[SAMBITO - TOTAL ENVIRONMENTAL SOLUTIONS]

EA-AAC-037 ENVIRONMENTAL COMPLIANCE AUDIT OF THE PROJECT 'DREDGING OF PIERS 1, 2, 3, 4, 5 AND 6, TURNING BASIN AND ACCESS CHANNEL TO PUERTO BOLÍVAR

Period: December 2017 – December 2018

Prepared for: Provincial Environmental Directorate of El Oro.

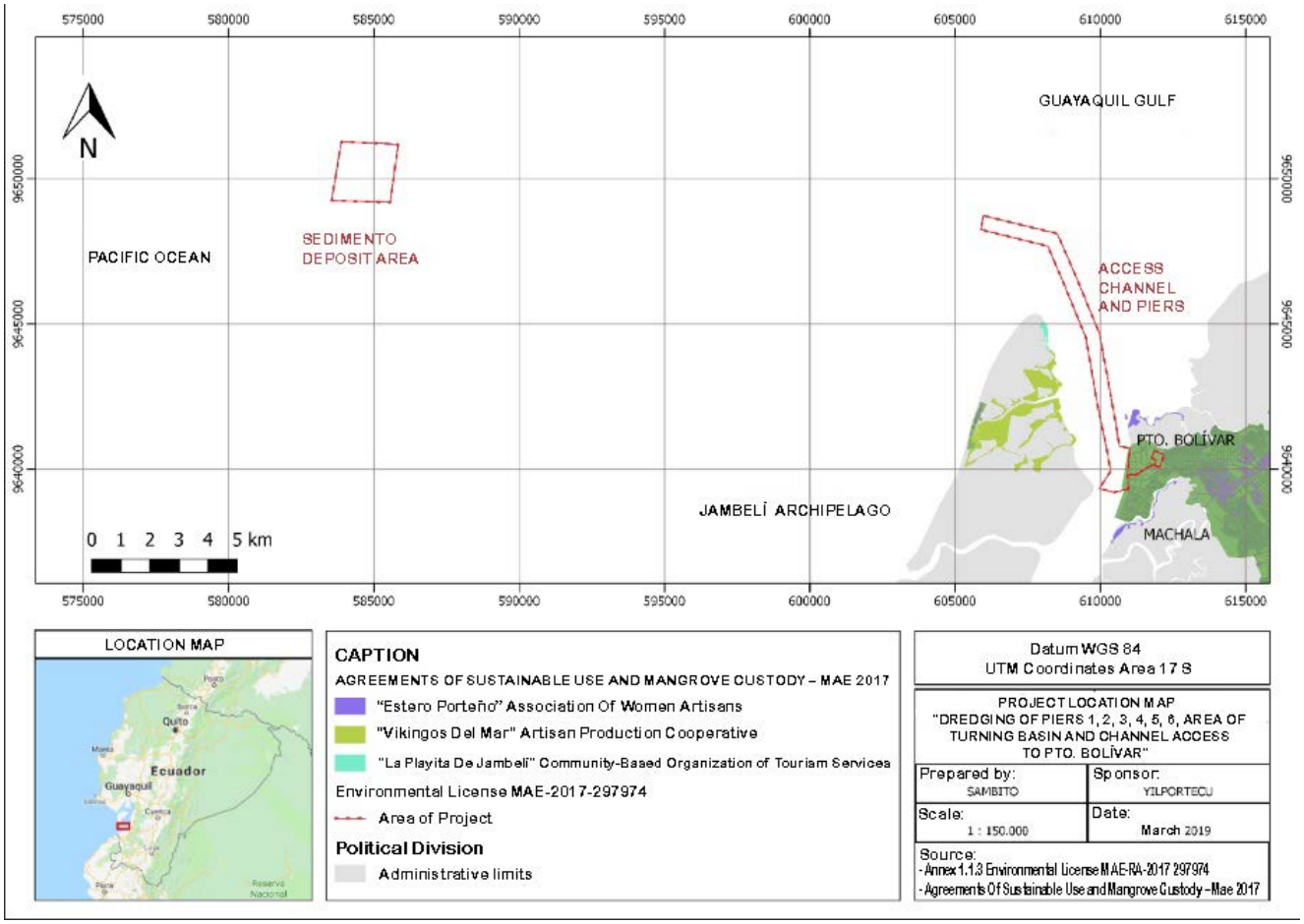
Consultora Ambiental Ecosambito C. Ltda. MAE-SUIA-0026-CC

EXECUTIVE SUMMARY

Puerto Bolivar is located in the northwest coast of South America, in the parish of Puerto Bolivar of the Machala canton, in the province of El Oro, in southern Ecuador, and is the second largest port - in terms of cargo movement - within the National Port System.

YILDIRIM is a Group of Companies with current presence in more than 10 countries and four continents, having Turkey as its base. In Ecuador, the company YILPORTECU S.A. was formed to carry out the project: "Design, Financing, Execution of additional works, Equipment, Operation and Maintenance of the Port Terminal of Puerto Bolívar" once the contract was signed in August 2016, in force for an ordinary term of 50 years.

Illustration 1 Project Location



Based on this award, YILPORTECU S.A. carried out the Environmental Impact Study for the Project "DREDGING OF PIERS 1, 2, 3, 4, 5 AND 6, TURNING BASIN AND ACCESS CHANNEL TO PORT BOLÍVAR", which details the control measures applied through the Environmental Management Plan designed for this purpose.

By means of Resolution No. MAE-DPAEO-2017-009, dated December 19, 2017, the Provincial

Directorate of Environment of El Oro granted - in favor of the company YILPORT TERMINAL OPERATIONS (YILPORTECU S.A.) - the Environmental License No. MAE-RA-2017-297974 for the project "DREDGING OF THE PIERS 1, 2, 3, 4, 5 AND 6, TURNING BASIN AND ACCESS CHANNEL TO PUERTO BOLÍVAR", where the technical and legal conditions that must be complied by the Project Sponsor are specified, according to the provisions of the current environmental legislation.

Dredging activities were carried out as follows:

i. The first dredging period was conducted from March 29 through May 31, 2018.

ii. From June 01 to October 31, 2018, dredging activities were suspended at the Ministry of Environment's request, as it was considered that they could have an impact on the presence of humpback whales.

iii. The completion of the first stage of dredging (March 29 through May 31, 2018) was notified to the Environmental Authority by means of official letter No. YPTO-GG-0178-18 dated June 08, 2018.

iv. By means of Administrative Process No. 007-2018C.A., on September 13, 2018, the Provincial Environmental Directorate of El Oro notifies YILPORTECU S.A. the order to temporarily suspend dredging activities. Thus, dredging activities have been suspended from May 31, 2018 until March 31, 2019.

v. In a hearing held in Machala, on February 05, 2019, the EXPIRATION of the Administrative Sanctioning Proceeding No. 007-2018C.A. was declared, in accordance with the provisions of Art. 213 and 244 of the Organic Administrative Code, declaring void all the actions taken within the administrative process No. 007-2018C.A., as per the provisions of Art. 213 and 244 of the Organic Administrative Code. 007- 2018C.A. and, by virtue of this and in compliance with the provisions of Art. 191, last paragraph thereof, the Temporary Suspension of Activities ordered in the execution of the Project "Dredging of Piers 1,2,3,4,5 and 6, of the Turning Basin and Access Channel of Puerto Bolívar" was declared to be no longer valid.

vi. With a subpoena issued on February 28, 2019, the legal representative of Yilport Terminal Operations was notified of the filing of Administrative Proceeding No. 002- 2019CA for alleged non-compliance with the Environmental Management Plan and obligations established in the Environmental License.

vii. By means of Official Letter No. YPTO-GG-0055-19, the legal representative of Yilport answered the charges made within Administrative Process No. 002-2019CA.

viii. In the Administrative Proceeding Hearing held in Machala on March 18, 2019, the Environmental Authority declared the NULLITY of all actions from the initial order with which the sanctioning administrative proceeding No. 002-2019C.A. was filed.

As per the obligations established in the Environmental License, and as stipulated by the applicable Environmental Regulations, the sponsor of the Project "DREDGING OF THE PIERS 1, 2, 3, 4, 5 AND 6, TURNING BASIN AND ACCESS CHANNEL TO PUERTO BOLÍVAR" shall submit the Environmental Compliance Audit for the period between December 19, 2017 and December 19, 2018, in accordance with the applicable environmental regulations in force; once the Terms of Reference (TOR's) thereof have been approved by the Responsible Environmental Enforcement Authority (AAR).

The Terms of Reference for the Environmental Compliance Audit of the Project were submitted to the Provincial Directorate of MAE - El Oro on December 19, 2018 through Official Letter No. YPTO-GG-0372-18. These terms were observed based on Technical Report No. 0081-2019-MAE- DPAEO-UCA dated February 04, 2019, and forwarded to the sponsor through Memorandum No. MAE-UCAEO-DPAEO-2019-0130-M dated February 05, 2019.

By means of Official Letter No. YPTO-GG-0044-18 YILPORTECU submits the TORs with the respective corrections to the observations made on February 19, 2019. These corrections were finally approved through Official Letter No. MAE-DPAEO-2019-1003-O, received on April 16, 2019.

This document corresponds to the First Environmental Compliance Audit of the Project "DREDGING OF PIERS 1, 2, 3, 4, 5 AND 6, TURNING BASIN AND ACCESS CHANNEL TO PUERTO BOLÍVAR.

The objectives of the audit were to determine the current state of the environment surrounding the project's area of influence; evaluate the abiotic, biotic, and socio-environmental conditions and the environmental impacts that have affected the project's areas of influence as a result of the dredging and offshore deposition works; verify compliance with the conditions of the Environmental License granted by the Ministry of the Environment for the execution of the project; verify compliance with the Environmental Management Plan, as well as current environmental legislation; and recommend environmental actions and measures to be adopted for the next dredging stage, by updating the Environmental Management Plan.

