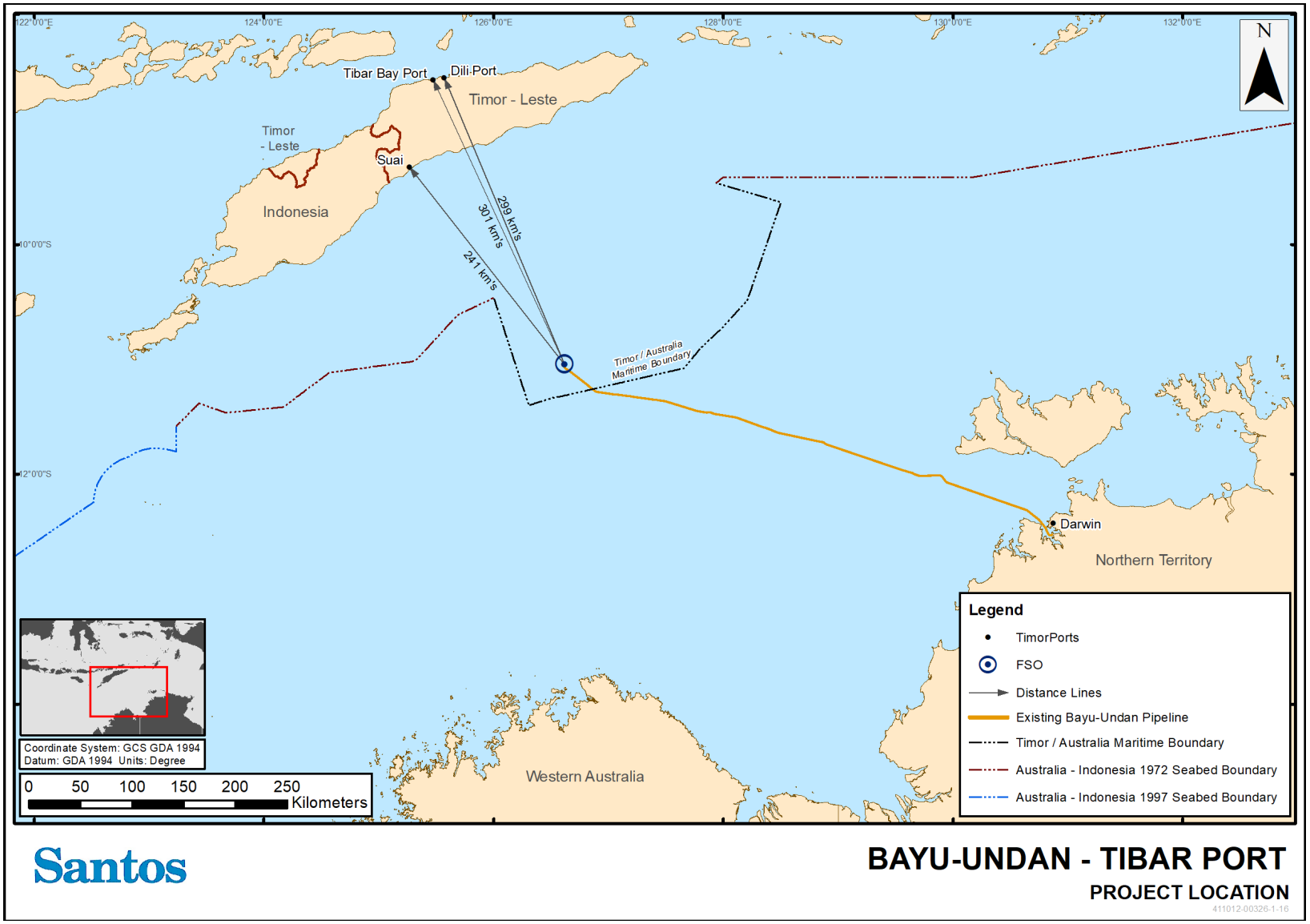

Figure 6-1: Project Location

Figure 6-2: FSO Liberdade

Figure 6-3: Timor Port Southern perspective

Figure 6-4: Timor Port Northern perspective

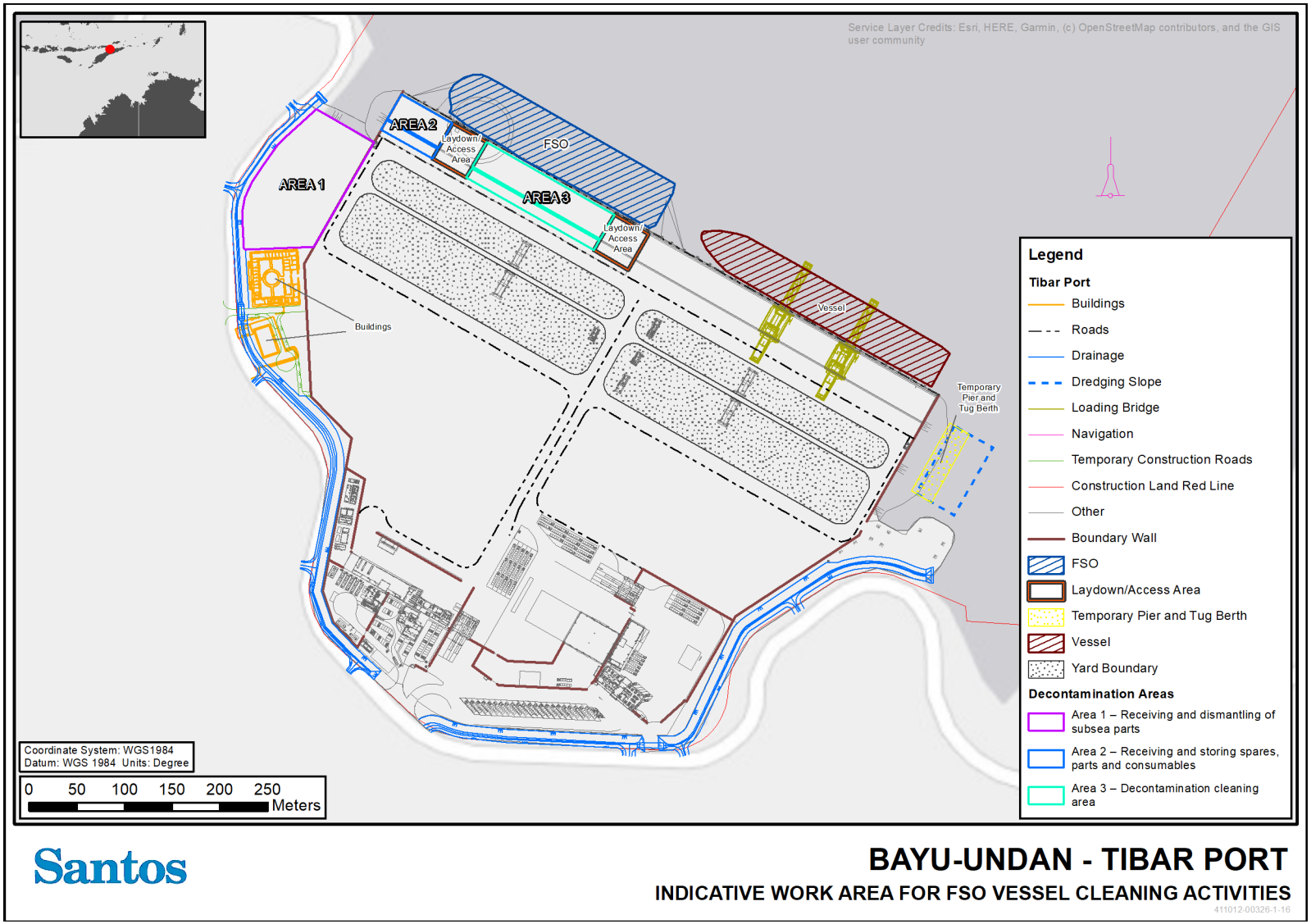

Figure 6-5: Project areas within Timor Port

6.2 Timeline

6.2.1 Timeline for Project

The wharfage at Timor Port is anticipated to be approximately 12 to 18 months in duration, commencing end of Q3 2023. The chemical cleaning of the FSO cargo tanks is a temporary activity expected to take a portion of the total duration of wharfage. The exact timing and duration of the activities at Timor Port are subject to various factors including access to Timor Port, weather conditions and other logistical constraints. The indicative timeline in **Figure 6-1** shows the overlap of the major components associated with the cleaning activity.

6.2.2 Timeline for EIA

The following is an indicative timeline for the preparation of the EIS. The EIA process is anticipated to take roughly 6 months, with preparation having commenced in quarter three (Q3) 2022. The Stakeholder Engagement and Public Consultations will start prior to EIS submission and will last until the end of the EIA process. **Table 6-2** provides an estimate of the time use.

Table 6-2: EIS Timeline

EIS Tasks and Milestones	Month									
	Aug 2022	Sept 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023	Sept 2023
1. Background research / literature review										
2. Stakeholder engagement / TOR										
3. Preparation of Draft EIS										
Milestone 1: Draft EIS										
4. Review of draft EIS										
5. Preparation of Final EIS										
Milestone 2: Final EIS										
6. Submit Final EIS for approval										
7. EIS / EMP Approval										

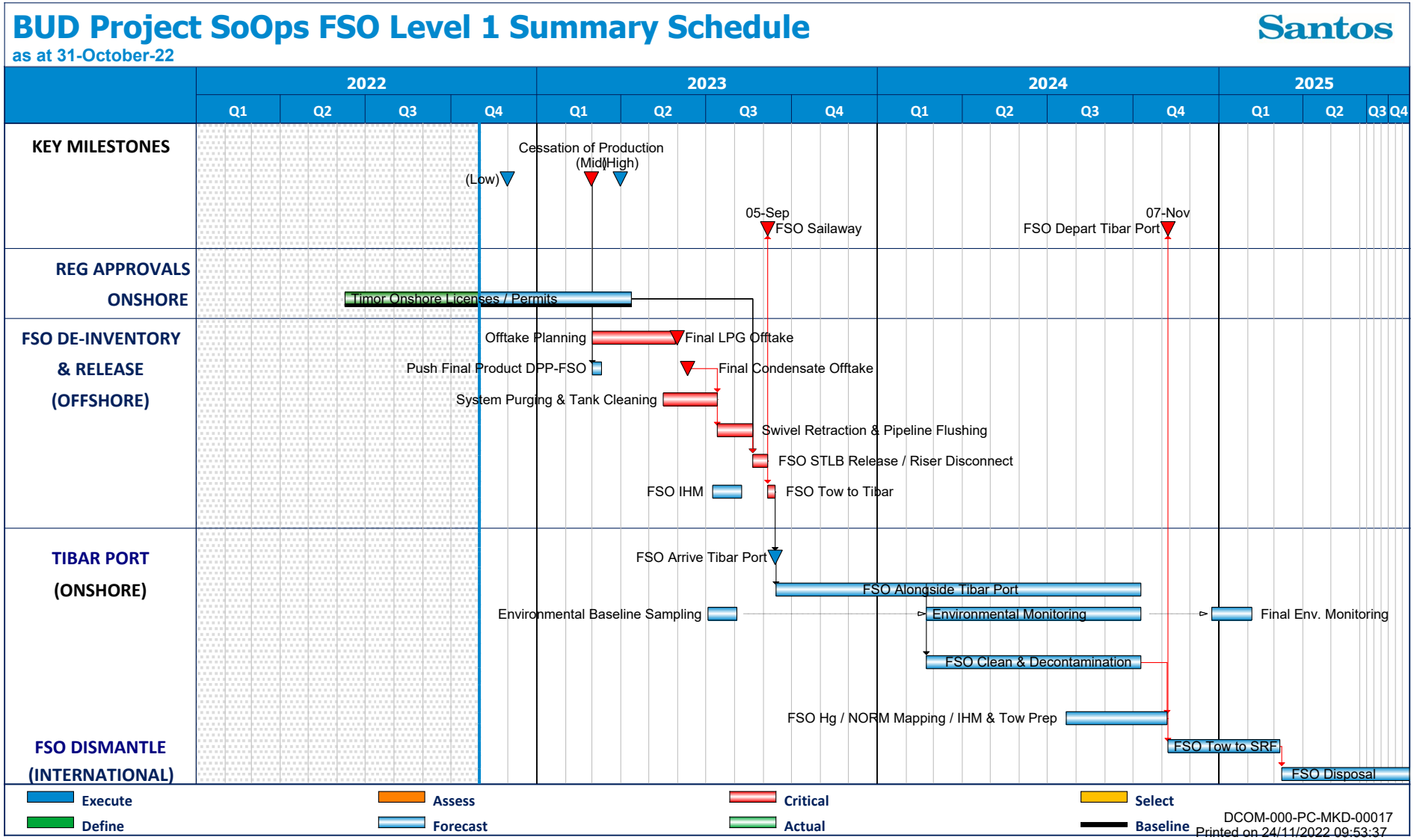

Figure 6-6: Indicative FSO Cleaning in Timor Port Execution Timeline

6.2.3 Environmental Impacts

An environmental hazard identification workshop (ENVID) was conducted in July 2022 on the proposed FSO cleaning activity and other general FSO activities to be undertaken at Timor Port, taking into consideration all potential planned and unplanned risks and impacts.

The workshop identified 6 planned risks and 5 unplanned risks associated with the activity. Robust controls have been identified to manage these risks resulting in the consequence / residual risk being assessed as negligible to minor for planned activities, or very low to low for unplanned events, and therefore acceptable and of low regulatory concern.

The results of the environmental impact assessment are summarised in **Table 6-3** and will be further detailed in the associated EIS and EMP

Table 6-3: Environmental Impact Assessment for General Project Activities and Risks

Aspect	Consequence / Residual Risk Rating
Planned Activities	
FSO Cleaning Atmospheric Emissions	Minor
General Atmospheric Emissions	Negligible
Hazardous Cleaning Waste	Negligible
General Solid and Liquid Wastes	Minor
Noise Emissions	Negligible
Light Emissions	Negligible
Unplanned Events	
Release of Solid Objects	Low
Introduction of Invasive Marine Species	Very Low
Marine and Terrestrial Fauna Interaction	Very Low
FSO Cleaning Chemical and Waste Spills	Low
General Hydrocarbon and Chemical Spills	Low

There are no cross-border environmental impacts expected as a result of the project activities.

6.2.4 Potential Spills and Emissions to the Environment

At the time of preparing the Environmental Licence Application, Santos has not yet awarded the Contract for Cleaning of the FSO Liberdade – **Package F2 FSO Decontamination Cleaning ITT1437**. This tender package requires the Tenderers to propose methodologies for cleaning the FSO to an acceptable threshold limit for dismantling. Santos will, through the process of evaluating Tenderer responses, identify the process which provides the best solution taking into account:

+ Personnel Health and Safety
+ Community Health and Safety
+ The Local Environment
+ Atmospheric emissions
+ FSO and equipment structural integrity

- Once the evaluation of this scope has been completed, Santos will complete modelling using the nominated process, and considering the worst-case-scenario, to identify the area/s of impact both to the Environment and to communities in the area of study.