Although chapter 7 of the Environmental Impact Study, which was used to obtain the Environmental License for this project, states that an IHC BEAVER 6518C dredge would be used to dredge the areas adjacent to piers 1, 2, 3, 4, 5 and 6, and the sediments from the dredging of piers 1 to 6 should be placed in the Sediment Pools area located on the former ISSFA premises; and for the dredging of the turning basin and access channel, a TSHD-type dredge would be used, and the dredged sediments would be dumped in the offshore deposit basin; already in the planning stage, and considering that while the preparatory works were being carried out to prepare the pools for the reception of the dredged material, a significant number of families began to arrive and informally settle in the strip of land located between the eastern part of pools 1 and 2 and Bolívar Madero Vargas Avenue and surrounding land (see Photographic Record 5-2); in the document 'Report on Stability and Risk Conditions' 1, prepared by the local consulting firm SurConsul, it is stated that "the south wall of pool No. 2 has - in its outer part - the presence of a population settlement that makes the intervention of

dredging material in the pool risky. This sector is the most sensitive; the other walls, such as the north wall that adjoins pool No. 3 and the west wall that adjoins pool No. 1, and the east wall that adjoins an estuary into which the decanted waters will be discharged, have no impact on the settlement of the population; The availability of the TSHD2-type dredge vessels - with the capacity to discharge sediments through their lower gates reduces the dispersion of the material; the company accepts the technical recommendation of its engineering contractor ROYAL HASKONING DNV to - partially - redesign the access channel; YILPORTECU decided to execute the project using two TSHD-type dredge vessels, and to transport 100% of the dredged sediments to the offshore storage basin.

The result of the compliance evaluations carried out reveals an average of 95.53% of Conformities or Compliances (C), and 4.5% of Minor Non-Conformities (NC-). The lowest result (92% Compliance) corresponds to the Evaluation of Compliance with the obligations established in the Environmental License, where the Non-Compliance is specifically caused by the late delivery of the Terms of Reference for this audit, failing to comply with the provisions of Art. 269 of Book VI of the TULSMA, issued by A.M. No. 061 of April 07, 2015.

Based on these results, we can conclude that YILPORTECU is adequately managing its environmental obligations and responsibilities in compliance with the provisions of its Environmental License and Management Plan, as well as applicable environmental regulations.

The non-conformities established, although they become objectives to be met through the implementation of the proposed Action Plan, are mainly linked to a change made in the dredging methodology - and which will henceforth be the established working method- so their non-compliance is justified from a logic of relevance and pertinence. The measures associated with the sediment pool area have been discarded in the proposed Environmental Management Plan to address these observations.

For the subsequent phases of the project, it is recommended that the implementation of the updated Environmental Management Plan be carried out in accordance with the established scope of the measures, and their frequency and/or execution time, mainly with those of limited temporality in relation to the months of execution of dredging activities, since it will not be possible to resolve a breach or omission in these in the future.

[1] See Annex 3.1.5 PRJ-R133-SURCONSUL_Stability Conditions Report - Pool 2

[2] This particular issue was notified through official letter No. YPTO-GG-0227-18 was delivered to the Provincial Environmental Directorate of El Oro on July 19, 2018 (see Annex 1.4.7 Justification for the

use of dredges).

Project management must avoid non-compliance and/or changes in the approach of the project, which has an Environmental License - and recidivism in administrative processes raised by the Environmental Authority - in order to be able to execute the programmed activities according to its work schedule.

Finally, a clear communication mechanism must be established with the stakeholders in the project's area of influence, allowing for a clear flow of information of interest between the parties, and at the same time making it possible to channel any doubts, observations and/or complaints made by social stakeholders who perceive negative impacts on their environment as a result of the project's execution.

CHAPTER 1. TECHNICAL DATA SHEET

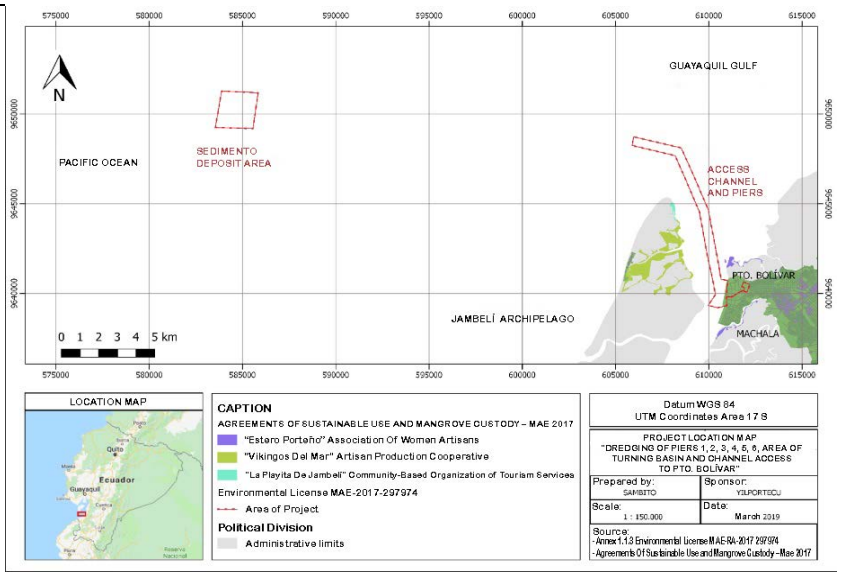
Content

1 TECHNICAL DATA SHEET

INFORMATION OF THE SUBJECT BEING CONTROLLED	
Company	YILPORT TERMINAL OPERATIONS YILPORTECU S.A.
RUC (Registro Único Tributario [Unique Tax Id])	0992982047001
Legal Representative	Alfredo José Jurado Von Buchwald
Classification	Activities concerning use of terminal facilities, such as ports and harbors.
Address	Av. Bolívar M. Vargas s/n. Puerto Bolivar Port Authority Building.
Telephone	+593995083333
Kind of company	Public-Private Partnership

INFORMATION OF THE PROJECT	
Name of the project	Environmental Compliance Audit of the Dredging Project of Piers 1, 2, 3, 4 and 5, 6, Turning Basin and Access Channel to Puerto Bolívar.
Environmental License	MAE-RA-2017-297974, Awarded by means of Resolution No. MAE-DPAEO-2017-009
Project Phase	Operation
CCAN Code	CONSTRUCTION AND/OR OPERATION OF WORKS FOR DREDGING OF FLUVIAL AND/OR SEA BODIES
Period Audited	December 19, 2017 - December 19, 2018.
Technical Manager	Jaime Vanegas
Volume of the Project (m3)	7,575,384.84 m3
Location:	Machala and Santa Rosa Cantons

Location Map



Coordinates

Universal Transverse Mercator (U.T.M.) projection World Geodetic Reference System WGS 84 - Zone 17 South

Points	Latitude (X)	Longitude (Y)	Description
1	610956	9639311	Polygon 1
2	610478	9639203	Polygon 1
3	609957	9639327	Polygon 1
4	610347	9639925	Polygon 1
5	610216	9640713	Polygon 1
6	609917	9642098	Polygon 1
7	609498	9644527	Polygon 1
8	608686	9646508	Polygon 1
9	608189	9647676	Polygon 1
10	605878	9648244	Polygon 1
11	605974	9648726	Polygon 1
12	608511	9648113	Polygon 1
13	609175	9646587	Polygon 1
14	609970	9644652	Polygon 1
15	610433	9642109	Polygon 1
16	610654	9640792	Polygon 1
17	611014	9640712	Polygon 1
18	610931	9639816	Polygon 1
19	611233	9639806	Polygon 1
20	611697	9640103	Polygon 1
21	611804	9640152	Polygon 1
22	611854	9640142	Polygon 1
23	611923	9640297	Polygon 1
24	611766	9640387	Polygon 1
25	611866	9640633	Polygon 1

	26	612023	9640556	Polygon 1
	27	612171	9640506	Polygon 1
	28	612139	9640341	Polygon 1
	29	612088	9640197	Polygon 1
	30	612036	9640065	Polygon 1
	31	611852	9640125	Polygon 1
	32	611804	9640149	Polygon 1
	33	611699	9640100	Polygon 1
	34	611234	9639805	Polygon 1
	35	610931	9639814	Polygon 1
	36	610956	9639311	Polygon 1
	1	583544	9649248	Polygon 2
	2	583880	9651278	Polygon 2
	3	585837	9651184	Polygon 2
	4	585560	9649187	Polygon 2
	5	583544	9649248	Polygon 2

ENVIRONMENTAL CONSULTANT INFORMATION	
Consultant	ECOSAMBITO C. LTDA.
RUC (Registro Único Tributario [Unique Tax Id])	0992260378001
Registry No.	MAE-SUIA-0026-CC
Address	Av. De las Américas. No. 406. Simón Bolívar Convention Center. Office no. 19
Contact e-mail	tfernandez@sambito.com.ec
Contact telephone	+593 4 292 56 10

MEMBERS OF THE TECHNICAL CONSULTING TEAM		
Name	**Task**	**Signature**
Tania Fernández	Project Management Evaluation of the Environmental Management Plan	[Signature]
Fabrizzio Tapia	Description of the project's activities. Identification and assessment of findings. Field inspection. Processing of records and information.	[Signature]

SIGNATURE OF INDIVIDUALS IN CHARGE	
[Signature]	[Signature]
José Javier Guarderas General Manager ECOSAMBITO C.	Alfredo José Jurado Von Buchwald Legal Representative **YILPORT TERMINAL OPERATIONS**

CHAPTER 2. INTRODUCTION, OBJECTIVES AND SCOPE

Content

2 BACKGROUND

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Dredging activities were carried out as follows:

i. First dredging period was conducted from March 29 through May 31, 2018.

ii. From June 01 to October 31, 2018, the dredging activities were suspended at the Ministry of Environment's request, considering that they could affect the presence of humpback whales, as stated in the Official Letter No. YPTO-GG-0227-18 sent by the General Management of YILPORTECUA S.A. to the Provincial Directorate of Environment of El Oro.

iii. The completion of the first stage of dredging (March 29 through May 31, 2018) was notified to the Environmental Authority by means of official letter No. YPTO-GG-0178-18 dated June 08, 2018.

iv. By means of Administrative Process No. 007-2018C.A., on September 13, 2018, the Provincial Environmental Directorate of El Oro notifies YILPORTECU S.A. of the order to suspend dredging activities temporarily. Thus, dredging activities have been suspended from May 31, 2018 until March 31, 2019.

v. In a hearing held in Machala, on February 05, 2019, the EXPIRATION of the Administrative Sanctioning Proceeding No. 007-2018C.A. was declared following the provisions of Art. 213 and 244 of the Organic Administrative Code, declaring void all the actions taken within the administrative process No. 007-2018C.A., as per the provisions of Art. 213 and 244 of the Organic Administrative Code. 007- 2018C.A. and, by virtue of this and in compliance with the provisions of Art. 191, last paragraph thereof, the Temporary Suspension of Activities ordered in the execution of the Project "Dredging of Piers 1,2,3,4,5 and 6, of the Turning Basin and Access Channel of Puerto Bolívar" was declared to be no longer valid.

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The Terms of Reference for the Environmental Compliance Audit of the Project were submitted to the Provincial Directorate of MAE - El Oro on December 19, 2018 through Official Letter No. YPTO-GG- 0372-18. These terms were observed based on Technical Report No. 0081-2019-MAE- DPAEO-UCA dated February 04, 2019, and forwarded to the sponsor through Memorandum No. MAE-UCAEO- DPAEO-2019-0130-M dated February 05, 2019.

By means of Official Letter No. YPTO-GG-0044-18 YILPORTECU submits the TORs with the respective corrections to the observations made on February 19, 2019. These corrections were finally approved through Official Letter No. MAE-DPAEO-2019-1003-O, received on April 16, 2019.

This document corresponds to the First Environmental Compliance Audit of the Project "DREDGING OF PIERS 1, 2, 3, 4, 5 AND 6, TURNING BASIN AND ACCESS CHANNEL TO PUERTO BOLÍVAR.

2.1 OBJECTIVES

2.1.1 GENERAL OBJECTIVES OF THE AUDIT

To prepare the environmental compliance audit of the project "DREDGING OF PIERS 1, 2, 3, 4, 5 AND 6, TURNING BASIN AND ACCESS CHANNEL TO PUERTO BOLÍVAR", located in the Machala and Santa Rosa cantons, in the province of El Oro, for the period from December 2017 to December 2018.

2.1.2 SPECIFIC OBJECTIVES

The specific objectives of the Environmental Compliance Audit are:

i. To determine the current state of the environment surrounding the project's influence area due to dredging activities and offshore sediment deposition.

ii. To evaluate the physical, biotic, socio-environmental factors and environmental impacts that have taken place in the areas of influence of the project resulting from the dredging and offshore deposition works.

iii. To verify compliance with the conditions of the Environmental License granted by the Ministry of the Environment for the project's execution.

iv. To verify compliance with the Environmental Management Plan, as well as with current environmental legislation.

v. To recommend actions and environmental measures to be adopted for the next dredging stage through the Environmental Management Plan update.

2.2 SCOPE

This Environmental Compliance Audit, covers the execution of the Project "DREDGING OF PIERS 1, 2, 3, 4, 5 AND 6, TURNING BASIN AND ACCESS CHANNEL TO PUERTO BOLÍVAR", in the period between December 2017 and December 2018.

The audit will be based on determining the level of compliance with the Environmental Management Plans, current environmental regulations, and compliance with the Environmental License obligations, which will serve as the basis for updating the Environmental Management Plan for the following stages of the project.

CHAPTER 3. AREA OF INFLUENCE

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INDEX OF ILLUSTRATIONS

3 AREA OF INFLUENCE

The definition of the area of influence will take into account physical, biotic, and socioeconomic criteria that may be affected by the dredging activities and the offshore area designated for dredged sediment deposits.

3.1 Area of Direct Influence (ADI)

The area of direct influence refers to the areas adjacent to the project area, where both the social and environmental components may be affected - with varying degrees of significance - by each of the activities that will be carried out during the project execution stages.

Based on the above criteria, the ADR of the project is defined by two areas:

i. The first is the area comprising piers 1, 2, 3, 4, 5, 6, the turning basin, and the access channel to Puerto Bolívar.

ii. The second is the area containing the basin where the sediments are deposited after the dredging process.

3.1.1 Criterion of physical nature

There are three general criteria under which the area of direct influence was determined, these are:

1. Regarding soil. The AID is considered the surface where the different infrastructures required for the project's operation are installed, this being Piers 1, 2, 3, 4, 5, and 6, the turning basin, and the access channel of Puerto Bolívar.

2. Regarding noise. - The use of machinery and equipment could have an effect on the surrounding environment, since the sound pressure levels can be picked up by a receiver at a distance of approximately 1,000 m vector distance, according to the progress of the project, so the area of direct influence is considered to be 1,000 meters in the surrounding area.

3. Regarding water. - The Estero Santa Rosa is the main area where the project will be developed.

3.1.2 Criterion of biotic character

The development of the project activities does not involve vegetation clearing activities; however, within the direct area of influence of the project there are several species of mangroves, which could lead to some form of displacement of birds and terrestrial species due to noise and vibrations caused by the use of machinery. The area of influence of the biotic component is considered to be the 1,000 m around the project according to its progress.

3.1.3 Criterion of socio-environmental character

In social terms, the area of social influence is not limited to the exact place where the project is located, but it extends to the sites of interaction of services demanded by the project activities, for example, the requirement of labor and inputs.

In the case of the dredging process, the project involves the parishes of Jambelí and Puerto Bolívar, corresponding to the cantons of Santa Rosa and Machala, in the province of El Oro.

As per the aforementioned information, the direct area of influence of the licensed Environmental Impact Study for the project areas is 485 hectares.

3.2 Area of indirect influence (AIF)

The area of indirect influence is considered the area that may be impacted by developing the project activities with a lower degree of impact (positive or negative).

Given the degree of intervention in the study area, the main component by which it is feasible to define the AII is the socioeconomic component, given that its effects may be felt outside the ADI, mainly as a result of hiring labor force from the sector during the development of the project.

The Area of Indirect Influence corresponds to the political-administrative limits of Puerto Bolívar parish, Jambelí parish, Machala canton and Santa Rosa canton; according to the following criteria:

3.2.1 Criterion of physical nature

There are three general criteria under which the area of direct influence was determined, these are:

1. Regarding soil. - The cantons of Machala and part of Santa Rosa are considered as AIIs.

2. Regarding noise. - The use of machinery and equipment could have an effect on the surrounding environment; however, there will be no effect on the area of indirect influence.

3. Regarding water. - The Area of Indirect Influence is considered to be the area where sediments will be deposited at sea, located 13.75 nautical miles from Puerto Bolivar.

3.2.2 Criterion of biotic character

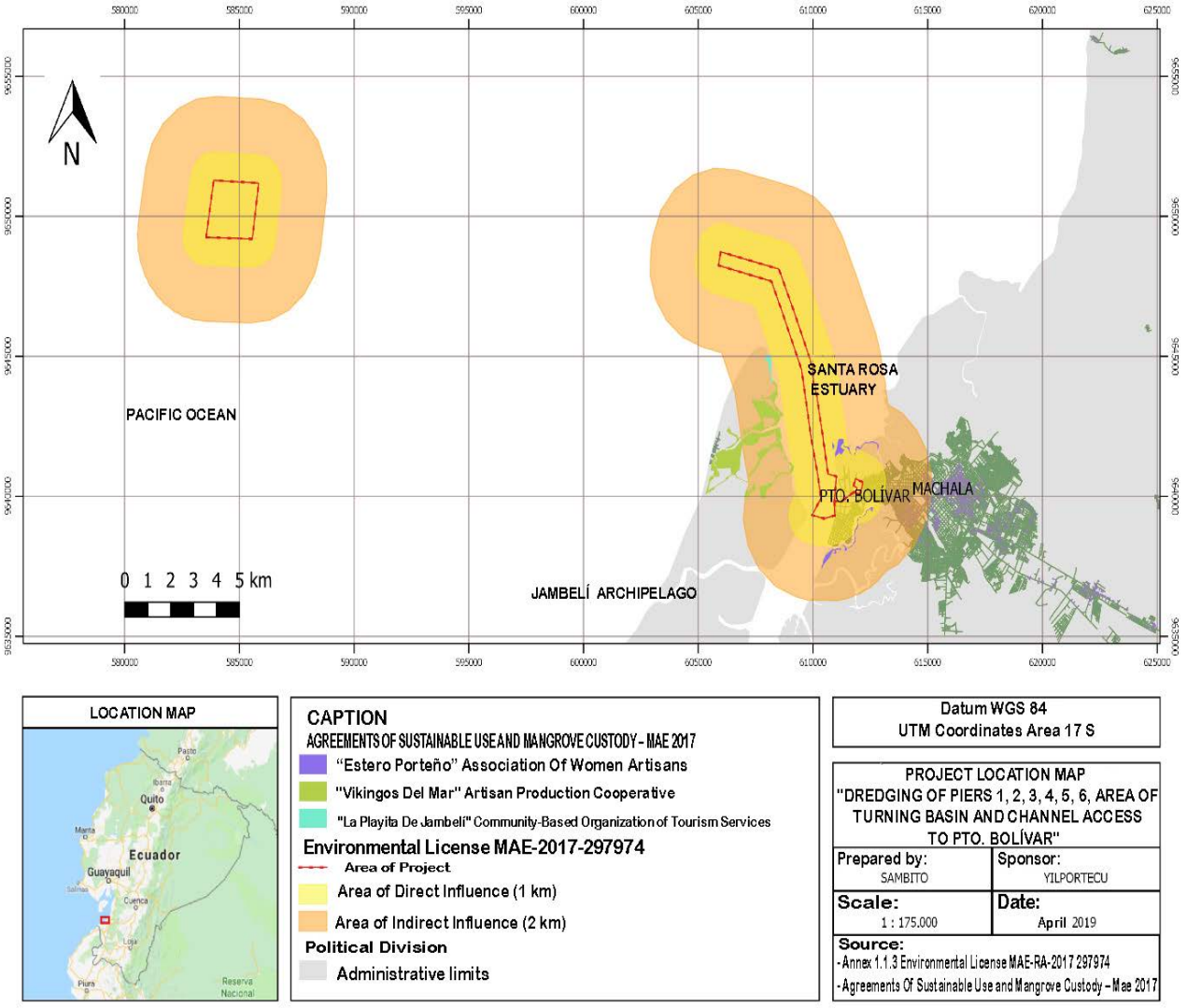
Considering the mobility of the species, the AII is extended to 2,000 m, around the area of direct influence for this component. Mangrove species will be considered firstly, as well as species that could be found in the offshore sediment disposal area.