6.3 Economic and Social Impacts Assessment

The FSO decontamination project to be based in Timor Port offers the following social benefits:

- Provides opportunity for Local Content in both direct and indirect:
  - Employment;
  - Equipment supplies; and
  - Support services in Timor Port
- Provides the opportunity to strengthen Santos & Timor-Leste Relationship.
- Provides the opportunity to leave a positive legacy via helping Timor-Leste to develop a repeatable model to support the offshore resources industry (including Carbon Capture and Storage for Santos)
- Provides the greatest opportunity for the offloading of legacy FSO equipment that can be removed for the Timor-Leste people (to satisfy one of the 15 local content commitments).

Key social risks associated with the Timor Port cleaning option include:

- Ensuring all levels of work force are suitably experienced and trained given the commitment for local employment
- No adverse social impacts are expected as a result of the project activities.

A comprehensive Economic and Social Impact Assessments (ESIA) is planned for the study phase in which further investigation into these areas will be conducted.

7 Scope of Work

Ministerial Diploma No. 46 / 2017 Requirements
Annex III (7): Scope of work to be carried out during the study phase
Identify the tasks to be performed, the information to be collected, the information defects to be addressed, the studies to be carried out, the methodologies to be used and any other tasks. Note that these functions do not need to be carried out at this stage, and can be carried out, namely, during the study phase of the EIS. The TOR should focus on providing information on how such studies are carried out. These tasks are likely to include: *a. Description of the proposed project* *Briefly describe the relevant parts of the project, through maps and scale plans appropriate when relevant and appropriate.* *b. Description of the environment* *Provide a brief description of basic data about the relevant environmental characteristics of the area of study. Include information about any changes anticipated before the start of project activities.* *c. Analysis of alternatives* *Briefly describe the alternatives that were analysed during the development process of the proposed project. Identify other alternatives that allow achieving the same objective. also include the description of a "do nothing" scenario (inaction or maintenance of the status quo).* *d. Determining the potential impacts of the project proposed* *Distinguish between significant positive and negative impacts, direct and indirect impacts, cumulative, transboundary impacts, impacts global impacts, including climate change impacts, long, medium and short term impacts. identify the impacts that are unavoidable or irreversible. Ever where possible, describe the impacts in terms quantitatively and in terms of costs and benefits environmental.* *Where relevant, address the different impacts significant environmental impacts at different stages of the proposed project.* *e. Analysis and evaluation* *Define criteria to assess the impacts of alternatives and the project on the environment. The criteria and indicators identified should be considered preliminary. Clearly state that the criteria and/or indicators can be changed and be even more refined in the environmental assessment based on any change to criteria or indicators. They are noticed potential data sources for the criteria and indicators.* *Identify the method(s) to be used and the reason for their selection in the assessment of environmental impacts potentials and impact management measures.* *f. Environmental Management Plan* *Briefly describe the development of the EMP to mitigate negative impacts. Identify the measures viable and profitable to prevent or reduce the impacts significant negatives to acceptable levels. To describe the actions necessary to implement these measures, considering, in particular, all stages of the proposed project (pre-construction, construction, operation, completion and decommissioning). To describe the necessary measures to monitor the implementation of these measures.* *g. Public consultation* *Include a plan outlining consultation activity that, at the very least, take place during the preparation of the EIS. Describe the measures to be taken in the identification of people who*

may be affected by the project proposed. Describe the measures to be taken in obtaining information from the public's opinions, especially the people and NGOs affected by the project. Which methodologies to be used, which agreements to put into practice, who and how records are kept and what steps to be taken to communicate and obtain opinions.

7.1 Description of the Proposed Project

The FSO Liberdade Hydrocarbon process systems are proposed to be cleaned in Timor Port. This will include the following activities:

- Set up of the FSO decontamination plant in Timor Port;
- Decontamination of the FSO condensate cargo tanks (8), propane cargo tanks (3), butane (3) cargo tanks and slops tanks (2);
- Decontamination of the FSO condensate, propane and butane topsides process systems;
- Decontamination of the fuel gas system piping and equipment;
- Management of atmospheric emissions from tank ventilation for the duration of wharfage;
- Recovery, containment, storage and disposal of decontamination related waste streams.

The FSO decontamination process and management of the associated hazardous waste streams is detailed in **Section 7.1.2**.

7.1.1 Environmental Monitoring

Santos will conduct environmental monitoring of sediment, biota, water and air quality to assess any potential impacts from the activities within Timor Port and the surrounding local environment. This will include the following monitoring activities:

- Baseline environmental monitoring prior to commencement of activities;
- Ongoing environmental surveillance monitoring during activities; and
- Final environmental re-baseline monitoring after completion of the activities.

Initial Baseline Monitoring will take place during the Study Phase in order to feed results (and the Santos Baseline position for the scope of work) into the EIS and EMP. The subsequent monitoring will take place during the FSO cleaning activities in order to quickly identify any anomalies.

7.1.2 FSO Decontamination Scope

The hydrocarbons processed through the FSO facility contain contaminants, particularly mercury, and to a lesser degree heavy metals and potentially very minor levels of NORMs, which are required to be removed to meet the European Union (EU) ship recycling regulations (EU-SRF 1257/2015).

The following sections detail the decontamination cleaning cycle to remove contaminants.

7.1.2.1 Decontamination Cleaning Process Overview

The mechanism of decontamination is based on removing the contaminated scale and top layer of steel. After the cleaning process, the pickling liquor is treated resulting in a filterable precipitation

containing all dissolved solids including mercury and other heavy metals. The liquid waste portion is further treated to an acceptable level allowing for re-use or disposal to the environment, however, all liquid waste volumes will be contained onboard the FSO and will not be discharged into Timor Port waters or the Timor-Leste environment. The filterable precipitation (solid waste material) will be dewatered and packaged as solid waste in UN approved drums and placed in shipping containers for transportation and export to an international waste disposal facility outside of Timor-Leste, licenced to accept these wastes. An example of this process is illustrated in **Figure 7-1**.

The following key steps will be undertaken in the decontamination cleaning process for the cargo tanks and topsides pipework:

- Step 1: Set up of decontamination equipment spread
- Step 2: Undertake chemical cleaning activities
- Step 3: Remove contaminated cleaning fluids
- Step 4: Flush with pH adjusted water
- Step 5: Remove the flushing water
- Step 6. Segregation and management of waste

The following sections detail activities associated with this process.

7.1.2.2 Setup of Decontamination Equipment Spread and Processes

The following equipment and processes are required to be set up either quayside, on the deck of the FSO or a combination of both to enable the cleaning activities to be safely undertaken:

- Personnel decontamination area: set up access and cleaning facilities to prevent the spread of contamination by personnel involved in the decontamination activities;
- Cargo tank decontamination: Redirection of cargo tank vents and / or installation of seals and air emissions control over all remaining tank outlets. Setup of decontamination fluid distribution system inside the cargo tanks and the associated fluid reservoir ISO tank(s) and contaminated fluid extraction system;
- Topsides piping decontamination: Setup of decontamination fluid distribution (flushing loops) for piping and fluid immersion (soaking tanks) for dead-end spools not suitable for flushing loops; and
- Contaminated fluids treatment system: Setup of water treatment plant (WTP) to convert contaminated fluids to solid waste for storage, transport and disposal.

All equipment and works will be set up in such a way that all process liquids, in the case of accidental spills, will be contained.

7.1.2.3 Chemical Cleaning Process

Various chemicals and reagents may be used to create the “pickling solution” required for the chemical cleaning process.

All chemicals will be subject to the Santos Chemical Selection, Evaluation and Approval Procedure (Santos Document Number EA-91-II-10001) and ANPM approval, as per the current process for chemicals used in the Bayu-Undan field.

The “pickling solution” will be circulated until the calculated dissolved iron concentration is reached. Circulation in the cargo tanks will be via the deep-well pumps which discharge to the cargo manifold on deck, which in turn will be connected to several systems of spray-devices positioned in the cargo tank as illustrated in **Figure 7-2**.

Thick scale may be present under platforms, supports and stairs requiring hydro-jetting to remove. If hydro-jetting is required, this will be completed prior to pickling.

The “pickling solution” can be re-used until concentrations reach approximately 25 g/L of total dissolved iron, subject to the degree of precipitation, and will be highly corrosive with a very high amount of total dissolved solids (TDS), mainly iron. When the pickling phase is over, the liquid effluent will be stored on the FSO for treatment and re-use. The process of treating the “pickling solution”, otherwise called the de-sludged liquid effluent.

The treated cargo tanks or process pipework will then be flushed with a water and sodium carbonate (Na_2CO_3) solution to adjust the pH value to 7.5 to 8.5. The flushing water will then be transferred to the Water treatment Plant (WTP) for treatment to an environmentally acceptable discharge level to enable re-use in the cleaning system or final storage onboard the FSO. Despite the high treatment level, there will be no discharge of any treated wastewater to Timor Port or the general Timor-Leste marine environment.

7.1.2.4 Venting and Vapour Management

To mitigate the potential impacts to air emissions it is proposed that a negative air vapor extraction system be connected to the tank vents and pipework. The extraction system will contain a sulphur impregnated, mercury removal specific, activated carbon filter which the emissions will pass through under vacuum.

In order to supress potential elemental mercury vapour, commercially available proprietary vapour suppressants will be also used. A portable mercury vapour analyser will be established such that the exposure criteria can be assessed in real time and inform management practices.

7.1.2.5 Cross-Contamination Management

As well as exposure to mercury vapour, the exposure pathway from dermal contact with cleaning personnel also exists and is also a potential exposure pathway to those not directly involved in the works via cross contamination between people. This will be mitigated through the use of specific coveralls and Personal Protective Equipment (PPE) as well as the establishment of a decontamination area. Potentially polluted disposable coveralls and other PPE will be collected for controlled waste disposal. Footwear will be re-used and therefore must be decontaminated. This will occur by personnel passing through a footbath containing liquid mercury suppressant on exit of the working area.

Work areas may be separated by coaming and / or bunding to manage the risk of spills and cross contamination.

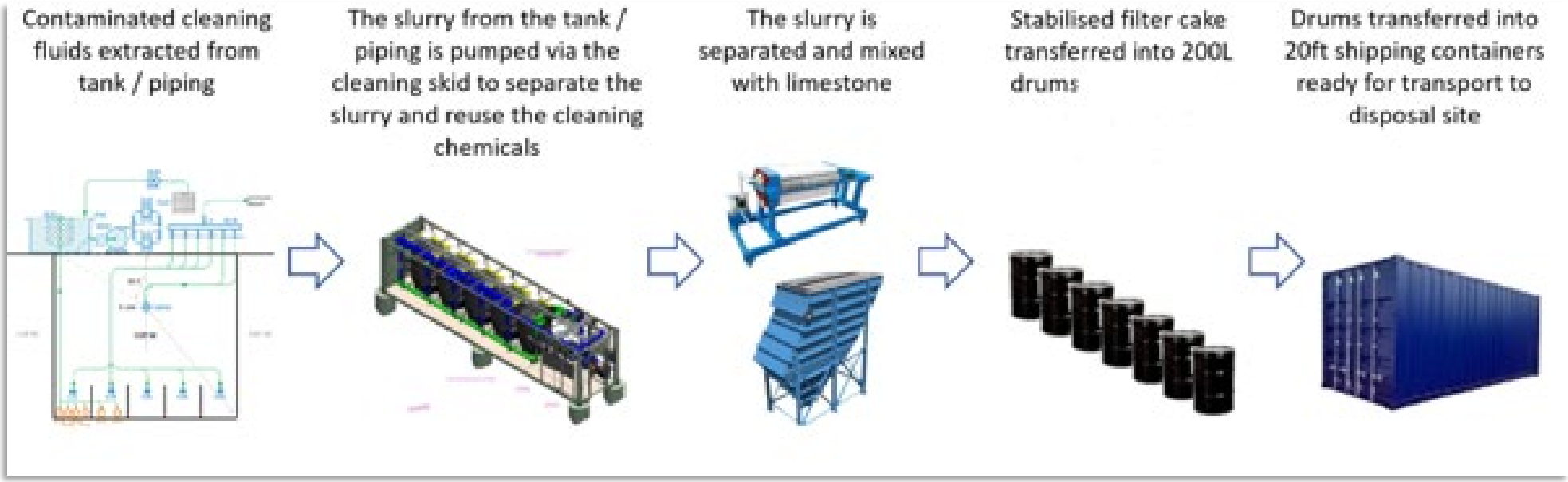

Figure 7-1: Example Decontamination Cleaning Process

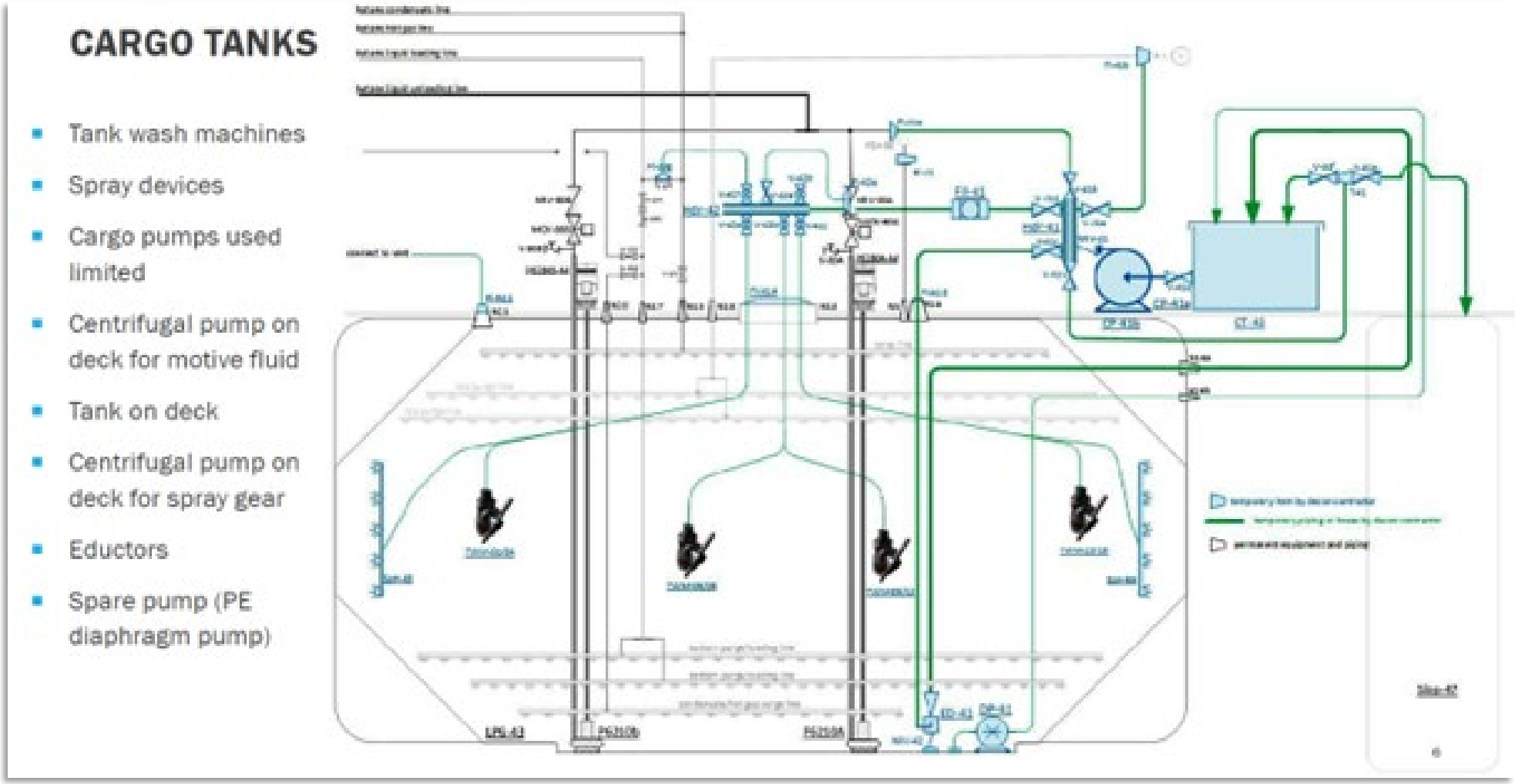

Figure 7-2: Example of a typical cargo tank cleaning arrangement with portable equipment

7.1.2.6 Hazardous Waste Management

There are three main hazardous waste streams that will be generated from the decontamination activities:

1. Dewatered solid and liquid effluent waste streams from the decontamination cleaning and vapour suppression process. These waste streams may contain the following residual hazardous materials from the cargo tanks and associated topsides process piping including:
   - Mercury and pyrophoric irons;
   - NORMs and process sludges;
   - BTEX (benzene, toluene, ethylbenzene and xylenes); and
   - Heavy metals.
2. Contaminated spent media filters including:
   - Filter media used to treat venting and vapour emissions from cargo tanks and topsides piping on arrival and during the decontamination process; and
   - Filter media used in the WTP to treat liquid effluent;
3. Contaminated coveralls and other PPE used during decontamination activities.