3.2.3 Criterion of socio-environmental character

It is related to the political-administrative division: in this case, as per the location of the project, it corresponds to the parishes of Jambelí and Puerto Bolívar, in the cantons of Santa Rosa and Machala, respectively. In addition, the province of El Oro will be included in the AII because the project involves productive activities throughout the province.

The areas of direct and indirect influence are shown in Figure 3-1.

Illustration 3-1 Map of the project's area of influence



Prepared by: ECOSAMBITO C. Ltda.
Location: Puerto Bolívar, Machala - El Oro
Fecha: April, 2019

CHAPTER 4. LEGAL FRAMEWORK

Content

4 APPLICABLE LEGAL FRAMEWORK

The environmental compliance audit will be conducted based on the following legal instruments:

4.1 CONSTITUTION OF THE REPUBLIC OF ECUADOR

Approved by the National Constituent Assembly and the Referendum of approval, which is published in the Official Gazette No. 449 of Monday, October 20, 2008.

Titles II: RIGHTS

CHAPTER II: RIGHT TO GOOD LIVING

Art. 13.- Individuals and communities have the right to safe and permanent access to healthy, sufficient and nutritious food, preferably produced locally and in accordance with their diverse identities and cultural traditions. The Ecuadorian state will ensure food sovereignty.

Art. 14.The population's right to live in a healthy and ecologically balanced environment that guarantees sustainability and good living is recognized, sumak kawsay. The preservation of the environment, the conservation of ecosystems, biodiversity, and the integrity of the country's genetic heritage, the prevention of environmental damage, and the recovery of degraded natural spaces are declared to be of public interest.

Art. 15.- The State shall promote, in the public and private sectors, the use of environmentally clean technologies and non-polluting and low-impact alternative energies.

Art. 32.- Health is a right guaranteed by the state, the enforcement of which is linked to the exercise of other rights, including the right to water, food, education, physical culture, work, social security, healthy environments and other rights that promote good living.

CHAPTER VII: RIGHTS OF NATURE

Art. 71.- Nature or Pacha Mama, where life is reproduced and carried out, has the right to full respect for its existence and the maintenance and regeneration of its vital cycles, structure, functions, and evolutionary processes. Any person, community, people or nationality may demand from the public authority the enforcement of nature's rights.

Art. 72.-Nature has the right to be restored. This restoration will be independent of the state and natural or legal persons' obligation to compensate individuals and groups that depend on the affected natural systems.

Art. 73.- The State shall apply precautionary and restrictive measures for activities that may lead to the extinction of species, the destruction of ecosystems or the permanent alteration of natural cycles.

Art. 74.- Individuals, communities, peoples, and nationalities shall have the right to benefit from the environment and natural resources that make it possible for them to live well.

Environmental services shall not be subject to appropriation; their production, provision, use and

exploitation shall be regulated by the state.

CHAPTER IX: RESPONSIBILITIES

Art. 83.- The duties and responsibilities of Ecuadorian men and women are, without prejudice to others provided for in the Constitution and the law:

- Defend the territorial integrity of Ecuador and its Natural Resources;

- Respect the rights of nature, preserve a healthy environment, and use natural resources in a rational, sustainable, and sustainable manner.

Title VI: GOOD LIVING REGIME

CHAPTER I. INCLUSION AND EQUITY

Art. 389.- The State shall protect individuals, communities, and nature against the negative effects of natural or anthropic disasters through risk prevention, disaster mitigation, recovery, and improvement of social, economic, and environmental conditions to minimize the condition of vulnerability.

The decentralized national risk management system is composed of the risk management units of all public and private institutions at the local, regional and national levels. The state will exercise the management role through the technical body established by law. Its main functions will be, among others:

1. Identify existing and potential internal and external risks affecting the Ecuadorian territory.

2. Generate, democratize access to and disseminate sufficient and timely information to manage risk adequately.

3. Ensure that all public and private institutions incorporate risk management to plan and handle strategies on a mandatory and cross-cutting basis.

4. Strengthen citizens' and public and private entities' capacity to identify the risks inherent to their respective spheres of action, report on them, and incorporate actions to reduce them.

5. Articulate institutions to coordinate actions to prevent and mitigate risks and face, recover, and improve conditions before the occurrence of an emergency or disaster.

6. Carry out and coordinate the necessary actions to reduce vulnerabilities and prevent, mitigate, attend to and recover from possible negative effects derived from disasters or emergencies in the national territory.

7. Guarantee sufficient and timely financing for the System's operation and coordinate international cooperation aimed at risk management.

Art. 390. Risks shall be managed under the principle of subsidiary decentralization, which shall imply the institutions' direct responsibility within their geographical scope. When their risk management capacities are insufficient, the authorities with a larger territorial scope and greater technical and financial capacity will provide the necessary support with respect to their authority in the territory and without releasing them of their responsibility.

CHAPTER I. BIODIVERSITY AND NATURAL RESOURCES

SECTION ONE: NATURE AND ENVIRONMENT

Art. 395.- The Constitution recognizes the following environmental principles:

1. The state shall guarantee a sustainable development model, environmentally balanced and respectful of cultural diversity, that conserves biodiversity and the natural regenerative capacity of ecosystems and ensures the satisfaction of present and future generations' needs.

2. Environmental management policies will be applied in a cross-cutting manner and will be mandatory for the state at all levels and for all natural and legal persons in the national territory.

3. The state shall guarantee the active and permanent participation of the affected individuals, communities, peoples and nationalities in the planning, executing, and controlling of all activities that generate environmental impacts.

4. In case of doubt as to the scope of the legal provisions on environmental matters, these shall be applied in a sense most favorable to the protection of nature.

Art. 396.- The State shall adopt the appropriate policies and measures to avoid negative environmental impacts, when there is certainty of damage. In case of doubt about the environmental impact of any action or omission, even if there is no scientific evidence of damage, the state shall adopt effective and timely protective measures. Responsibility for environmental damage is strict. Any damage to the environment, in addition to the corresponding sanctions, will also imply the obligation to fully restore the ecosystems and compensate the affected individuals and communities.

Each of the stakeholders in production, distribution, commercialization, and use of goods or services shall assume direct responsibility for preventing any environmental impact, mitigating and repairing the damage caused, and maintaining a permanent environmental control system. Legal actions to prosecute and punish for environmental damages will not be subject to statutes of limitations.

Art. 397. In case of environmental damage, the state shall act in an immediate and subsidiary manner to guarantee the ecosystems' health and restoration. In addition to the corresponding sanction, the state shall force the individual that executed the activity that caused the damage the obligations to fully repair the damages, under the conditions and procedures established by law. The responsibility will also fall on the officers responsible for environmental control. In order to guarantee the individual and collective right to live in a healthy and ecologically balanced environment, the state undertakes to:

1. Allow any natural or legal person, collectivity or human group to exercise legal actions and resort to judicial and administrative bodies, without prejudice to their direct interest, to obtain from them effective protection in environmental matters, including the possibility of requesting precautionary measures to stop the threat or environmental damage that is the subject of litigation. The burden of proof as to the non-existence of potential or actual damage shall be on the individual that executed the activity or the defendant.

2. Establish effective mechanisms for preventing and controlling environmental pollution, the recovery of degraded natural areas, and the sustainable management of natural resources.

3. Regulate the production, importation, distribution, use and final disposal of toxic and hazardous materials for people or the environment

4. Ensure the intangibility of natural protected areas, so as to guarantee the conservation of biodiversity and the maintenance of the ecological functions of ecosystems. The state shall be in charge of the management and administration of the protected natural areas.

5. Establish a national system of prevention, risk, and natural disaster management, based on the principles of immediacy, efficiency, precaution, responsibility, and solidarity.