Specific contaminant concentrations within the process infrastructure will vary due to a number of factors and mercury and NORM mapping shall occur to more accurately characterise the waste. Tank entry is required to verify mercury contamination levels; however, the contamination range is likely to be vary from 50 µg/cm^2 to localised hot spots of >800 µg/cm^2 on the cargo tank walls and process piping. Santos' average decontamination target to meet FSO dismantling, and recycling requirements is based on industry best practice of 10 µg/cm^2 with a peak of 20µg/cm^2.

Until project specific data is available, for planning and risk assessment purposes broad assumptions on waste characterisation and quantities can be made based on previous similar projects as well as published studies. Estimated waste quantities are outlined in **Table 7-2**.

Table 7-2: Estimated contaminated waste quantities

Type of waste	No. of Drums	kg/drum	Total kg
Comingled contaminated sludge (solid waste / filter cake / hazardous liquid residue)	500 to 1000	100 to 200	100,000 to 250,000
Contaminated air and water treatment filter media	20 to 50	100 to 200	2000 to 5000
Contaminated PPE	20 to 50	50 to 100	500 to 1000
Potential unused cleaning chemicals	5 to 20	100 to 200	500 to 1000

The waste management processes for the dewatered solid and liquid effluent waste streams from the decontamination cleaning process are described in further detail in the following sections.

7.1.2.7 Dewatered Solid Waste

It is estimated that between 100,000 and 250,000kg of dewatered filter cake will be produced and packaged in approximately 800 to 1000 UN approved drums. The drums will be stored in approximately

10 to 15 TEU shipping containers (assuming 80 drums per TEU), situated in a segregated and bunded hazardous storage area within Timor Port, ready for transport and export to an international waste facility outside of Timor-Leste licensed to accept the waste.

It is assumed that waste streams will contain mercury and other heavy metals at concentrations which would classify it as hazardous waste. Based on previous radiation monitoring on the FSO Liberdade, NORMs contamination and exposure risk is expected to be negligible, however verification monitoring will be conducted to confirm this (Australian Radiation Services, 2009).

It is estimated that the chemical cleaning process may result in a worst-case volume of 150kg to 3000kg of mercury contained in the dewatered filter cake. Due to its very high density, 1t of mercury equates to a volume of approximately 75L. This worst-case volume will be distributed over approximately 800 to 1000 drums (noting that only applicably rated drums will be used for storage), such that the mercury content per storage drum is approximately 0.2% to 3.5 % of the drum volume. The majority of each drum's contents will consist of lime, an inert product that effectively neutralises the mercury contamination.

7.2 Description of the Environment

7.2.1 Water Courses and Bodies of Water

Surface Water

Tibar Bay falls into the Comoro River catchment, which is part of the Laclo River System. The Bay is bounded by low hills to the east and west, with Tibar catchment running approximately 6 km south up to an elevation of around 750 m above sea level. This medium sized catchment (around 30 km^2) drains into the southern side of the Bay via a few defined watercourses and across a broad sediment delta (deposited behind the main road) in large storm events.

The nearest rivers to the proposed project area are the Rihui River, which flows directly into Tibar Bay, the Cassalt River which is 2.4 km west of Tibar Bay and flows into the sea at Fahi Obut/Ulmera. The Comoro River flows into the sea 2 km from Dili and 6km from Tibar Bay. The Rauhassa River is located 10 km west of Tibar Bay. The topography and surface water drainage of Tibar Bay is illustrated in **Figure 7-3**.

The Tasitolu Lakes are saltwater lakes located 6 km west of Dili and 3.5 km east of Tibar Bay. This is the most important saline lake for migrant shorebirds in Timor-Leste (Trainor, 2005).

Ground Water

Within a 10 km radius of the Tibar Bay area two aquifer units have been identified (Advisian, 2017):

+ Quaternary alluvium in the main river valley floors; and
+ Permian rocks of the Aileu Formation forming the steep mountainous topography from which the alluvial sediments are derived.

Coastal alluvium

Coastal alluvium is located in the larger river valleys around the coast of Timor-Leste. The alluvial aquifers fill the valley floors and consist of weathered sediments originating from the Aileu Formation as silty gravels and boulders.

Generally, the groundwater encountered in these aquifers within a kilometre of the sea is brackish to salty. Upstream, the groundwater is fresh close to the riverbeds but becoming brackish away from the rivers. (Advisian, 2017)

Alieu formation

The Aileu Formation is found in the mountains surrounding the Tibar Bay area. It consists of a series of shales, phyllites, slates and occasional low-grade metamorphosed eruptive rocks (Audley-Charles, 1968). These rocks form a large outcrop that has been faulted horizontally (thrust fault) into its current position and makes up the majority of north-west Timor-Leste.

No specific information is available for springs of the fractured rock localised aquifers of the Rihui, Fatunia, Cassalt, Fatocutarapa, Barsasnate and Ikaloa River (Moraeloa River complex) catchments along the north coast. Individual springs, typically with flow rates from 0.1 – 3.0 L/s may be possible, and the water is anticipated to be potentially fresh.

Marine Water

The seabed profile along the coast adjacent to Tibar Bay has a littoral zone that is steep and very narrow. The seafloor drops off sharply into a 3 km deep marine trench approximately 20 km from

shore. Within Tibar Bay, the majority of the bay is shallow, with some sections of reef becoming exposed during low tide.

Surface currents in Timor-Leste are influenced by the southeast monsoon May–November and the northwest monsoon November–March. However, a weak drift current flows through the Arafura Sea throughout the year. In the Timor Sea, a south-westerly current prevails all year round, its axis running close to the coast (Tomascik *et al*. 1997).

Two major currents influence the waters surrounding Timor-Leste: the Indonesian monsoon current and the Indonesian Throughflow (Wagey and Arifin 2008). The Indonesian Throughflow which plays a significant role in mid-latitude circulation in the Pacific, is strongest in June– August and weakest December–February. The prevailing path of the Indonesian Throughflow is from the Pacific to the Indian Ocean. While it causes some movement of Indian Ocean water from the south into the eastern seas, most of this water ends up being recycled southward as it flows past Timor Island and back into the Indian Ocean (Advisian, 2017).

The deep flow through the Timor Trough originates in the Indian Ocean and contributes to the formation of a recirculation pattern into the Seram Sea, the North Banda Sea, and back into the South Banda Sea before moving back into the Indian Ocean. Flows through the Timor Straits provide links to the Indian Ocean.

The Indonesian Throughflow is characterized by large internal waves and tides, which are thought to cause the intermittent high primary production events experienced in the predominantly oligotrophic sea (McKinnon *et al*. 2011).

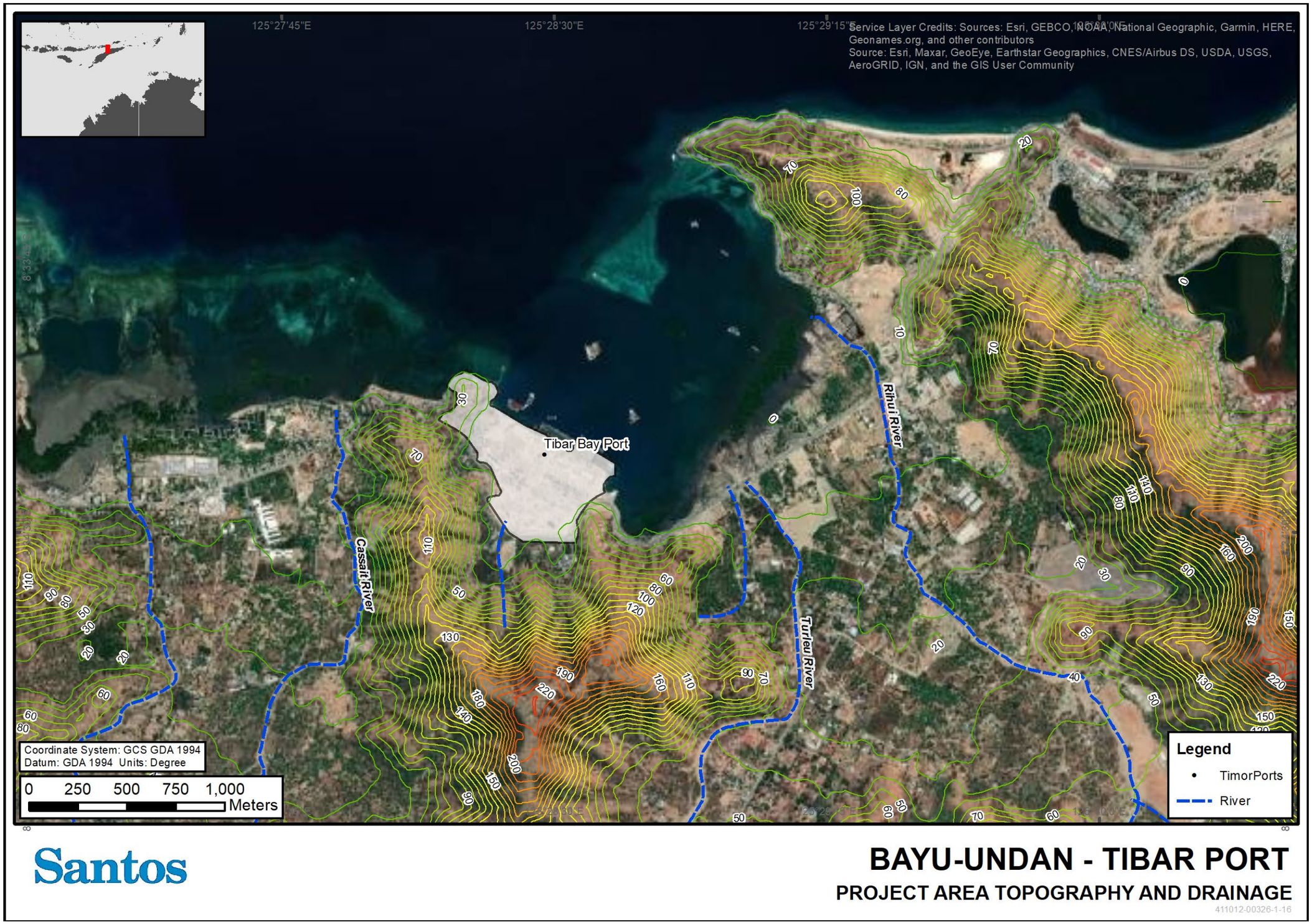

Figure 7-3: Tibar Bay topography and drainage

7.2.2 National Parks, Protected Areas, Reserves or Community-Managed areas, habitats of species that require protection

Two Key Biodiversity Areas (KBAs) are located within the vicinity of Tibar Bay. These are Atauro Island located 30 km offshore and the Tasi Tolu wetlands located immediately east of Tibar Bay (2.5 km) (**Figure 7-4**).

Atauro Island is separated from the proposed project area by 30 km of ocean and a 1,000 m deep-water strait. Atauro is uninhabited, with the exception of a resort, Beloi Eco Resort, located on the eastern edge. The coastline comprises rocky cliffs on the south coast, coral and sandy beaches on the remainder of the island, with the eastern edge of the island having the highest sensitivity. This area has fringing reef and extensive seagrass along with mangroves and a hot spring (Ecostrategic, 2013).

Tasi Tolu wetlands comprises three saline coastal lakes located immediately east of Tibar Bay. The wetlands constitute an important bird habitat with hundreds of migratory birds arriving from Russia during the northern winter. The marine area immediately offshore has fringing reef and seagrasses and is reported to be frequented by Dugong (Ecostrategic, 2013).

There are numerous other protected areas within the greater region of the project area as summarised in **Table 7-6**. There are no RAMSAR listed wetlands within the project area or greater Timor-Leste. Protected areas near Tibar Bay are shown in **Figure 7-5**.

A summary of protected areas in the region is provided in **Table 7-5** and illustrated in **Figure 7-4** and **Figure 7-5.**

Table 7-5: Summary of protected areas in the greater region

Name	Type of Protected Area	Distance to Timor Port (km)
Lagoa Tasitolu	Protected Area	2.5
Behau	Protected Area	8.9
Mount Fatumasin	Protected Area	11.2
Cristo Rei	Protected Area	13.6
Area Mangal Hera	Protected Area	23.9
Lagoa Maubara	Protected Area	24.1
Area Mangal Metinaro	Protected Area	27.6
Mount Tatamailau	Protected Area	29.3
Monte Manucoco (Atauro Island)	Protected Area	30.8
Mount Guguleur	Protected Area	34.8
Suco de Vila	Marine Natural Reserve	36.3
Parke Nasional Kay Rala Xanana Gusmão	Protected Area	42.3
Mount Loelako	Protected Area	45.5
Monte Diatuto	Protected Area	46.5
Korluli	Protected Area	49.0
SamikSaron	Protected Area	50.4
Mount Kuri	Protected Area	51.6

Name	Type of Protected Area	Distance to Timor Port (km)
Lamsanak	Protected Area	54.9
Lagoa BeMalae	Protected Area	59.2
Makfahik	Protected Area	66.3
Mount Bibileo	Protected Area	68.4
Batugadé	Marine Natural Reserve	69.2
Mount Aitana	Protected Area	69.7
KKPD Selat Pantar Dan Perairan Sekitarnya Kabupaten Alor	Marine Nature Reserve	78.4
Tuti Adagae/ KH Gunung Besar	Nature Recreation Park	79.6
Bekau Huhun	Nature Reserve	87.2
Mount Mundo Perdido	Protected Area	90.0
Mount Laretame	Protected Area	100.3
Mount Builo	Protected Area	102.8
Danau Tihu	Undesigned	125.8

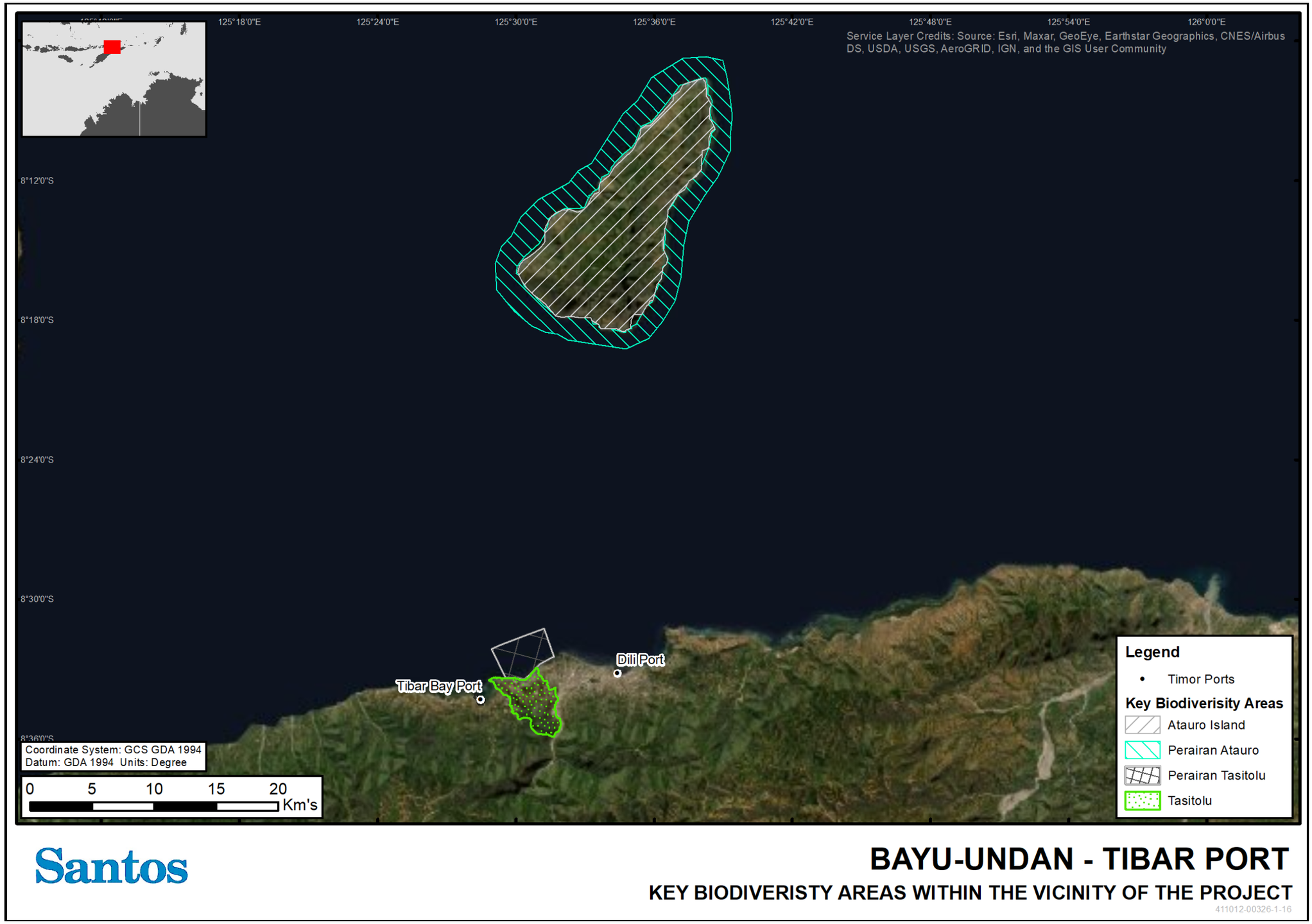

Figure 7-4: Key Biodiversity Areas (KBA's) near Tibar Bay

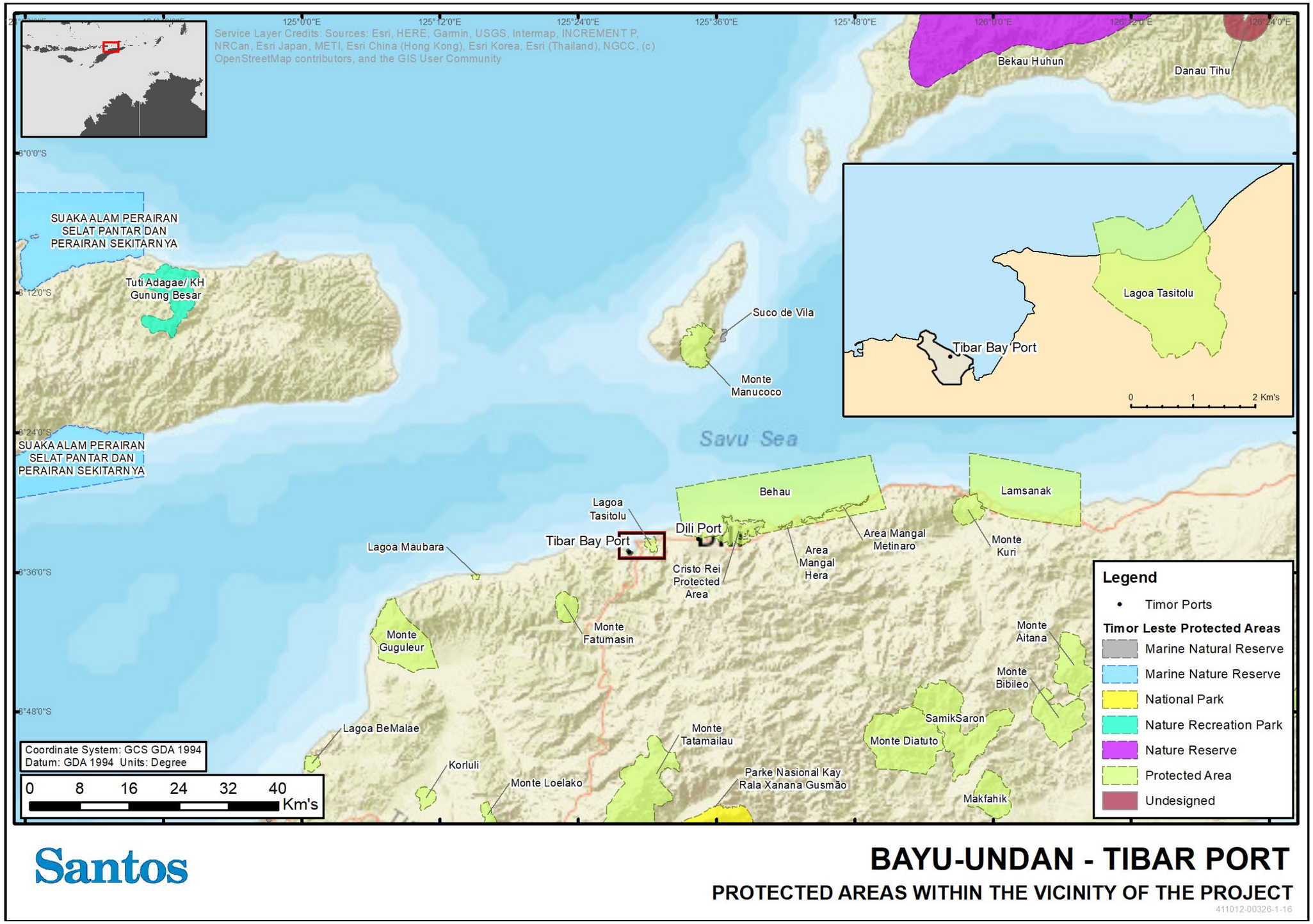

Figure 7-5: Protected areas near Tibar Bay

7.2.3 Threatened and Migratory Fauna and Habitats

7.2.3.1 Marine Habitats

The various marine habitats present in Tibar Bay are described below and shown in **Figure 7-6**.

Mangroves

During the marine surveys for the Tibar Bay Port EIS (Advisian, 2017) 17.8 ha of mangrove habitat was recorded prior to the construction of the port. The most abundant species, with 62.2% of species density across all surveyed sites, was *Sonneratia alba*. *Rhizophora stylosa* was the next most abundant species with 37.6% species density. Mangrove saplings were found in very low numbers or were absent at most sites.

The mangrove stands in Tibar Bay were found to be older and well established, while those outside of the bay to the west were generally younger and shorter. The mangroves in Tibar Bay were under more pressure from use by the community than the mangroves outside the bay, with conditions of the mangroves inside the bay being more degraded than those sampled outside the bay. This was apparent by the lack of saplings present in the Tibar Bay mangroves, as well as the amount of rubbish found there. This is thought to be due to the proximity to the town site and the prevalent use of the mangroves by the local community and their livestock for foraging.

It was observed that the local community would frequent the Tibar Bay mangroves to wash clothes in the three freshwater springs present in the north-west corner of the mangrove stand, and that many domestic livestock animals (goats, cows and pigs) would forage on the roots and saplings of the trees. This has resulted in very little understory being present in the Tibar Bay mangroves, due to both foraging of the saplings and the animals trampling through the area (Advisian, 2017).

Mangroves are the most significant ecological resource in Tibar Bay, having national importance given the loss of 80% of mangroves country-wide since 1940. The *S. alba* dominant mangrove community is unique on the north coast, being the only example of a mature, apex community of this species.

An estimated 1.4 ha of mangroves was permanently removed as part of reclamation of the Tibar Bay Port, which represented 7.8% of the Tibar Bay total mangrove habitat identified within the EIS (Advisian, 2017). There is no mangrove habitat present within Timor Port. Areas currently identified as containing mangrove habitat are shown in **Figure 7-6**.

Seagrasses

During the marine surveys for the Tibar Bay Port EIS (Advisian, 2017) an area of 17.3 ha (7.2%) of seagrass coverage within Tibar Bay was recorded prior to construction of the port. This seagrass was found in two distinct patches, one in the north-east corner of the bay and the other in the south-west, both growing in sheltered silty-mud areas. The dominant species present were *Enhalus acoroides*, *Syringodium isoetifolium* and *Halodule pinifolia*. *Halophila ovalis*, the preferred food of dugong, was also present, although it was only recorded in small, isolated patches. *Thalassodendron ciliatum* was also recorded in small percentages (Advisian, 2017). These results were in agreement with Eisemberg *et al.* (2014), with the predominant species *E. acoroides* and *C. rotundata* being identified. Eisemberg *et al.* (2014) and Ecological Australia (2014) also found seagrass to be limited in and around Tibar Bay.

These surveys provide only a general understanding of what is likely to be present within and around Tibar Bay, as seagrasses are highly ephemeral, meaning the species present and percent coverage can alter significantly from year to year. Additionally, it was estimated that 9.6 ha of seagrass habitat was

removed during the Tibar Bay Port dredging campaign. Seagrasses are unlikely to be present within Timor Port. Areas currently identified as likely containing seagrass habitat are shown in **Figure 7-6**.

Coral Reef

During the Tibar Bay coral inspection for the Tibar Bay Port EIS (Advisian, 2017), approximately 36.7 ha (15%) of the benthic habitat consisted of <20% live coral, occurring in the highest areas of raised reef, while <100% of live coral covered a further 31.2 ha (12.9%) of the Bay, distributed along the boundary of the raised reef. Hard coral was identified to be the dominant community at all sites. *Acroporidae*, *Agariciidae* and *Poritidae* were the families with the highest abundance at all sites.

The area of coral estimated to be directly lost as a result of the dredging and land reclamation for the Tibar Bay Port project was 11.1 ha of reef flat with up to 20% live coral, and 8.9 ha of up to 100% live coral. The bulk of the direct loss was attributed to the dredging of the turning basin and channel. Coral reef habitat in the vicinity of Timor Port has been degraded and disturbed previously, however some coral reef habitat may remain within Timor Port. Areas identified as likely containing coral habitat are shown in **Figure 7-6**.

Tidal Flats

During the marine surveys for the Tibar Bay Port EIS (Advisian, 2017) 41% of Tibar Bay was recorded as sand-silt, with an additional 14.8% recorded as silt-mud. These areas exist mainly seaward of the south-eastern mangroves, but also on the western and eastern sides of the Bay and contribute to the extensive tidal flats in Tibar Bay. The tidal flats provide habitat for two International Union for Conservation of Nature (IUCN) Red List bird species and many other bird species (Advisian, 2017). They are also heavily utilised by the local community for protein supply and they host a variety of shore birds and waders (EcoStrategic, 2013). Areas identified as likely containing silt-mud are shown in **Figure 7-6**.

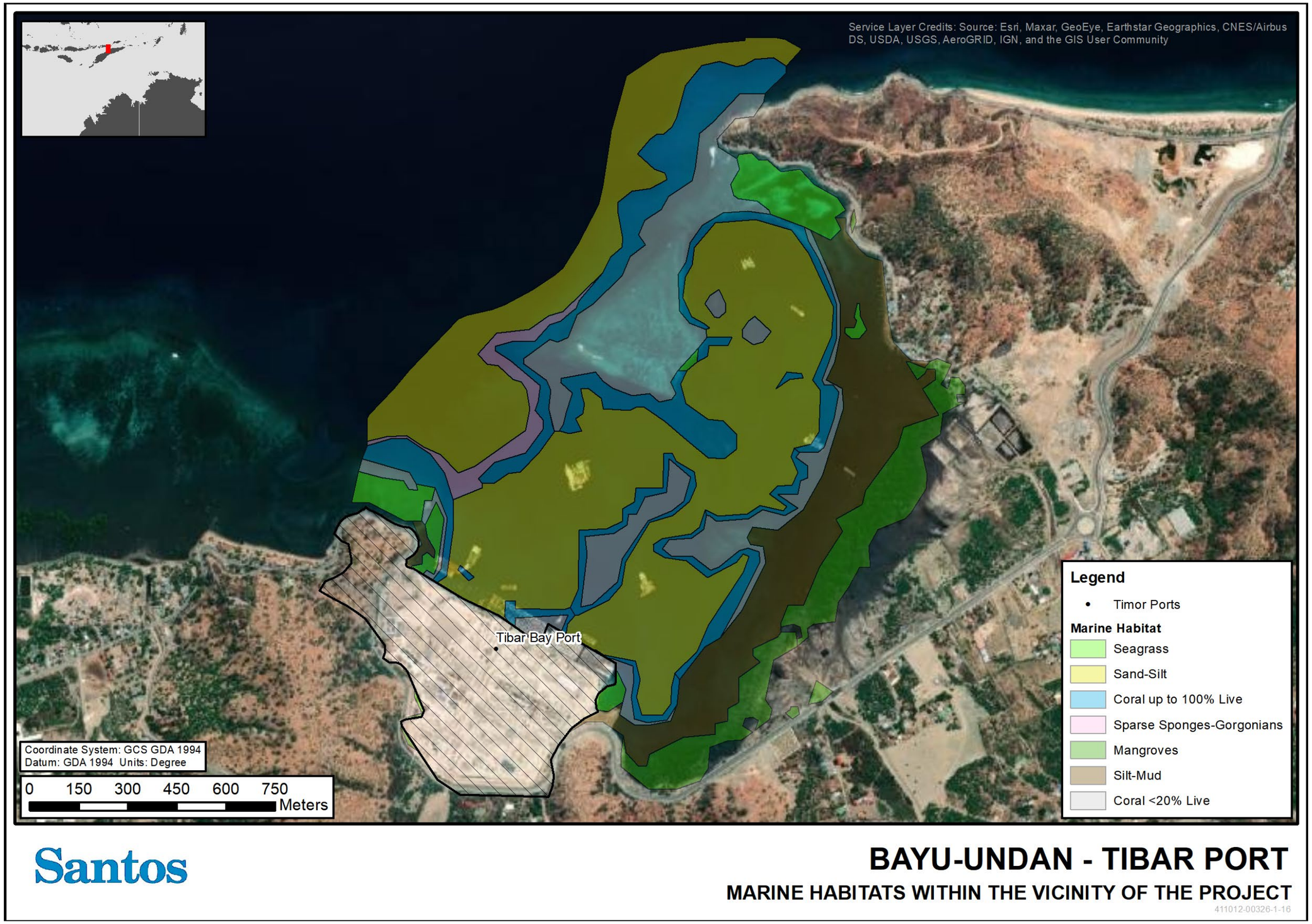

Figure 7-6: Benthic habitats of Tibar Bay

7.2.3.2 Marine Fauna

The International Union for Conservation of Nature (IUCN) Red List of Threated Species is widely recognised as the most comprehensive objective global approach for evaluating the conservations status of animal species including marine fauna. The IUCN red list categorises threatened species into the following categories:

Critically endangered - Species facing a high risk of extinction in the wild;

Endangered - Species likely to become extinct; or

Vulnerable - Species likely to become endangered unless circumstances threatening its survival and reproduction improve.