Art. 398.- Any state decision or authorization that may affect the environment must be consulted with the community, which shall be informed in a broad and timely manner. The state shall be the consultant. The law shall regulate prior consultation, citizen participation, terms, the subject of consultation, and the criteria for evaluation and objection to the activity that is being consulted. The state shall value the community's opinion according to the criteria established by law and international human rights instruments. If the aforementioned consultation process results in a majority opposition from the respective community, the decision on whether or not to implement the project will be adopted by duly motivated resolution of the corresponding higher administrative instance in accordance with the law.

Art. 399.- The integral exercise of the state guardianship over the environment and the co-responsibility of the citizens in its preservation shall be articulated through a decentralized national system of environmental management, which shall be in charge of the ombudsman of the environment and nature.

SECOND TWO: BIODIVERSITY

Art. 400. The state shall exercise sovereignty over biodiversity, administration, and management, which shall be carried out with intergenerational responsibility. The conservation of biodiversity and all its components, particularly agricultural and wild biodiversity and the country's genetic heritage, is declared to be of public interest.

Art. 402.-The granting of rights, including intellectual property rights, over derived or synthesized products obtained from the collective knowledge associated with national biodiversity is prohibited.

Art. 403.- The State shall not enter into cooperation agreements or covenants that include clauses that undermine the conservation and sustainable management of biodiversity, human health, and collective rights and the rights of nature.

SECTION THREE: CULTURAL HERITAGE AND ECOSYSTEMS

Art. 404.- The unique and invaluable natural heritage of Ecuador includes, among others, the physical, biological and geological formations, the value of which from the environmental, scientific, cultural, or scenic point of view requires their protection, conservation, recovery, and promotion. Its management will be subject to the principles and guarantees enshrined in the Constitution and will be carried out in accordance with land use planning and ecological zoning, in accordance with the law.

Art. 405.- The national system of protected areas shall guarantee biodiversity conservation and the maintenance of ecological functions. The system shall be integrated to the other state, autonomous decentralized, community, and private systems, and the state shall exercise its management and regulation. The state will assign the necessary economic resources for the financial sustainability of the system and will promote the participation of the communities, peoples, and nationalities that have ancestrally inhabited the protected areas in its administration and management.

Art. 406.- The state shall regulate the conservation, management, and sustainable use, recovery, and limitations of the domain of fragile and threatened ecosystems; among others, moorlands, wetlands, cloud forests, dry and humid tropical forests, and mangroves, marine and coastal-marine ecosystems.

SECTION SIX: WATER

Art. 411.- The State shall guarantee the conservation, recovery, and integral management of water resources, hydrographic basins, and ecological flows associated with the hydrological cycle. Any activity that may affect the quality and quantity of water, and the balance of ecosystems, especially in water sources and recharge areas, shall be regulated. The sustainability of ecosystems and human consumption will be a priority in the use and exploitation of water.

Art. 412.- The authority in charge of water management shall be responsible for its planning, regulation, and control. This authority will cooperate and coordinate with the authority in charge of environmental management to guarantee water management with an eco-systemic approach.

4.2 INTERNATIONAL TREATIES AND CONVENTIONS

4.2.1 INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973-MARPOL

Art. 3.- Scope of application:

1) This Convention shall apply to:

a) Vessels entitled to fly the flag of a Party to the Convention; and

b) Vessels not entitled to fly the flag of a Party operating under the authority of a State Party.

2) Nothing in this Article shall be construed as being derogative or as expanding Parties' sovereign rights under international law over the seabed and subsoil thereof adjacent to their coasts to explore or exploit their natural resources.

3) This Convention shall not apply to warships and auxiliary naval units, nor to ships owned or operated by a State and used for the time being only on non-commercial government service. However, each Party shall be careful to take appropriate measures to ensure that, so far as is reasonable and practicable, such state owned or operated vessels act in a manner consistent with the intent and purpose of this Convention, without impairing the operations or operational capability of such vessels.

Art. 4.- Violations

1) Any violation of this Convention's provisions, wherever it occurs, shall be prohibited and shall be sanctioned by the legislation of the administration of the involved vessel. If the administration, after being informed of a violation, considers that there is sufficient evidence to initiate proceedings as regards the alleged violation, it shall file such proceedings as soon as possible in accordance with the laws.

2) Any violation of the provisions of this Convention within the jurisdiction of any Party to the Convention shall be prohibited and shall be punishable under the laws of that Party.

Whenever such a violation occurs, that Party shall take one of the following two measures:

a) file proceedings in accordance with its legislation; or

b) provide to the administration of the vessel all information and evidence showing that a violation has occurred.

3) When the administration of a vessel is provided with information or evidence relating to any violation of this Convention committed by that vessel, the administration shall immediately inform the Party which provided the information or evidence and the Organization of the measures taken.

4) Pursuant to this article, the penalties provided for in the law for a party's non-compliance

shall be sufficiently severe to deter any violation of this Convention. The severity of the penalty shall be the same wherever the violation occurs.

Art. 5.- Certificates and Special Rules on Vessel Inspection

1) Subject to the provisions of paragraph (2) of this Article, any certificate issued under the authority of a Party to the Convention in accordance with the provisions of the Regulations shall be accepted by the other Parties and shall be considered as valid, for all the purposes provided for in this Convention, as certificates issued by them.

2) Every ship required to hold a certificate in accordance with the provisions of the rules shall, while in ports or offshore terminals under the jurisdiction of a Party, be subject to inspection by officials duly authorized by that Party. Such inspection shall be limited to verifying that a valid certificate is on board, unless there are clear grounds for believing that the vessel's condition or its equipment does not substantially correspond to the particular information of the certificate. In such a case, or if it appears that the ship is not carrying a valid certificate, the inspecting party shall take the necessary measures to ensure that the ship does not proceed to sea until it can do so without unreasonable threat of harm to the marine environment. Nevertheless, such Party may permit the ship to leave the port or offshore terminal for the purpose of proceeding to the nearest suitable shipyard.

3) When a Party refuses the entry to a foreign ship into ports or offshore terminals under its jurisdiction or otherwise takes action against such ship on the grounds that it does not comply with the provisions of this Convention, that Party shall immediately inform the consul or diplomatic representative of the Party whose flag the ship is entitled to fly or, if that is not possible, the administration of the ship concerned. Before refusing entry or intervening in any way, the Party may request a consultation with the administration of the vessel concerned. The administration shall also be informed whenever there is doubt that the vessel is or not carrying a valid certificate according to the provisions of the regulations.

4) With respect to vessels of States that are not Parties to the Convention, the Parties

5) shall apply, as long as possible, the provisions of this Convention to ensure that no more favorable treatment is given to such vessels.

Art. 6.- Detection of violations to the Convention and compliance thereof.

1) The Parties to the Convention shall cooperate in any action leading to the detection of violations and compliance with the provisions of this Convention by making use of any appropriate and practicable measures for detection and environmental monitoring and control, as well as appropriate methods for the transmission of information and accumulation of evidence.

2) Any ship to which this Convention applies may be subject to inspection at any port or offshore terminal of a Party by such officers as may be appointed or authorized by that Party to verify whether the ship has discharged harmful substances in violation of the regulations. If the inspection indicates that there has been a violation of this Convention, a report shall be sent to the administration so that it may take appropriate action.

3) Any Party shall provide the administration with evidence, if available, that a vessel has discharged harmful substances, or effluents containing such substances, in violation of the regulations.

Where possible, such Party's competent authority shall notify the captain of the vessel of the alleged violation.

4) Upon receipt of the evidence referred to in this Article, the administration shall investigate the matter and may request the other party to provide further or better evidence of the alleged violation. If the administration considers that there is sufficient evidence to initiate proceedings in respect of the alleged violation, it shall file such proceedings as soon as possible in accordance with its legislation. The administration shall immediately give notice of the action taken to the Party which has reported the alleged violation and to the Organization.

5) Any Party may also inspect a ship under this Convention when the ship enters a port or offshore terminal under its jurisdiction, provided it has received from any other Party a request for an investigation together with sufficient evidence that the ship has discharged harmful substances, or effluents containing such substances, at any place. The investigation report shall be submitted both to the requesting Party and to the administration in order that appropriate action may be taken in accordance with this Convention.

Art. 7.- Unnecessary Delays to Vessels

1) Every effort shall be made to prevent a ship from suffering unnecessary detention or delay due to measures taken in accordance with Articles 4, 5, and 6 of this Convention.

2) Where a ship has suffered unnecessary detention or delay as a result of measures taken in accordance with Articles 4, 5, and 6 of this Convention, it shall be entitled to compensation for any loss or damage suffered.

Art. 8.- Reports on events involving harmful substances

1) The report of these events shall be made without delay, applying the provisions of Protocol I of this Convention as far as possible.

2) Each Party to the Convention shall:

a. take all necessary measures so that a competent officer or entity receives and make the reports corresponding to the events;

b. Notify the Organization, giving full details of the aforementioned measures, to bring them to the attention of the other Parties and Member States of the Organization.

3) Whenever a Party receives a report under the provisions of this Article, it shall promptly forward it to:

a. the administration of the vessel concerned;

b. any other state likely to be affected.

4) Each Party to the Convention undertakes to instruct its maritime inspection vessels and aircraft and other competent services to report to its authorities any of the events referred to in Protocol I to this Convention. If it considers it appropriate, such Party shall submit a report to the Organization and to any other Party concerned.

Art. 9.- Other treaties and their interpretation:

1) As from its entry into force, this Convention shall replace the International Convention for the Prevention of Pollution of the Sea by Oil, 1954, as amended, as between the Parties to that Convention.

2) Nothing in this Convention shall prejudice the codification and development of maritime law at the United Nations Conference on the Law of the Sea according to resolution 2750 C (XXV) of the General Assembly of the United Nations, nor the present or future claims and legal thesis of any State concerning maritime law and the nature and extent of its jurisdiction over its coastal area or over ships flying its flag.