IUCN listed species that may occur in Tibar Bay, as per the Timor Port - Tibar Bay EIS (Advisian, 2017) are listed below in **Table 7-6**.

Table 7-6: IUCN listed species within the project area

Species	Common Name	Status	Potential Presence Within Timor Port
Cetaceans			
Balaenoptera musculus	*Blue whale*	*Endangered*	Unlikely
Balaenoptera musculus brevicauda	*Pygmy blue whale*	*Data deficient*	Unlikely
Physeter macrocephalus	*Sperm whale*	*Vulnerable*	Unlikely
Balaenoptera borealis	*Sei Whale*	*Endangered*	Unlikely
Globicephala macrorphyncus	*Short-finned pilot whale*	*Data deficient*	Unlikely
Pseudorca crassidens	*Pygmy killer whale*	*Data deficient*	Unlikely
Peponocephala electra	*Melon-headed whale*	*Least concern*	Unlikely
Ziphius cavirostris	*Curvier's beaked whale*	*Least concern*	Unlikely
Pseudorca crassidens	*False killer whale*	*Data deficient*	Unlikely
Grampus griseus	*Risso's dolphin*	*Least concern*	Unlikely
Lagenodephis hosei	*Fraser's dolphin*	*Least concern*	Unlikely
Tursiops truncatus	*Bottlenose dolphin*	*Least concern*	Unlikely
Stenella attenuata	*Spotted dolphin*	*Least concern*	Unlikely
Steno bredanensis	*Rough toothed dolphin*	*Least concern*	Unlikely
Stenella longirostris	*Spinner dolphin*	*Data deficient*	Unlikely
Stenella longirostris roseiventris	*Pygmy spinner dolphin*	*Data deficient*	Unlikely
Stenella attenuata	*Pantropical spotted dolphin*	*Least concern*	Unlikely
Dugongs			

Species	Common Name	Status	Potential Presence Within Timor Port
Dugong dugon	*Dugong*	*Vulnerable*	Possible
Manta Rays			
Manta birostris	*Manta ray*	*Vulnerable*	Possible
Whale Sharks			
Rhincodon typus	*Whale shark*	*Endangered*	Unlikely
Marine Turtles			
Eretmochelys imbriate	*Hawksbill turtles*	*Critically Endangered*	Likely
Chelonia mydas	*Green turtles*	*Endangered*	Likely
Caretta caretta	*Loggerhead turtles*	*Endangered*	Likely
Lepdochelys olivacea	*Olive Ridley turtle*	*Vulnerable*	Possible
Dermochelys coricea	*Leather back turtle*	*Vulnerable*	Possible
Crocodiles			
Crocodylus porosus	*Crocodile*	*Least Concern*	Unlikely

7.2.3.3 Avifauna

An avifauna survey of Tibar Bay and surrounds was conducted on 25th October 2016 by Timor-Leste avifauna expert Colin Trainor, for the Tibar Bay Port development (Advisian, 2017). A total of 44 bird species were recorded within the Timor Port area and Ulmera intertidal mudflats including 15 shorebird species (43 individuals), with 7 waterbird species and 22 land bird species. The globally Endangered Far Eastern Curlew occurred widely with records at 4 of 11 sites and the Endangered Great Knot was recorded at Ulmera. Shorebirds were commonly observed actively feeding on intertidal mudflats, sandflats (presumably on worms, crabs and molluscs), beach areas and roosting or resting on rock outcrops at Ulmera.

7.2.4 Air Quality

The air quality in Timor-Leste is generally good, with the main impacts to human health coming from indoor air pollution and burning of wood indoors. An air quality baseline assessment was conducted for the Timor Port EIS (Advisian 2017). The results are summarised below:

- The baseline particulates recorded at the Tibar Retreat range from 110 µg/m3 recorded in the morning to a lower limit of 20 µg/m3.
- The baseline particulates recorded at the Tibar Primary School range from a high of nearly 1000 µg/m3 recorded at 3pm on one day in the measurement period and a lower mean of 50 µg/m3.

- The standard 24 hour exposure limit is generally exceeded at the Tibar Primary School. The measurements taken at the Tibar Retreat do not approach the standard's 24-hour exposure limit of 75 µg/m3.
- The dust levels recorded at the Tibar Primary School are of concern from a community health perspective.

7.2.5 Changes to the Environment Prior to Commencement of the Project

No significant changes to the environment are expected prior to the commencement of the project. As agreed with the ANLA, Santos will conduct environmental baseline monitoring prior to arrival of the FSO in Timor Port. A re-baseline environmental monitoring program will then be undertaken at the completion of the project to confirm that the project had no significant environmental impacts and to provide the most up to date environmental data relevant to Timor Port.

7.3 Analysis of Alternatives

Santos is required to select an FSO decontamination cleaning location from three significantly different alternatives on the basis that the removal of residual hydrocarbons (cargo tank washing), tank flushing and Gas Freeing will be performed offshore regardless of decontamination method or location.

Base Case: Decontaminate the FSO Liberdade onshore alongside Timor Port in Timor-Leste.

a. Disconnect and relocate FSO from offshore to onshore (Timor Port in Timor-Leste).

b. Reduction of mercury contamination in cargo tanks and process piping to below 20µg/cm2 using a single stream tank cleaning program (Cleaning target <10µg/cm^2) whilst alongside Timor Port. This limitation is based on information shared / confirmed by Sea2Cradle and Turkish SRF yards which is driven by PPE required when dismantling the vessel.

c. Requirement for an FSO Timor Port decontamination Environmental Management Plan (EMP). Plan to include spill prevention and mitigation given proximity local habited areas and livelihoods

d. Hazardous waste collected in UN approved drums and placed in shipping containers within the Timor Port quarantine zone before being exported to an approved Hazardous Waste facility (Australia) via cargo/container vessel.

e. Export the FSO to an EU SRR approved yard legally and ethically able to dismantle and recycle vessels that include residual levels (<20µg/cm2) of mercury contamination.

Option 1: Decontaminate the FSO Liberdade offshore in the Bayu-Undan field

a. Reduction of mercury contamination in cargo tanks and associate process piping to below 20µg/cm2 (cleaning target <10µg/cm^2) offshore prior to disconnection. Cleaning program assumed adjusted to single tank stream (as opposed to Dual stream as single stream yet to be proven). This limitation is based on information shared / confirmed by Sea2Cradle and Turkish SRF yards.

b. Hazardous waste disposed of downhole (Major advantage).

c. Disconnect and export the FSO to an EU SRR approved yard legally and ethically able to dismantle and recycle vessels that include residual levels of mercury contamination (<20µg/cm2).

d. FSO Towed direct to the SRF from Offshore.

Option 2: Export the contaminated FSO to specialised EU-SRR (Ship Recycling Regulation) yard for full decontamination, dismantle and recycling.

a) No Contaminants removal prior to FSO departure from the field

b) 0% Mercury removal prior to FSO departure from the field

c) Ship recycling facility to legally and ethically decontaminate the FSO to below the detectable limit.

d) FSO Towed direct to the SRF from Offshore.

7.3.1 Feasibility Studies of the Proposed Project

The following technical studies have been completed to support the proposed project:

- DCOM-520-RD-TEN-00003 Rev 0 Bayu-Undan Decommissioning: Technical Note – FSO Hg Decontamination Cleaning 101 (Liberty International, 2021a);
- Bayu-Undan Decommissioning: Study of FSO Mercury Decontamination and Waste Management at Timor Port (Liberty International, 2021b);
- Bayu-Undan Decommissioning: Timor Port Environmental Sampling Study (Element Consulting Services, 2022);
- DCOM-520-RD-RPT-00013 Rev 0 Sep-21 Demolition, Dismantling Study Associated with Package 1, 2 & 3 in Timor-Leste;
- DCOM-520-RD-RPT-00008 Rev 2 Aug-21 FSO Inventory of Hazardous Material (IHM) Report;
- DCOM-520-RD-RPT-00012 Rev 0 Jul-21 Study of FSO Mercury Decontamination and Waste Management at Timor Port;
- DCOM-520-SV-RPT-00001 Rev 0 Oct-20 BU FSO & Facility Dismantle & Recycling Yard Overview.

7.3.2 Feasibility Studies Decision

The options for decontamination of the FSO prior to departure to an approved European Ship Recycling Facility (SRF) for dismantling and recycling as part of the Bayu-Undan decommissioning project were assessed based on the above referenced studies.

The decision taken was to accept - as the base case - taking the FSO to Timor Port (Timor-Leste) after completing hydrocarbon flush/wash and gas free whilst offshore and complete the final decontamination cleaning (mercury and other contaminants) at Timor Port (TL) with hazardous waste exported back to Australia.

Key risks associated with the Timor cleaning option include:

- Development of approved local legislation that facilitates all decontamination activities (gaps expected);
- Assumption (now confirmed) that Australia will accept the hazardous waste for disposal in Australia (using the existing bilateral agreement process);
- Potential consequences from loss of containment (emissions/spillage) on nearby communities/livelihood;
- Safe application of the cleaning chemical within the large cargo tanks that are considered confined space; and
- Ensuring all levels of work force are suitably experienced and trained given the commitment for local employment.

In the event any of the risks listed above trend towards unmanageable (prior to Key Milestones dates), the project can revert to contingent options which include:

- Offshore cleaning of the FSO before recycling in European yard as per the previous base plan

Or

- Decontaminating and recycling of the FSO at a Ship recycling Facility in Europe (restricted to European yards only)

7.3.3 Feasibility of Decontaminating the FSO in Timor Port

FSO decontamination in Timor offers the following advantages to the Project:

- Reduction in the number of helicopter flights required during CUQ & DPP Suspension of Operations;
- Reduction in number of vessel supply trips between Bayu and Dili/Darwin;
- Reduction in Company Project direct and indirect overhead to support offshore FSO operations;
- Reduced impacts of extended FSO decontamination duration (critical given the actual level of contamination will not be known until post Cessation of Production);
- Reduced uncertainty in the timing for FSO disconnection (avoidance of Package B Contractor on standby);
- Decoupled FSO Tow vessel call-down window (avoidance of tow vessels on standby in field for extended period pre FSO release);
- Decoupled FSO Export Certificate Approval (avoidance of tow vessels on standby in field for extended period post FSO release);
- Provides the largest opportunity for Local Content in both direct and indirect:
    - Employment;
    - Equipment supplies; and
    - Support services in Timor Port
    - Local Capability development
- Provides the largest opportunity to strengthen Santos & Timor Leste Relationship;
- Provides the largest opportunity to leave a positive legacy via helping Timor Leste to develop a repeatable model to support the offshore resources industry (including Carbon Capture and Storage for Santos)
- Provides the greatest opportunity for the offloading of legacy FSO equipment that can be removed for the Timor Leste people (to satisfy one of the 15 local content commitments).

Further detail on the feasibility (and “do nothing”) scenarios will be detailed in the EIS.

7.4 Determining Potential Impacts of the Proposed Project

7.4.1 Risk Assessment Process

Environmental impact and risk assessment refers to a process whereby planned and unplanned events that will or may occur during an activity are quantitatively and/or qualitatively assessed for their impacts on the environment (physical, biological, and socio-economic) at a defined location and specified period of time. In addition, unplanned events are assessed on the basis of their likelihood of occurrence which contributes to their level of risk. The Santos risk assessment process is summarised in **Figure 7-7**.

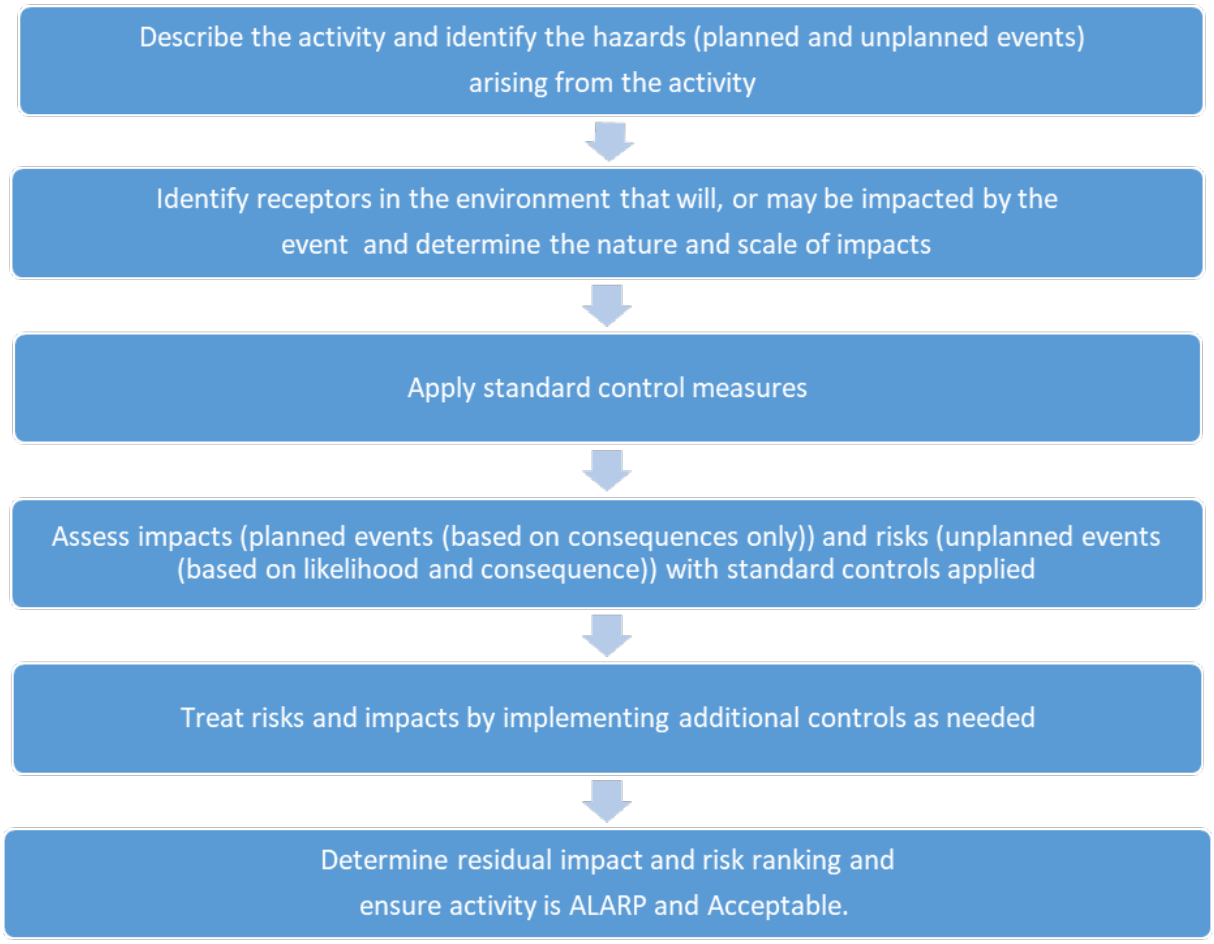

Figure 7-7: Hazard identification and assessment guideline

As planned events are expected to occur during the activity, the likelihood of their occurrence is not considered during the risk assessment, and only a consequence level is assigned as defined in **Table 7-8**.

Table 7-8: Summary of environmental consequence descriptors

Consequence Level	Consequence Level Description
I	**Negligible** – No impact or negligible impact
II	**Minor** – Detectable but insignificant change to local population, industry or ecosystem factors
III	**Moderate** – Significant impact to local population, industry or ecosystem factors
IV	**Major** – Major long-term effect on local population, industry or ecosystem factors
V	**Severe** – Complete loss of local population, industry or ecosystem factors AND/OR extensive regional impacts with slow recovery
VI	**Critical** – Irreversible impact to regional population, industry or ecosystem factors

For unplanned events, the consequence level of the impact is combined with the likelihood of the impact occurring (**Table 7-9**), to determine a residual risk ranking using the Santos corporate risk matrix (**Table 7-10**).

Table 7-9: Likelihood description

No.	Matrix	Description
f	Almost Certain	Occurs in almost all circumstances OR could occur *within days to weeks*
e	Likely	Occurs in most circumstances OR could occur *within weeks to months*
d	Occasional	Has occurred before in Santos OR could occur *within months to years*
c	Possible	Has occurred before in the industry OR could occur *within the next few years*
b	Unlikely	Has occurred elsewhere OR could occur *within decades*
a	Remote	Requires exceptional circumstances and is unlikely even in the long term

Table 7-10: Santos risk matrix

		Consequence					
		I	**II**	**III**	**IV**	**V**	**VI**
Likelihood	f	Low	Medium	High	Very High	Very High	Very High
	e	Low	Medium	High	High	Very High	Very High
	d	Low	Low	Medium	High	High	Very High
	c	Very Low	Low	Low	Medium	High	Very High
	b	Very Low	Very Low	Low	Low	Medium	High
	a	Very Low	Very Low	Very Low	Low	Medium	Medium

A full description of the process applied in identifying, analysing and evaluating the impacts and risks relating to the planned activity is documented in Santos' *Offshore Division Environmental Hazard Identification and Assessment Guideline* (EA-91-IG-00004_5).

7.4.2 Project Risk Assessment Outcomes

An environmental hazard identification workshop (ENVID) was conducted in July 2022 on the proposed FSO cleaning activity and other general FSO activities to be undertaken at Timor Port, taking into consideration all potential planned and unplanned risks and impacts.

The planned and unplanned risks associated with other general project activities of lesser concern are summarised in **Table 7-11**.

The workshop identified three key risks associated with the FSO cleaning activities that relate to the management of mercury and other hazardous compounds in the following streams:

- Atmospheric emissions;
- Management of hazardous cleaning wastes; and
- Spills of cleaning chemicals and wastes.

The results of the environmental impact assessment are outlined in **Table 7-11** and will be detailed in the EIS and EMP. Robust controls identified to manage these risks resulting in the consequence / residual risk being assessed as minor to negligible / low and therefore acceptable and of low regulatory concern will be detailed in the EMP.

With robust controls in place, all risks associated with planned activities have been assessed as negligible / minor, and all risks associated with unplanned events have been assessed as Low / Very Low, and therefore acceptable.

Table 7-11: Environmental Impact Assessment for General Project Activities and Risks

Aspect	Consequence / Residual Risk Rating
Planned Activities	
FSO Cleaning Atmospheric Emissions	Minor
General Atmospheric Emissions	Negligible
Hazardous Cleaning Waste	Negligible
General Solid and Liquid Wastes	Minor
Noise Emissions	Negligible
Light Emissions	Negligible
Unplanned Events	
Release of Solid Objects	Low
Introduction of Invasive Marine Species	Very Low
Marine and Terrestrial Fauna Interaction	Very Low
FSO Cleaning Chemical and Waste Spills	Low
General Hydrocarbon and Chemical Spills	Low

7.4.2.1 Transboundary / Cross-Border Impacts

There will be no International cross-border impacts as a result of the project activities (FSO is already in Timorese waters).

7.4.2.2 Global Impacts, Including Climate Change Impacts

The project activities will generate very low levels of atmospheric emissions. This may result in minor, temporary and localised changes in air quality in the immediate vicinity of project activities. Air quality impacts to local communities, habitats and protected areas are not expected.

No Global or long term localised Climate Change impacts as a result of the activity are not expected.

7.4.2.3 Socio-economic Impacts

Health Impacts

Health impacts to communities as a result of project activities are not expected. Hazardous waste will be contained on site and disposed of internationally, outside of Timor-Leste. Controls for managing hazardous waste and emissions will be detailed in the EMP**.**

Socio-economic impacts

No adverse socio-economic impacts are expected as a result of the project. The project is expected to provide an opportunity for Local Content in both direct and especially indirect employment, equipment supplies and support services in Timor Port. The project will also provide an opportunity for Timor-Leste to develop a repeatable model to support the offshore resources industry (including Carbon Capture and Storage for Santos).

Economic Impacts

No adverse economic impacts are expected. As stated above, the project is expected to provide positive economic benefits to Timor-Leste.

Cultural and Heritage Impacts

No significant impacts to cultural and heritage sensitives are expected. Potential impacts to cultural and heritage sensitives from planned and unplanned events rage from low to minor. Controls to manage the potential impacts and risks to cultural and heritage sensitivities will be detailed in the EMP.

Current Uses of Land and Resources

No significant impacts to current uses of land and resources are expected. Potential impacts to current uses of land and resources from planned and unplanned events rage from low to minor. Controls to manage the potential impacts and risks to current uses of land and resources will be detailed in the EMP.

Historic, Archaeological and Sacred Sites

No significant impacts (including non-physical) to historic, archaeological and sacred sites are expected. Potential impacts to historic, archaeological and sacred sites from planned and unplanned events rage from low to minor. Controls to manage the potential impacts and risks to historic, archaeological and sacred sites will be detailed in the EMP.

7.5 Analysis and Evaluation

Santos will consider the following components in analysing and evaluating the results of surveys, studies and investigative work around bringing the FSO Liberdade to Timor Port for cleaning:

a. Physical Components

b. Ecological components

c. Economic Components

d. Social Components

e. Cultural Components

7.5.1 Physical and Ecological Components

Environmental quality standards and emission limit thresholds for the project will be developed and defined. Preliminary limits, criteria and standards for baseline environmental data will be defined for the following parameters.

- **Marine sediment:** hydrocarbons, metals and metalloids, radionuclides, particle size distribution (PSD), total organic carbon (TOC) and acid volatile sulphur (AVS).
- **Marine biota:** hydrocarbons, metals and metalloids, moisture content and lipid content.
- **Marine water:** hydrocarbons, metals and metalloids, volatile organic acids, major cations, total organic carbon (TOC), sulfate, total phosphorus, ammonia, TKN and nitrates.
- **Soil:** hydrocarbons, metals and metalloids, radionuclides, particle size distribution (PSD), total organic carbon (TOC) and acid volatile sulphur (AVS).
- **Air:** mercury, hydrochloric acid, volatile organic compounds (VOCs) and particulate mercury.

A contractor will also be engaged to conduct environmental monitoring of sediment, biota, water and air quality to assess any potential impacts from the activities within Timor Port and the surrounding local environment. This will include the following monitoring activities:

- Baseline environmental monitoring prior to commencement of activities;
- Ongoing environmental surveillance monitoring during activities; and
- Final environmental re-baseline monitoring after completion of the activities.

7.5.2 Social and Economic and Cultural Components

A Socio-economic Impact Assessment will be conducted using competency Consultants to identify where and how this project may impact society and the immediate and greater Timor-Leste economy.

Once key stakeholders and Impact Pathways have been identified through desktop studies, the consultants will engage with individuals, communities, businesses, relevant NGO's and Regulators. Through this engagement and by using tools to assess threats and opportunities, the consultants will deliver to Santos a Report giving an executive summary of the Assessments, as well as recommendations on how to address any threats or take advantage of any opportunities.

Cultural Components will be taken into account though the Study Phase by making use of the local Santos Dili Office personnel and ensuring that local content is included in the Social and Economic Impact Assessments. All engagements by Santos will include a local component in order to identify and raise any cultural aspects throughout the process.

7.6 Environmental Management Plan

The EMP is an essential tool to ensure that mitigation of negative impacts and an appreciation of positive impacts is carried out effectively throughout the life of the project. The EMP will ensure that the best available technologies (BATs) and best environmental management practices are implemented in a pragmatic and efficient manner.

The Timor Port FSO Cleaning Environmental Management Plan (EMP) will be prepared in accordance with the requirements outlined in Ministerial Diploma No. 46 / 2017 to include the following:

1. **Executive Summary**
2. **Project Proponent Details**
3. **Details of the Consultants**
4. **Project Description** – based on the information provided by the EIS
5. **Legal Requirements** - This section will present the legislation, standards, guidelines, etc., related to environmental and social aspects from the project. Typical obligations may consist of the standards of World Bank/IFC/ADB performance, standards or IFC environmental, health and safety guidelines, environmental and social safeguards of the ADB, the principles of Ecuador, ISO standards, EITI principles and guidelines for sustainability reporting within the scope of Global Reporting Initiative
6. **Roles and Responsibilities** - This section will identify the different roles and responsibilities of the developer and institutions in the different phases of the prescribed development. In particular, it will identify who will update the EMP based on detailed designs, who incorporates them into tender documents and contracts, civil construction works to perform construction or sites specific EMP based on EMP proponent. This section will also identify who monitors the compliance with the EMP.
7. **Summary of Impacts** - This section will summarize the environmental and social impacts anticipated negatives identified in the EIS that must be mitigated and which are addressed in the EMP.
8. **Description of the Proposed Mitigation Measures** - This section will establish quantitative targets and indicators clear and attainable at the required mitigation level. Each measure will be briefly described in relation to the impacts and conditions under which it is required. Santos sub-divide this section between the different phases of the proposed project: set-up, operation and dismantling.
9. **Regulation Parameters - This section will establish the specific limit values of emission and** environmental quality standards relevant to the proposed project. Santos will indicate how we intend to act in compliance with international best practices and best available technologies. Any use of modelling and engineering calculations will be explained and referenced clearly.

   Santos will provide details of all relevant parameters – and for emissions/discharges to the atmosphere, water, soil and waste management. If relevant, discharges to sewage effluents will be included. This section will also address any occupational health or standards of security. Santos may sub-divide this section between the different phases of the proposed project: set-up, operation and dismantling.

10. **Monitoring Program** - This section will detail the specific parameters, the monitoring protocols, sample locations and frequencies monitoring and how to verify and report compliance with implementation between the EMP and the sub-EMPs. Santos may sub-divide this section between the different phases of the proposed project: construction, operation and dismantling. The monitoring program will be such that the objectives following can be achieved:

    a. Measure the impacts that occur during the different project phases, namely, construction, operation and decommissioning, closure and post-closure;

    b. Ensure compliance with legal requirements and business commitments;

    c. Determine the effectiveness of mitigation measures and other environmental and social protection measures, such as reinforcement measures;

    d. Determine the accuracy of impact predictions;

    e. Facilitate impact management by forecasting unanticipated impacts.

    Monitoring programs (e.g., monitoring air or groundwater quality) will be designed in such a way as to allow actions to be taken to appropriate management as soon as possible in the event of any accident or incident, or any non-compliance with any emission limit value or quality environmental standard.

11. **Report Requirements** - This section will set out reporting frequencies and types of reports to be produced. These will include:

    - Internal monitoring and inspection;
    - Incident, accident and emergency reports;
    - Measurement of performance indicators and interpretation and action on indicators;
    - Training programs.

    The report types and the reporting frequencies to report to environmental authorities and other authorities will be detailed and how Santos will inform the appropriate authorities as soon as it is practicable in the event of any accident or incident.

12. **Responsibilities for mitigation and monitoring -** The responsibilities for the various parties involved in the implementation of management actions, mitigation measures and monitoring activities will be clearly defined. This section will include information flow modalities and coordination between the various parties.

13. **Emergency plan -** The EMP will include an emergency plan to deal with the risks associated with accidents and emergencies during the phases construction, operation and decommissioning. The emergency plan will be linked to all other local emergency plans.

    The emergency plan will address the specific risks associated with hazardous chemicals or waste hazardous (if any).

14. **Deactivation Plan** - The EMP will address the decommissioning of the project in the end of the effective operational phase of the project. Nearing the end of the operating phase, the decommissioning plan will be developed if required. Until then, the EMP will present a conceptual, post-closure closure plan and rehabilitation covering all project components.

    Before the end of the operational phase of the project, a plan detailed closing, post-closing and rehabilitation (if any) will be submitted for approval to the Environmental Authority.

15. **Capacity development and training** - Training is essential to ensure that the provisions of the EMP are implemented efficiently and effectively. All training needs will be identified based on the existing and available capacity of the site and the project personnel (including contractors and subcontractors) to carry out the necessary management actions and monitoring activities. A training program will be presented in this section of the EMP. The training program will be developed and delivered by suitably qualified personnel, in a language and average understanding by workers or employees.

16. **Public Consultation** - Public involvement in the preparation of the EMP is key to increasing public understanding and acceptance of the project (for example, how the project might affect or improve living conditions). Public involvement is also allowing members of the public to identify and present impacts and issues that were not immediately obvious to those who prepared the EMP. The sooner the public can be involved in the process of preparing the project, the greater the likelihood that a trust relationship can be built, and useful recommendations made.

    Santos will carry out a consultation process with the people who may be affected by the project and those interested in the project. Santos will ensure that the public, including people affected and women, have the opportunity to participate fully in the consultation process. Consultations will take place continuously throughout the project and Santos will make every effort to start as early as possible in the EIA process.