3) The term "jurisdiction" in this Convention shall be interpreted in the light of the international law in force when this Convention is to be applied or interpreted.

Art. 10.- Settlement of Disputes: Any dispute between two or more Parties to the Convention concerning the interpretation or application of this Convention, which could not be settled by negotiation between the Parties concerned, shall, at the request of any of them, be submitted to the arbitration procedure established in Protocol II of this Convention, unless those Parties agree on another procedure.

Art. 11.- Communication of information

1) The Parties to the Agreement undertake to communicate to the Organization:

a. The text of laws, ordinances, decrees, regulations, and other instruments to be promulgated concerning the various matters within the scope of this Convention;

b. A list of the non-governmental bodies authorized to act on its behalf with respect
to the design, construction, and equipment of ships and equipment of vessels intended for the transportation of harmful substances, in accordance with the provisions of the Regulations;

c. Samples, in sufficient number, of the certificates issued under the provisions of the regulations;

d. A list of the reception facilities indicating their location, capacity, available equipment and other characteristics; e. Official reports or summaries of official reports insofar as they reveal the results of this Agreement's application; and f. In the form standardized by the Organization, an annual statistical report of penalties imposed for violations of this Agreement.

2) The Organization shall notify the Parties of any communication received by it under this article and shall circulate to the Parties any information communicated to it in accordance with paragraph (1)(b) to (f) of this article.

Art. 12.- Casualties to vessels

1) The Administrations undertake to investigate any casualty occurring to any of their ships which is subject to the provisions of the Regulations if such casualty has caused significant deleterious effects on the marine environment.

2) The Parties to the Convention undertake to inform the Organization of the results of such investigations whenever they consider that such information will assist in determining what amendments to this Convention should be made.

Art. 13.- Signature, ratification, acceptance, approval and adherence:

1) This Convention shall be open for entering into it at the headquarters of the Organization from January 15, 1974, until December 31, 1974, and thereafter, it shall remain open for adherence. States may become parties to this Convention by: (a) signing it without reservation as to ratification, acceptance or approval; or (b) signing it subject to ratification, acceptance or approval, followed by ratification, acceptance or approval; or (c) adherence.

2) Ratification, acceptance, approval or adherence shall be executed by means of an instrument to that effect to be held by the Secretary General of the Organization.

3) The Secretary General of the Organization shall inform all States that have signed or adhered to this Convention of any signature or the issuance of any new instrument of ratification, acceptance, approval, or adherence, and the date thereof.

Art. 14.- Optional Annexes

1) At the time of signing, any State may ratify, accept, approve, or adhere to this Convention, declare that it does not accept any or all of Annexes III, IV, and V (hereinafter referred to as optional annexes) to this Convention. Subject to the foregoing, the Parties to the Convention shall be bound by any of the Annexes in their entirety.

Convention shall be bound by any of the annexes in their entirety.

2) Any State which has declared that it does not consider itself bound by any optional annex may at any time accept such annex by submitting to the Organization an instrument of the type prescribed in paragraph (2) of Article 13.

3) Any State that makes a statement under paragraph (1) of this Article in respect of an optional annex and that has not subsequently accepted that annex in accordance with paragraph (2) of this Article shall not assume any obligations and shall not be entitled to claim any privileges under this Convention, in respect of matters relating to the annex in question, and references to Parties to this Convention shall not include such state in respect of matters related to that annex.

4) The Organization shall inform all States that have signed or adhered to this Convention of any declaration made under this Article and any instrument received and issued in accordance with paragraph (2) of this Article.

Art. 16.- Amendments

1) Any of the procedures specified below may amend this Agreement;

2) Amendment after prior consideration by the Organization:

a. any amendment proposed by a Party to the Convention shall be submitted to the Organization and circulated by the Secretary General of the Organization to all Members of the Organization and to all Parties at least six months before its consideration;

b. any amendment proposed and circulated under subparagraph (a) of this paragraph shall be submitted by the Organization to a competent body for consideration;

c. Parties to the Convention, whether or not Members of the Organization, shall be entitled to participate in the deliberations of the appropriate body;

d. The amendments shall be adopted by a two-thirds majority of those who are present and voting, with only Parties to the Convention being able to take part in the vote;

e. if the amendment were adopted in accordance with subparagraph (d) of this paragraph, the amendment shall be communicated by the Secretary General of the Organization to all Parties to the Convention;

f. an amendment shall be deemed to have been accepted in the following circumstances:

i) An amendment to an article of the Convention shall be deemed accepted as of the date on which it has been accepted by two-thirds of the Parties whose combined merchant fleets represent not less than 50 per-cent of the gross tonnage of the world merchant fleet;

ii) An amendment to an annex to the Convention shall be deemed accepted in accordance with the procedure specified in subparagraph (f) of this paragraph unless the competent body, at the time of its adoption, determines that the amendment shall be deemed accepted as of the date on which two-thirds of the Parties whose combined merchant fleets represent not less than 50 per-cent of the gross tonnage of the world merchant fleet have accepted it.

However, at any time prior to the entry into force of an amendment to an annex to the Convention, a Party may notify the Secretary General of the Organization that the amendment shall enter into force for that Party only with its express approval. The Secretary General shall bring such notification and the date of its receipt to the attention of the Parties;

iii) An amendment to an appendix to an annex to the Convention shall be deemed to be accepted at the end of a period of not less than ten months, to be determined by the competent body at the time of its adoption, unless within that period at least one-third of the Parties, or those Parties whose combined merchant fleets represent at least 50 per-cent of the gross tonnage of the world merchant fleet, whichever happens first, notify the Organization that they reject the amendment;

iv) Any amendment to Protocol I of the Convention shall be subject to the same procedures as those set forth in subparagraph (ii) or (iii) of paragraph (f) for amending the annexes to the Convention;

v) Any amendment to Protocol II of the Convention shall be subject to the same procedures as those set forth in subparagraph (i) of paragraph (f) for amending the Articles of the Convention;

g. The amendment shall enter into force under the following conditions:

i) In the case of an amendment to an Article or Protocol II of the Convention, or to Protocol I or to an Annex to the Convention which is not made in accordance with the procedure specified in subparagraph (iii) of paragraph (f), an amendment accepted in accordance with the foregoing provisions shall enter into force six months after the date of its acceptance with respect to those Parties which have declared their acceptance thereof; and

ii) In the case of an amendment to Protocol I, to an appendix to an annex or to an annex to the Convention which is made in accordance with the procedure specified in subparagraph (iii) of paragraph (f), an amendment deemed to have been accepted in accordance with the foregoing conditions shall enter into force six months after its acceptance with respect to all Parties except those which, prior to that date, have declared that they do not accept it or have notified, under subparagraph (ii) of paragraph (f), that their express approval is required.

3) Amendment by means of a Conference:

a. At the request of any Party, provided that at least one-third of the Parties agree to it, the Organization shall convene a conference of the Parties to the Convention to consider amendments to this Convention;

b. Any amendment adopted at such conference by a two-thirds majority of the Parties present and voting shall be communicated by the Secretary General of the Organization to all Parties so that they may accept it;

c. unless the Conference decides otherwise, the amendment shall be deemed to have been accepted and to have been entered into in accordance with the procedures specified for that purpose in subparagraphs (f) and (g) of paragraph (2).

4) a. In the case of an amendment to an optional annex, any reference in this Article to a Party to the Convention shall also be considered as a reference to a Party bound by that annex;

b. any Party that has refused to accept an amendment to an annex shall be considered a non-Party with respect to the application of that amendment only.

5) The adoption and entry into force of a new annex shall be subject to the same procedures as the adoption and entry into force of an amendment to the Convention's article.

6) Unless expressly stated otherwise, any amendment relating to the structure of a vessel to this Convention, made in accordance with the provisions of this Article, shall apply only to vessels for which a building contract has been concluded or, if there is no building contract, the keel of has been laid on or after the date on which the amendment enters into force.

7) Any amendment to a Protocol or Annex must relate to the substance of that Protocol or Annex and be consistent with the provisions of the Articles of this Convention.

8) The Secretary General of the Organization shall inform all Parties of any amendment that enters into force under this Article, as well as of the date of entry into force of each such amendment.

9) Any declaration of acceptance or rejection of an amendment under this Article shall be notified in writing to the Secretary General of the Organization, who shall inform the Parties to the Convention of the receipt of the notification and the date of its receipt.

Art. 18.- Denunciation

1) This Convention, or any of its optional annexes, may be denounced by a Party to the Convention at any time after the expiration of five years from the date on which the Convention or the annex entered into force for that Party.

2) Denunciation shall be effected by written notification to the General Secretary of the Organization, who shall inform the other Parties of the receipt of such notification, the date of its receipt and of the date on which such denunciation takes effect.

3) The denunciation shall take effect twelve months after receipt by the Secretary General of the Organization of the notification of denunciation or upon the expiration of such longer period as may be stipulated in such notification.

Art. 19. Deposit and Registration

1) This Agreement shall be held by the Secretary General of the Organization, who shall issue duly certified true copies thereof to all States entering into or adhering to this Convention.

2) As soon as this Convention enters into force, the Secretary General of the Organization shall submit its text to the General Secretary of the United Nations for registration and publication in accordance with Article 102 of the Charter of the United Nations.

1978 PROTOCOL RELATED TO THE INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973-MARPOL

Art. 3.- Communication of information

The text of Article 11 (1)(b) of the Convention is replaced by the following:

"a list of the appointed inspectors or recognized organizations authorized to act on its behalf in connection with the management of matters relating to the design, construction, equipment, and operation of ships intended for the transportation of harmful substances, in accordance with the provisions of the regulations to distribute such list among the Parties so that they may notify their officials. The administration shall notify the Organization of the specific terms of reference it has assigned to the appointed inspectors or recognized organizations and the conditions under which authority has been delegated to them."