    This section will include:

    i) Purpose of consultation during EMP preparation;

    ii) Methodology and approach;

    iii) Summary of consultation activities carried out;

    iv) Summary of key comments received from public, community leaders, NGOs, authorities local, other stakeholders;

    v) Identify how observations were taken into account;

    vi) Details of public participation activities (dates, locations, attendance, topics discussed, minutes of meetings, etc.);

    vii) Summarize public acceptance or opinions about the proposed project ;

    viii) Describe other materials or activities (such as press releases, notices);

    ix) Recommendations for future consultations.

    This section will also include measures to ensure the continuity of public participation throughout the cycle of project life.

17. **Complaints and grievances mechanism -** Santos establish a Complaints and Grievances mechanism (CGM) regarding environmental and social issues that arise during the construction, operation and deactivation, shutdown and post-closure. This CGM will be managed by Santos with the participation of local authorities and leaders community. This may be done by creating a project mediation committee that will meet on a regularly or in response to a particular incident. Santos will detail how it will manage the complaints and complaints in the EMP.

    All complaints and grievance mechanisms will be without prejudice to the rights of any complainant to file a complaint to environmental or other authorities, or to institute a process in the courts.

18. **Work plan and implementation schedule -** This section will include a work plan and schedule of execution, indicating the timing of activities and operations, along with related environmental engineering works and inspection and monitoring schedule. The work plan and implementation schedule is particularly important during the construction phase of the project**.**
19. **Cost estimates -** This section will contain estimates to ensure that mitigation measures and monitoring requirements are properly implemented and funded.
20. **Review of the PGA -** This section describes the procedures and mechanisms used to review the project in light of the results of the monitoring or design changes.
21. **Non-technical summary -** A non-technical summary of all above information. It will be written clearly and simply, so as to be understood by an ordinary person.

7.7 Public Consultation

To date, there have been several key Stakeholder engagement sessions held by Santos in Dili, informing and advising In-Country regulators regarding the proposed project, as well as interested Timor-Leste enterprises who are interested in accessing opportunities on the proposed Project. There has also been some minor community consultation with local fishermen in the areas around Timor Port and with members of the Port.

Specifically, there has been comprehensive consultation with RDTL regulatory bodies with the facilitative support of the ANPM.

Comprehensive public consultation will continue throughout the development timeline for the EIS and associated public consultation outcomes will be reported in the final EIS.

7.7.1 Proposed Project Stakeholders

Comprehensive stakeholder engagement will be undertaken during the preparation of the EIS in accordance with *Decree Law 5/2011 and Ministerial Diploma 47/2017*, and in alignment with the project risks and impacts.

Ministerial Diploma 46 (Annex III #7g) outlines that the format for this Terms of Reference should also describe the measures taken in the identification of people who may be affected by the proposed project.

The process followed in identifying the was as follows:

- Santos met with Timor Port PMU to seek advice on potential stakeholders.
- Santos sourced the Bollore Timor Port EIS to assess and consider the stakeholders that they had targeted throughout their environmental licensing process.
- The Santos Bayu Undan Decommissioning Team and the Santos Dili Office Team collaborated to develop an initial stakeholder identification list whereby they considered the following:
  - Level 1 Stakeholders (very close geographic proximity to activity)
  - Level 2 Stakeholders (outlying geographic proximity to activity)
  - Level 4 Stakeholders (distant proximity to activity - but invested)
  - Level 4 Stakeholders (Regulators invested in the project)
- Santos shared their initial stakeholder identification list with ANLA, who provided additional suggestions of stakeholders to be consulted, and these stakeholders are included in the final Stakeholder Identification List (as per table 7-12).

Engagement will primarily be with stakeholders to:

+ gather baseline information and discuss any mitigations
+ further develop Santos' stakeholder management strategy to inform EIS and EMP
+ keep stakeholders informed about project developments; and
+ respond to issues as they arise.

Feedback from ongoing engagement with stakeholders will be collected compiled and acted on and this will continue over the life of the project.

Table 7-12: Environmental Licensing Stakeholder Identification List

NAME	POSITION
LEVEL 1 STAKEHOLDERS (very close geographic proximity to activity)	
Eric Mancini	Bollore Project Director, Timor Port
Rafael Ribeiro	Bollore Chairman Timor Port
Nicolas Spriet	Bollore Timor Port Santos Package Manager
Timor Port (workforce)	General Operational Workforce (x200)
Rui Soares	Manager Timor Port PMU
Gaspar Ximenes	Environment and Social Officer
LEVEL 2 STAKEHOLDERS (outlying geographic proximity to activity)	
Augusto Pereira de Araujo	Posto Administrativu Bazartete
Sr. Pedro Paulo Gomes	President, Municipality of Liquica
Sr. Bento da Conceicao	Chefe Suco Tibar
Suco Tibar	Residents including - Chefe Aldeia; Chefe Juventude; Lia Nain; and fish and salt farmers
Sr. Martinho Correia	Chefe Suco Ulmera
Suco Ulmera	Residents including - Chefe Aldeia; Chefe Juventude; Lia Nain; and fish and salt farmers + Principal, Escola Basica E.B. Tibar (Primary School) + Police Chief, Tibar Police Station
Sra. Alice Goncalves	Tibar Beach Retreat & Ximangane Restaurant
Father Isaias Abilio Caldas SJ	Principal, Kompleksu Eskola Jesuita
Doctor Do Santos (TBC)	Tibar Clinic
Sr. Simao Barreto	Director, CNFP Tibar Training Centre
LEVEL 3 STAKEHOLDERS (distant proximity to activity - but invested)	
Jorge Serano	President, Timor-Leste Chamber of Commerce
Hergui Luina Fernandes Alves	Women Entrepreneurs Timor-Leste (AEMTL)
Sra Marta da Silva	Diretora La'o Hamutuk
Valentim da Costa Pinto	Director, Fongtil
Dr. Alvaro Menezes Amaral, S.E.M.Si	Rector, Dili Institute of Technology
João Soares Martins	Director, UNTL (National University of Timor-Leste)
LEVEL 4 STAKEHOLDERS (Regulators invested in the project)	
Sr. Guilhermina Filomena Saldanha Ribeiro	Dili Municipality
Sr. José Amaral	Tibar Waste Facility PMU Manager
Sr. Venancio de Oliveira	Dept Quarantine and Biosecurity
Sr. Rofino Lopes dos Reis	IGT (Gen. Labour Inspection Authority)
Sr. Alarico de Roasario	SEPFOPE
Sr. Adalberto Nunes	ANPM
Sr. Alberto Viegas Soares	Peskas DG (Fisheries)
Sr. Antonio lelo tachi,M.Sc	ANLA
Sr. Pedro G.dos S. Marcal da Costa	Climate Change
Sr. Nelson Madeira	Pollution Control
Dr. Domingos Pinto	Autoridade Nacional Agua Saneamento IP

7.7.2 Consultation Activity to Take Place During Environmental Licensing

As per Ministerial Diploma 46 (Annex III #7g) the format for the Terms of Reference should include a plan outlining consultation activity that, at the very least, takes place during the preparation of the EIS. The detailed plan below (Table 7-13) outlines the proposed public consultation for both the Terms of Reference and the Environmental impact statement.

Table 7-13: Consultation Activity Plan

TIMING	TASK	NOTES	REG. REFERENCE
Mid Dec 22	Complete draft Stakeholder List (Project-affected persons) in rank order and send to ANLA for review	Collaborative identification with STO Dili Office Team	MD45, Annex III - Examples of public consultation mechanisms
Mid Dec 22	Prepare the content for the public notice (for ToR consultation) in consultation with ANLA	As per MD47, Annex II	MD47, Art 4 Public Notification
Mid Dec 22	**Initial informal presentation of Terms of Reference to ANLA**	10 working days prior to submission to ensure we have all we need	n/a – internal approach
Mid Dec 22	Develop plan (for inclusion in ToR) outlining public consultation activity to take place for ToR and EIS/EMP. Include methodologies to be used; any agreements to be put in place; how records are kept and steps to be taken to obtain and report opinions.	THIS PLAN.	MD46, Annex III #7g Project Doc. Format to be Submitted for Category Definition
Late Dec 22	Liaise with STO Corporate Executive; Government Relations; and Media and Communications regarding corporate requirements that must be followed.	Essential internal requirement	n/a – internal requirement
Late Dec 22	Develop a 'Record of Attendees' Form to record public consultation participants' names and signatures as evidence of attendance.	Incl. in Environmental Licensing Public Consultation Folder in Stakeholder Management Folder	MD46, Annex IV 13f Min reqs for the EIS.
Late Dec 22	Make an easy to fill "Minutes of Meeting" Record Form template for public consultation meetings – including details of public participation activities (dates, locations, attendance, topics discussed, and feedback given.	Include in Environmental Licensing Public Consultation File in the Stakeholder Management Folder	MD46, Annex IV 13f Min reqs for the EIS. MD47, Art 9 Conservation of public consultation records.

Late Dec 22	ESIA consultants planning meeting.	(Circle Advisory/ Tebedai Solutions)	MD46, Art 6, 2 Proposed Scope and Terms of Reference.
Late Dec 22	Delivery of introduction letter (and follow up phone calls) for early engagement meetings to: - President, Municipality of Liquica and Posto Administrativu Bazartete - Chiefs of Tibar Suco and Ulmera Suco	STO Dili Office to deliver via drivers. STO Dili Office to follow up with phone calls.	**DL5/2011**, Art 11 #5 – Public Consultation (ToR) **MD47** Preamble; Ch III Articles 4 and 5
Late Dec 22	Prepare standard content for early engagement meetings (English / then Tetum) - About Santos; About the planned Project; Looking to hold a public consultation meeting	Collaborative setting out with D.O	n/a – internal approach
Late Dec 22	Early engagement F2F meeting re ToR - President, Municipality of Liquica.	DO to make introductions in Tetum - using prepared standard content	n/a – internal approach
Late Dec 22	Discuss and plan for Suco PC meetings for January - Venue and set out; Date; meeting length; catering; record keeping; resources; presentation format; Animation.		n/a – internal approach
24/12/22 to 08/01/22	**Santos Perth Office and Dili Office closed for 16 days**		
Mid Jan 23	Contact Santos Corporate – Govt Relations, Media and PR etc. to inform of process to be followed.	Email planning document and meet to go through plan	n/a – internal requirement
Mid Jan 23	Early engagement F2F meeting - chief of Tibar Suco using prepared standard content.	DO to make introductions in Tetum - using prepared standard content	n/a – internal approach
Mid Jan 23	Early engagement F2F meeting - chief of Ulmera Suco using prepared standard content.	DO to make introductions in Tetum - using prepared standard content	n/a – internal approach
Mid Jan 23	Early engagement F2F meeting - Posto Administrativu Bazartete using prepared standard content.	DO to make introductions in Tetum - using prepared standard content	n/a – internal approach

Mid Jan 23	Early engagement F2F meeting and approach to - CENFP Training Centre (not Sr. Simao Barreto, Director – but his office)	CENFP Training Centre re location for suco community meeting/s.	n/a – internal approach
Mid Jan 23	Prepare formal Notice for Sucos and other stakeholders regarding ToR (with cover letters about a meeting to discuss Project and Draft ToR). Formal Notice to have date of Public Consultation Meeting	As per MD47, Annex II	MD47 Ch III, Art. 4 Public Notification
Mid Jan 23	Issue content for public notice above to STO Exec Media & Communications; and Government Relations		n/a – internal approach
Mid Jan 23	Prepare PC letters for all other stakeholders (not having an early engagement F2F meeting) about wanting to meet to discuss Project and Draft ToR. Also include utilisation of ESIA consultants.	Refer info MD47, Annex II - Include - About Santos; About proposed Project; Looking to hold PC meeting (about ToR)	MD47 Ch III, Art. 4 Public Notification MD46, Ch. III Art. 6 IV Proposed Scope and ToR
Mid Jan 23	Issue content for letters above to Media/Comms and Govt Relations for sense checking.		MD47 Art. 11 #7 Public Consultation Announcement
Mid Jan 23	Plan the process to record/compile/coordinate the information (Template) collected after each public consultation.	Internal coordination	MD47, Art 9 Conservation of public consultation records.
Mid Jan 23	Investigate whether EIS and EMP can be placed on Santos' website.	Liaise with STO Media and PR	MD47, Art 10 #8 Public access to the EIS and EMP proposal
Mid Jan 23	Prepare and finalise a plan for the ToR regarding all consultation activity that will take place during the preparation of the EIS.	THIS PLAN.	MD46, Annex III #7g Format for the Terms of Reference of the projects of the Category A
Mid Jan 23	**Issue Proposed Terms of Reference to ANLA** (15 working days prior to ANLA receiving comments from the public and providing comments for the submission of Final Terms of Reference)	Confirm process e-submission and hard copy	MD45, Annex II #7 Public consultation on the proposed Terms of Reference for the EIS
Mid Jan 23	Develop informative (ToR) slide-set for the Suco Meetings (10 slides plus animation).	(English / then Tetum)	n/a – internal approach

Mid Jan 23	Send a copy of STO's formal public notice to ANLA to place on their own notice board.	Email to ANLA	MD47, Ch III, Art 4, #4
Mid Jan 23	Liaison with Chefe de Sucos for displaying of formal public Notice regarding ToR AND setting a meeting to discuss Project and Draft Terms of Reference.	Deadline for comments to ANLA must not be less than 10 working days after publication of notice so PC needs to take place asap.	MD47 Ch III, Art. 4: #1, 2, 3 and 3l. Public Notification
Mid Jan 23	Deliver PC letters to all other stakeholders (not having an early engagement F2F meeting) about wanting to meet to discuss Project and Draft ToR. Follow up phone calls to confirm times and dates.	As Stakeholder Identification List	MD47 Ch III, Art. 4 Public Notification
Late Jan 23	Commence ESIA baseline public consultation		MD46, Annex IV #1g Minimum requirements for the EIS
From 23/01/2023 to 01/02/23	PC Meeting with Suco Tibar and Suco Ulmera (~240 Residents) including - Posto Administrativu Bazartete; President, Municipality of Liquica; Chefe de Suco; - Suco Tibar and Suco Ulmer Communities	Invite / Include ANLA & ANPM to be part of this meeting.	**DL5/2011**, Art 11 #5 – Public Consultation (ToR) **MD47** Preamble; Ch III Art 4 & 5
From 23/01/2023 to 01/02/23	PC Meeting with PMU, Bollore Leadership Team (and Timor Port Personnel?) - Manager Timor Port ; Enviro & Social Officer - PMU - Bollore Timor Port Project Director, Chairman and Santos Package Manager - General Operational Workforce (x200)??	Invite / Include ANLA & ANPM to be part of this meeting.	**DL5/2011**, Art 11 #5 – Public Consultation (ToR) **MD47** Preamble; Ch III Art 4 & 5
From 23/01/2023 to 01/02/23	PC Meeting Stakeholder Meeting - Dept Quarantine and Biosecurity - Dept of Fisheries / Diresaun Geral Peskas (Secretário de Estado das Pescas)	Invite / Include ANLA & ANPM to be part of this meeting.	**DL5/2011**, Art 11 #5 – Public Consultation (ToR) **MD47** Preamble; Ch III Art 4 & 5
From 23/01/2023 to 01/02/23	PC Meeting Environmental Regulatory Stakeholders - ANLA - Climate Change - Pollution Control	Invite / Include ANLA & ANPM to be part of this meeting.	**DL5/2011**, Art 11 #5 – Public Consultation (ToR) **MD47** Preamble; Ch III Art 4 & 5