Art. 6.- Amendments

The procedures set forth in Article 16 of the Convention with respect to amendments to the Articles, an annex, and an appendix to an annex to the Convention shall apply respectively to amendments to the Articles, an annex and an appendix to an annex to this Protocol.

Art. 7.- Denunciation

1. A Party may denounce this Protocol in the present Protocol at any time after the expiration of five years from the date on which the Protocol entered into force for that Party.

2. Denunciation shall be effected by filing an instrument of denunciation with the Secretary General of the Organization.

3. The denunciation shall take effect twelve months after the receipt by the Secretary General of the Organization of the notification, or after the expiration of such longer period as may be specified in the notification.

Art. 8.- Depositary

1. This Protocol shall be deposited with the Secretary General of the Organization (hereinafter called the Depositary).

2. The depositary:

a. Shall inform all States which have entered into this Protocol or adhered to it, of:

- each new Signature and each new deposit of instruments of ratification, acceptance, approval or adherence, as they occur and the date on which they occur;

- the date of entry into force of this Protocol; - any deposit of an instrument of denunciation of this Protocol and the date on which such instrument was received, as well as the date on which the denunciation takes effect;

- any decision taken in accordance with Article II(1) of this Protocol;

b. It shall issue certified true copies of this Protocol to all States that have signed or adhered to it.

3. As soon as this Protocol enters into force, the Depositary shall issue a true certified copy thereof to the Secretariat of the United Nations for registration and publication in accordance with Article 102 of the Charter of the United Nations.

AMENDMENTS TO THE ANNEX TO THE 1978 PROTOCOL RELATING TO THE INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973

- Small island developing States may satisfy the requirements of paragraphs 1 to 3 of this requirement through regional agreements where, due to the unique circumstances of these States, such agreements are the only practical means of satisfying such requirements. Parties participating in a regional agreement shall develop a regional reception facility plan taking into account the guidelines developed by the Organization.
- The Governments of the Parties participating in the agreement shall consult with the Organization, for distribution to the Parties to this Agreement:

1. The manner in which the guidelines are taken into account in the regional plan for reception facilities;

2. The details of the regional reception facilities for ship wastes that have been identified; and

3. Details of ports that only have limited facilities.

4. Small island developing States may satisfy the requirements of paragraph 4 of this rule through regional agreements when, due to the unique circumstances of these States, such agreements are the only practical means of satisfying such requirements. Parties participating in a regional agreement shall develop a regional reception facility plan considering the Organization's guidelines.

- The Governments of the Parties participating in the agreement shall consult with the Organization, for distribution to the Parties to this Agreement:

1. The manner in which the guidelines are taken into account in the regional plan for reception facilities;

2. The details of the regional reception facilities for ship wastes that have been identified; and

3. The details of ports that only have limited facilities."

- Small island developing States may satisfy the requirements of paragraphs 1, 2 and 4 of this requirement through regional agreements where, due to the unique circumstances of these States, such agreements are the only practical means of satisfying these requirements. Parties participating in a regional agreement shall develop a regional reception facility plan taking into account the guidelines developed by the Organization.

- The Governments of the Parties participating in the agreement shall consult with the Organization, for distribution to the Parties to this Agreement:

1. The manner in which the guidelines are taken into account in the regional plan for reception facilities;

2. The details of the regional reception facilities for ship wastes that have been identified; and

3. Details of ports that only have limited facilities.

- Small island developing States may satisfy the requirements of paragraph 1 of this rule through regional agreements when, due to the unique circumstances of these States, such agreements are the only practical means of satisfying such requirements. Parties participating in a regional agreement shall develop a regional reception facility plan taking into account the guidelines developed by the Organization.

- The Governments of the Parties participating in the agreement shall consult with the Organization, for distribution to the Parties to this Agreement:

1. The manner in which the guidelines are taken into account in the regional plan for reception facilities;

2. The details of the regional reception facilities for ship wastes that have been identified; and

3. The details of ports that only have limited facilities."

4. The following new paragraph 2bis is added to Annex V, rule 8:1 of Annex V:1

- Small island developing States may satisfy the requirements of paragraphs 1 and 2.1 of this regulation through regional arrangements where, because of such States' unique circumstances, such arrangements are the only practical means of satisfying those requirements. Parties participating in a regional agreement shall develop a regional reception facility plan taking into account the guidelines developed by the Organization.

- The Governments of the Parties participating in the agreement shall consult with the Organization, for distribution to the Parties to this Agreement:

1. The manner in which the guidelines are taken into account in the regional plan for reception facilities;

2. The details of the regional reception facilities for ship wastes that have been identified; and

3. The details of ports that only have limited facilities."

AMENDMENTS TO THE ANNEX TO THE 1978 PROTOCOL RELATING TO THE INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973.
MEPC RESOLUTION 238 (65) adopted on May 17, 2013

- Regulation 6

The current text of the last sentence of paragraph 3.1 is replaced by the following: "Such organizations, including ship classification societies, shall be authorized by the administration in accordance with the provisions of this Agreement and with the Code for Recognized Organizations (RO Code), consisting of Part 1 and Part 2 (the provisions of which shall be considered mandatory) and Part 3 (the provisions of which shall be considered recommendatory), adopted by the Organization by resolution MEPC.237(65), as may be amended by the Organization, provided that:

1. Amendments to Part 1 and Part 2 of the RO Code are adopted, enter into force and take effect in accordance with the provisions of Article 16 of this Convention, relating to the amendment procedures applicable to this Annex;

2. The Marine Environment Protection Committee adopts amendments to Part 3 of the RO Code in accordance with its Rules of Procedure; and

3. Any amendments referred to in .1 and .2, adopted by the Maritime Safety Committee and the Marine Environment Protection Committee, are identical and enter into force or become effective simultaneously, as appropriate."

Amendments to Annex II of the MARPOL Convention

- Regulation 8

The current text of the last sentence of paragraph 2.2 is replaced by the following:

"Such organizations, including ship classification societies, shall be authorized by the administration in accordance with the provisions of this Agreement and with the Code for Recognized Organizations (RO Code), consisting of Part 1 and Part 2 (the provisions of which shall be considered mandatory) and Part 3 (the provisions of which shall be considered recommendatory), adopted by the Organization by resolution MEPC.237(65), as may be amended by the Organization, provided that:

1. Amendments to Part 1 and Part 2 of the RO Code are adopted, enter into force and take effect in accordance with the provisions of Article 16 of this Convention, relating to the amendment procedures applicable to this Annex;

2. The Marine Environment Protection Committee adopts amendments to Part 3 of the RO Code in accordance with its Rules of Procedure; and

3. Any amendments referred to in .1 and .2, adopted by the Maritime Safety Committee and the Marine Environment Protection Committee, are identical and enter into force or become effective simultaneously, as appropriate."

AMENDMENTS TO THE ANNEX TO THE 1978 PROTOCOL RELATING TO THE INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973.
MEPC RESOLUTION 264 (66) adopted on April 04, 2014

Regulation 1

- 35 Audit means the systematic, independent, and documented process of obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are met.

- 36 Audit Plan means the Audit Plan of the Member States of the IMO established by the Organization taking into account the guidelines developed by the Organization.*

- 37 The Code for Implementation means the Code for the Implementation of IMO Instruments (Code III), adopted by the Organization by resolution A.1070(28).

- 38 Auditing standard means the Code for implementation."

Regulation 44: Scope of application

- The Parties shall implement the Code's provisions to exercise the obligations and responsibilities contained in this Annex.

Regulation 45: Verification of Compliance

- Each Party shall be subject to periodic audits by the Organization in accordance with the auditing standard to verify compliance with and implementation of this Annex.

- The Secretary General of the Organization shall be responsible for administering the Audit Plan, based on the Organization's guidelines.*

- Each Party shall be responsible for facilitating the audits and implementing a program of measures to address the findings, based on the Organization's guidelines.

- The audit of all Parties shall be based on a general schedule established by the Secretary General of the Organization, taking into account the Organization's guidelines.

The following text is added at the end of Regulation 1:

- 18 Audit means the systematic, independent, and documented process of obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are met.

- 19 Audit Plan means the Audit Plan of the Member States of the IMO established by the Organization taking into account the guidelines developed by the Organization.*

- 20 Code for Implementation means the Code for the Implementation of IMO Instruments (Code III), adopted by the Organization by means of resolution A. 1070 (28).

- 21 Auditing standard means the Code for Implementation.

Regulation 19: Scope of application

- The Parties shall implement the provisions of the Code in the exercise of the obligations and responsibilities contained in this Annex.

Regulation 20: Verification of Compliance

- Each Party shall be subject to periodic audits by the Organization in accordance with the auditing standard to verify compliance with and implementation of this Annex.

- The Secretary General of the Organization shall be responsible for administering the Audit Plan, based on guidelines developed by the Organization.

- Each Party shall be responsible for facilitating the conduct of the audits and the implementation of a program of measures to address the findings, based on the guidelines developed by the Organization.

- The audit of all Parties:

1. Shall be based on a general schedule established by the Secretary General of the Organization, taking into account the Organization's guidelines, and

2. Shall be conducted at periodic intervals, taking into account the guidelines developed by the Organization.

Regulation 10: Scope of application

- The Parties shall implement the Code's provisions in the exercise of the obligations and responsibilities contained in this Annex.

Regulation 11: Verification of Compliance

- Each Party shall be subject to periodic audits by the Organization in accordance with the auditing standard to verify compliance with and implementation of this Annex.

- The Secretary General of the Organization shall be responsible for administering the Audit Plan, based on the Organization's guidelines.