From 23/01/2023 to 01/02/23	PC Meeting Waste Streams Management Stakeholders - Dili Municipality - Tibar Waste Facility PMU Manager - ANPM	Invite / Include ANLA & ANPM to be part of this meeting.	**DL5/2011**, Art 11 #5 – Public Consultation (ToR) **MD47** Preamble; Ch III Art 4 & 5
From 23/01/2023 to 01/02/23	PC Meeting Labour Relations Stakeholders - IGT (Gen. Labour Inspection Authority) - SEPFOPE	Invite / Include ANLA & ANPM to be part of this meeting.	**DL5/2011**, Art 11 #5 – Public Consultation (ToR) **MD47** Preamble; Ch III Art 4 & 5
From 23/01/2023 to 01/02/23	PC Meeting Enterprise Stakeholder Meeting - President, Timor-Leste Chamber of Commerce - Women Entrepreneurs Timor-Leste (AEMTL) - Mngr Tibar Beach Retreat & Ximangane Restaurant	Invite / Include ANLA & ANPM to be part of this meeting.	**DL5/2011**, Art 11 #5 – Public Consultation (ToR) **MD47** Preamble; Ch III Art 4 & 5
From 23/01/2023 to 01/02/23	PC Meeting NGO Stakeholder Director, Fongtil	Invite / Include ANLA & ANPM to be part of this meeting.	**DL5/2011**, Art 11 #5 – Public Consultation (ToR) **MD47** Preamble; Ch III Art 4 & 5
From 23/01/2023 to 01/02/23	PC Meeting NGO Stakeholder Director, Haburas Foundation	Invite / Include ANLA & ANPM to be part of this meeting.	**DL5/2011**, Art 11 #5 – Public Consultation (ToR) **MD47** Preamble; Ch III Art 4 & 5
From 23/01/2023 to 01/02/23	PC Meeting NGO Stakeholder Diretora La'o Hamutuk	Invite / Include ANLA & ANPM to be part of this meeting.	**DL5/2011**, Art 11 #5 – Public Consultation (ToR) **MD47** Preamble; Ch III Art 4 & 5
From 23/01/2023 to 01/02/23	PC Meeting Education Stakeholder - Rector, Dili Institute of Technology - Director, UNTL (National University of T-L)	Invite / Include ANLA & ANPM to be part of this meeting.	**DL5/2011**, Art 11 #5 – Public Consultation (ToR) **MD47** Preamble; Ch III Art 4 & 5
Late Jan 23	Review info in the ToR of measures taken in obtaining info from the public's opinions and write a summary of opinions received from stakeholders - especially people and NGOs affected by the project.	Include method used; any agreements; records kept; and steps taken to obtain opinion.	MD46, Annex III g - Format for the ToR of Cat. A project

Early Feb 23	**Submission of Final Terms of Reference to ANLA (for approval) following public consultation with Sucos.**	(15 working days after submission of Proposed Terms of Reference)	MD45, Annex II #7 Public consultation on the proposed ToR for the EIS
Early Feb 23	Update STO Exec Media & Communications; and Government Relations as to EIS/EMP Public Consultation Process.		n/a – internal approach
Early Feb 23	Prepare content for advertisement/public notice (for the EIS/EMP consultation) in consultation with ANLA.	As per MD47, Art11 #9	MD47, Art11 #9 Public Consultation announcement
Early Feb 23	Issue content for advertisement/public notice above to Exec Media & Communications; and Government Relations		n/a – internal requirement
Early Feb 23	Prepare public consultation content for the IES/EMP – including: Consultation Purpose; Methodology; Details of consultation activities carried out; Summary of public acceptance or opinions; key comments received; Overview of how comments taken into account; Recommendations for future consultations.	As per MD47, Annex II	MD46 Annex VI Public Consultation Minimum requirements for the EMP
Mid Feb 23	Prepare script/content for radio announcement for the EIS & EMP consultation).		MD47 Art. 11 #7 Public Consultation Announcement
Mid Feb 23	Issue content for script/content for radio announcement above to STO Exec Media & Communications; and Government Relations		n/a – internal requirement
Late Feb 23	Translate the content for the newspaper advertisement and public notice (for the EIS & EMP consultation) into Tetum.	Internal translation by DO	MD47 Ch III Art.4 #2 Public Notification
Late Feb 23	Translate script/content for radio announcement for the EIS & EMP consultation) into Tetum.	Internal translation by DO	MD47 Art. 11 #8 Public Consultation Announcement
Late Feb 23	Prepare letters for EIS early engagement meetings with Posto Administrativu Bazartete, President, Municipality of Liquica, 2 x Chefe de Suco and - Tibar Training Centre.	Prepared first collaboratively, then DO translates to Tetum	n/a – internal approach
Early Mar 23	Prepare standard content for the EIS early engagement meetings - Reminder re the planned Santos Project; Looking to hold a public consultation meeting – now on the EIS and EMP	Collaborative setting out with DO (first English then Tetum)	n/a – internal approach

Early Mar 23	**Informal presentation of proposed EIS/EMP to ANLA**	10 working days prior to submission to ensure we have all we need	n/a – internal approach
Mid Mar 23	Delivery of intro letter for EIS early engagement to President, Municipality of Liquica; Posto Administrativu Bazartete; Chief of Tibar Suco; Chief of Ulmera Suco and Director CENFP Training Centre - and follow up phone calls (late afternoon)	DO to deliver via drivers	n/a – internal approach
Mid Mar 23	Develop informative (EIS/EMP) slide-set for the Suco Meetings (no more than 10-12 slides)		n/a – internal approach
Mid Mar 23	Early engagement F2F meeting re EIS/EMP - President, Municipality of Liquica.	DO to make introductions in Tetum - using prepared standard content	n/a – internal approach
Mid Mar 23	Early engagement F2F meeting re EIS/EMP - chief of Tibar Suco.	DO to make introductions in Tetum - using prepared standard content	n/a – internal approach
Mid Mar 23	Early engagement F2F meeting re EIS/EMP - chief of Ulmera Suco.	DO to make introductions in Tetum - using prepared standard content	n/a – internal approach
Mid Mar 23	Early engagement F2F meeting re EIS/EMP - Posto Administrativu Bazartete.	DO to make introductions in Tetum - using prepared standard content	n/a – internal approach
Mid Mar 23	Early engagement F2F meeting and approach to Sr. Simao Barreto, Director - CENFP Training Centre	CENFP Training Centre re location for suco community meeting/s.	n/a – internal approach
Mid Mar 23	Prepare formal Notice for Sucos and other stakeholders (with cover letters about a meeting to discuss Project and Draft EIS & EMP)	As per MD47, Annex II	MD47 Ch III, Art. 4 Public Notification
Mid Mar 23	Issue content for public notice above to STO Exec Media & Communications; and Government Relations		n/a – internal requirement
Late Mar 23	**Submission of proposed EIS/EMP to ANLA, and commencement of Technical Review**	(50 working days prior to submission of Final EIS & EMP)	DL 39-22 Article 9

Late Mar 23	Post/Issue advertisement/public that announces EIS and EMP Public Consultation and also post on notice board at both Sucos.	PC only to occur 7 days after EIS & EMP made available to public	MD47 Art. 11,3&7 Public Consultation Announcement
Late Mar 23	Send a copy of STO's formal public notice to ANLA to place on their own notice board.	Email to ANLA	MD47, Ch III, Art 4, #4
Late Mar 23	STO to ensure that public consultation is announced on public radio	public radio.	MD47 Art. 11,7 Public Consultation Announcment
Late Mar 23	Prepare PC letters for all other stakeholders (not having an early engagement F2F meeting) about wanting to meet to discuss DRAFT EIS and DRAFT EMP. Follow Up Phone calls to confirm days and times.		MD47 Art. 11,3&7 Public Consultation Announcement
Late Mar 23	Make EIS/EMP available to the public - Hard copies of EIS and/or EMP to ANLA for potential handing out to stakeholders - DO representative to take control of sharing EIS and/or EMP from the Dili Office	Have hard copies available to read and potentially hand out	MD47, Art 10 #5 Public access to the EIS and EMP proposal
After 04/04/2023	PC Meeting with Suco Tibar and Suco Ulmera (~240 Residents) including - Posto Administrativu Bazartete; President, Municipality of Liquica; Chefe de Suco; - Suco Tibar and Suco Ulmer Communities	Invite / Include ANLA & ANPM to be part of this meeting.	**MD46** Annex IV #13 - Disclosure of infor & public consultation **MD47** Preamble; Ch IV & V Art 6 - 17
After 04/04/2023	PC Meeting with PMU, Bollore Leadership Team (and Timor Port Personnel?) - Manager Timor Port ; Enviro & Social Officer - PMU - Bollore Timor Port Project Director, Chairman and Santos Package Manager - General Operational Workforce (x200)??	Invite / Include ANLA & ANPM to be part of this meeting.	**MD46** Annex IV #13 - Disclosure of infor & public consultation **MD47** Preamble; Ch IV & V Art 6 - 17
After 04/04/2023	PC Meeting Stakeholder Meeting - Dept Quarantine and Biosecurity Dept of Fisheries / Diresaun Geral Peskas (Secretário de Estado das Pescas)	Invite / Include ANLA & ANPM to be part of this meeting.	**MD46** Annex IV #13 - Disclosure of infor & public consultation **MD47** Preamble; Ch IV & V Art 6 - 17

After 04/04/2023	PC Meeting Environmental Regulatory Stakeholders - ANLA - Climate Change - Pollution Control	Invite / Include ANLA & ANPM to be part of this meeting.	**MD46** Annex IV #13 - Disclosure of infor & public consultation **MD47** Preamble; Ch IV & V Art 6 - 17
After 04/04/2023	PC Meeting Waste Streams Management Stakeholders - Dili Municipality - Tibar Waste Facility PMU Manager ANPM	Invite / Include ANLA & ANPM to be part of this meeting.	**MD46** Annex IV #13 - Disclosure of infor & public consultation **MD47** Preamble; Ch IV & V Art 6 - 17
After 04/04/2023	PC Meeting Labour Relations Stakeholders - IGT (Gen. Labour Inspection Authority) SEPFOPE	Invite / Include ANLA & ANPM to be part of this meeting.	**MD46** Annex IV #13 - Disclosure of infor & public consultation **MD47** Preamble; Ch IV & V Art 6 - 17
After 04/04/2023	PC Meeting Enterprise Stakeholder Meeting - President, Timor-Leste Chamber of Commerce - Women Entrepreneurs Timor-Leste (AEMTL) - Mngr Tibar Beach Retreat & Ximangane Restaurant -	Invite / Include ANLA & ANPM to be part of this meeting.	**MD46** Annex IV #13 - Disclosure of infor & public consultation **MD47** Preamble; Ch IV & V Art 6 - 17
After 04/04/2023	PC Meeting NGO Stakeholder - Director, Fongtil	Invite / Include ANLA to be part of this meeting.	**MD46** Annex IV #13 - Disclosure of infor & public consultation **MD47** Preamble; Ch IV & V Art 6 - 17
After 04/04/2023	PC Meeting NGO Stakeholder - Director, Haburas Foundation	Invite / Include ANLA & ANPM to be part of this meeting.	**MD46** Annex IV #13 - Disclosure of infor & public consultation **MD47** Preamble; Ch IV & V Art 6 - 17

After 04/04/2023	PC Meeting NGO Stakeholder Diretora La'o Hamutuk	Invite / Include ANLA & ANPM to be part of this meeting.	**MD46** Annex IV #13 - Disclosure of infor & public consultation **MD47** Preamble; Ch IV & V Art 6 - 17
After 04/04/2023	PC Meeting Education Stakeholder - Rector, Dili Institute of Technology - Director, UNTL (National University of T-L)	Invite / Include ANLA & ANPM to be part of this meeting.	**MD46** Annex IV #13 - Disclosure of infor & public consultation **MD47** Preamble; Ch IV & V Art 6 - 17
Early July 23	Prepare and finalise summary of key comments received from public, community leaders, NGOs, authorities local, other stakeholders regarding the EIS and EMP		MD46, Annex VI #16 Min. reqs for the EMP.
Early July 23	Last day for **Submission of Final EIS/EMP to ANLA for technical recommendation and Environmental Licensing decision**.	(50 working days after submission of DRAFT EIS & EMP)	DL 39-22 Article 9

7.7.3 Measures to be Taken in Obtaining information from Stakeholder Input

As per Ministerial Diploma 46 (Annex III #7g) the format for the Terms of Reference should include a description of measures to be taken in obtaining info from the public's opinions.

The methodologies for conducting stakeholder meetings; collecting input data; Project consideration of input; and reflecting actions in the EIS are outlined below:

- Stakeholder meetings are to be conducted as per Table 7-13. Two members from the Bayu Undan Decommissioning Team (from Australia) will attend these meetings alongside four members of the Santos Dili Office Team. In addition, ESIA consultants (Circle Advisory and Tebedai Solutions) will also be in attendance. This is to enable Santos to introduce these consultants prior to them conducting their specific ESIA consultations. Whilst all 6 members of the Santos team will attend the larger meetings, for meetings of less than 4 stakeholders, Santos will reduce their own numbers so as not to overbalance the meeting.
- Santos will have a Record of Attendance template that will be completed at each meeting, and this will allow for the collection of all attendees' data including their signatures to show evidence of consultation. In addition, Santos has a dedicated resource available at each meeting to record the minutes of the meetings and reflect the opinions of stakeholders – which will also be issued on a standard template. Both these completed templates can be provided as appendices to the Final Terms of Reference.
- All stakeholder input will be shared and considered internally across Santos. Any specific agreements that may need to be put into practice will be considered by Santos departments with regards to the most viable solutions for all parties. Such Santos departments include:
  - Bayu Undan Decommissioning Project Team
  - Dili Office
  - Commercial and Legal
  - Media and Communications and Government Relations
  - Operations and Logistics
- Consultations will clearly drive the Final Terms of Reference, which will in turn, inform the planning for the development of the Environmental Impact Study and will drive the actions within the associated Environmental Management Plan.

8 Flexibility Statement

Ministerial Diploma No. 46 / 2017 Requirements
Appendix III (8): Flexibility
A flexibility statement should be made to help the Bidder to deal with circumstances that may change between the time the Terms of Reference was prepared and the elaboration of the EIS and the EMP and that allows the Bidder to refine certain things such as the study area, the criteria and alternatives with the inputs provided during the elaboration of the EIS and the EMP.

The EIA study area, project alternatives and impact issues being assessed may be subject to change as the EIA process proceeds and new information is obtained.

Examples of new information may include (but not limited to):

- The Methodology and chemicals used for the FSO cleaning activity
- The amount of waste forecast to be generated,
- Waste characterisation,
- Contamination level of waste streams,

When project contracts are awarded, this information will become clearer, and the details made available. Where changes have occurred, the EIS and the EMP will be expanded to ensure that new issues or information are adequately covered.

9 References

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