- Each Party shall be responsible for facilitating audits and implementing a program of measures to address the findings based on the Organization's guidelines.*

- The audit of all Parties:

1. Shall be based on a general schedule established by the Secretary General of the Organization, taking into account the Organization's guidelines, and

2. Shall be conducted at periodic intervals, taking into account the guidelines developed by the Organization.

Regulation 15: Scope of application

- The Parties shall implement the provisions of the Code in the exercise of the obligations and responsibilities contained in this Annex.

Regulation 16: Verification of Compliance

- Each Party shall be subject to periodic audits by the Organization in accordance with the auditing standard to verify compliance with and implementation of this Annex.

- The Secretary General of the Organization shall be responsible for administering the Audit Plan, based on the Organization's guidelines.*

- Each Party shall be responsible for facilitating audits and implementing a program of measures to address the findings, based on guidelines developed by the Organization.

- The audit of all Parties:

1. Shall be based on a general schedule established by the Secretary General of the Organization, taking into account the Organization's guidelines, and

2. Shall be conducted at periodic intervals, taking into account the guidelines developed by the Organization.

4.2.2 UNITED NATIONS CONVENTION ON THE LAW OF THE SEA

To approve the United Nations Convention on the Law of the Sea (CONVEMAR) with the Declaration of Ecuador at the time of its adherence to the United Nations Convention on the Law of the Sea.

Entered into and subscribed at the National Assembly's headquarters, located in the Metropolitan District of Quito, province of Pichincha, on the twenty-second day of the month of May of the year two thousand twelve. Published in Official Gazette Supplement 715 of June 1, 2012.

- **Art. 1.-** The adherence to the United Nations Convention on the Law of the Sea (UNCLOS), signed on December 10, 1982, is hereby ratified with the Declaration made by the National Assembly.

PART II THE TERRITORIAL SEA AND THE CONTIGUOUS ZONE SECTION 1. GENERAL PROVISIONS

- **Art. 2.-** Legal regime of the territorial sea, of the airspace above the territorial sea, and its seabed and subsoil 1. The sovereignty of the coastal state extends beyond its territory of its internal waters and, in the case of the archipelagic state, of its archipelagic waters, to the adjacent strip of sea designated by the name of the territorial sea. 2. This sovereignty extends to the airspace over the territorial sea, as well as to the seabed and subsoil of that sea. 3. Sovereignty over the territorial sea is exercised according to this Convention and other international law rules.

SECTION 2. LIMITS OF THE TERRITORIAL SEA

- **Art. 3.-** Width of the territorial sea Every State has the right to establish the width of its territorial sea up to a limit not exceeding 12 nautical miles measured from baselines determined in accordance with this Convention.

- **Art. 10.-** Bays

1. This article refers only to bays whose coasts belong to a single State.

2. For this Convention's purposes, a bay is any well-determined indentation whose penetration inland, in relation to the width of its mouth, is such as to contain waters enclosed by the coast and constitutes more than a mere inflection of the coast. However, the indentation shall not be considered a bay if its area is not equal to or greater than that of a semicircle having the indentation's mouth as its diameter.

3. For the purposes of measurement, the area of an indentation in the area between the low tide line following the coast of the indentation and a line joining the low tide lines of its natural points of entry.

When, due to islands' existence, an indentation has more than one entrance, the semicircle

will be drawn, taking as diameter the sum of the lengths of the lines that close all the entrances. The islands' surface within an indentation shall be included in the total surface of the indentation.

4. If the distance between the low-tide lines of the natural points of entry to a bay does not exceed 24 nautical miles, a line of demarcation may be drawn between the two low-tide lines and the waters thus enclosed shall be considered internal waters.

- **Art. 11.- Ports.** To delimitate the territorial sea, the permanent port constructions farthest from the coast that form an integral part of the port system are considered to be part of the coast. Offshore installations and artificial islands are not considered as permanent port constructions.

- **Art. 12.- Roadsteads.** The roadsteads normally used for the loading, unloading, and anchorage of vessels, which would otherwise be situated wholly or partly outside the general outline of the territorial sea's outer limit, are included in the territorial sea.

4.2.3 LONDON CONVENTION: CONVENTION ON THE PREVENTION OF POLLUTION OF THE SEA BY DUMPING OF WASTES AND OTHER MATTER, 1972

- **Art.1.-** The contracting parties shall individually and collectively promote the effective control of all sources of pollution of the marine environment, and undertake, especially, to adopt all possible measures to prevent the pollution of the sea by the discharge of wastes and other matter which may constitute a danger to human health, damage biological resources, and marine life, reduce the possibilities of spreading or hinder other legitimate uses of the sea.

- **Art. 2.-**The Contracting Parties shall, in accordance with the provisions of the following articles, take effective measures individually, according to their scientific, technical, and economic capabilities, and collectively, to prevent the pollution of the sea by means of dumping, and shall harmonize their policies in this respect.

- **Art. 3.-** For the purposes of this Convention:

1. **(a)** Dumping means:

- Any deliberate disposal at sea of wastes or other matter from ships, aircraft, platforms or other offshore constructions;

- Any deliberate sinking at sea of vessels, aircraft, platforms or other constructions at sea.

b) Dumping does not include :

- The disposal at sea of wastes and other matter incidental to or arising from the normal operations of ships, aircraft, platforms, or other offshore constructions and the equipment thereof, except wastes and other matter transported on ships, aircraft, platforms, or other offshore constructions that operate to dispose of such matter or that derive from the treatment of such wastes or other matter on such ships, aircraft, platforms or constructions;

- The placement of materials for a purpose other than mere disposal. Provided that such placement is not contrary to the objectives of this Convention.

c) This Convention's provisions shall not cover the disposal of wastes or other matter directly derived from the offshore exploration, exploitation and related processing of deep seabed mineral resources or associated with them.

2. Vessels and aircraft are understood to be vehicles moving on water or in the air, of any type whatsoever. This term includes vehicles moving on a cushion of air and floating vehicles, whether or not self-propelled.

3. Sea means all marine waters other than the internal waters from the States.

Waste or other matter means materials and substances of any kind, form, or nature.

4. Waste or other matter means materials and substances of any kind, form, or nature.

5. Special permit means a permit specifically granted upon request and in accordance with Annex II and Annex III.

6. General permit means a permit granted in advance and in accordance with Annex III.

7. The Organization means the organization designated by the Contracting Parties in accordance with Article XIV, paragraph 2.

- Art. 4.

1. In accordance with the provisions of this Agreement, the Contracting Parties shall prohibit the disposal of any wastes or other materials in any form or under any conditions, except as specified below:

a) The disposal of wastes or other materials listed in Annex I is prohibited;
b) A special prior permit is required for the discharge of wastes or other materials listed in Annex II;
c) A prior general permit is required for the discharge of all other wastes or materials.

2. Permits shall be granted only after careful consideration of all the factors listed in Annex III, including previous studies of the discharge site's characteristics,

as stipulated in sections B and C of said annex.

3. Nothing in this Convention may be construed to prevent a Contracting Party from prohibiting, as far as that Party is concerned, the disposal of waste or other matters not referred to in Annex I. The Party concerned shall notify such measures to the Organization.

The purpose of the London Convention is to promote the effective control of all sources of pollution of the marine environment and the adoption of all practicable measures to prevent pollution of the sea by dumping of wastes and other matter. There are currently 87 States Parties to the Convention, including Spain, and the Secretariat of the Convention is hosted by the International Maritime Organization, based in London.

Unlike the OSPAR and Barcelona Conventions, the London Convention deals only with discharges from ships and not with those that reach the sea from land.

In 1996, the "London Convention Protocol" was adopted to modernize the Convention, which entered into force in March 2006. The 72 Convention establishes a list of substances and products that cannot be discharged into the sea but, in accordance with the new Protocol, the procedure referred to as the "reverse list" is established, i.e., the dumping into the sea of all wastes is prohibited with the sole exception of those included in the list that constitutes Annex I to the Protocol.

Therefore, only the following materials are susceptible to discharge:

1. Dredging material
2. Sewage sludge
3. Dumping of fishing discards or materials resulting from fish handling operations
4. Vessels and platforms, or other constructions at sea
5. Inert inorganic geological materials
6. Organic matter of natural origin
7. Innocuous bulky objects generated in isolated facilities (such as small islands) without the possibility of other disposal options Subsequently, in 2007, amendments were adopted to include a new category of material susceptible to its discharge into the sea, CO2 flows for trapping into underwater geological structures.

This amendment protocol also reflects the progress and requirements that come from the Rio de Janeiro Conference (1992) and the precautionary and polluting principles and prohibiting incineration at sea and the export of waste.

Within the Protocol's scope, "General Guidelines" and "Specific Guidelines" have been drafted for some of the wastes that can be dumped. These guidelines detail the procedures for waste assessment, selection of the disposal area, monitoring procedures, characterization, etc.

4.2.4 BASEL CONVENTION

Article 4(2)(a) of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Disposal states that each Party shall take appropriate measures to minimize the generation of hazardous wastes and other wastes within it, considering social, technological, and economic aspects.

Article 4.2(b) of the Basel Convention states that each Party shall take appropriate measures to establish adequate disposal facilities for the environmentally sound management of hazardous wastes and other wastes, irrespective of the disposal site, which, to the extent practicable, shall be located within it; Article 4(2)(c) of the Basel Convention provides that each Party shall ensure that persons involved in the management of hazardous wastes and other wastes within it take the necessary measures to prevent such management from giving rise to pollution and, if pollution does occur, to minimize its consequences for human health and the environment.

4.2.5 STOCKHOLM CONVENTION

- **Art. 1** Each Party:

(a) Prohibits and/or takes any legal and administrative measures necessary to eliminate: (i) Their production and use of the chemicals listed in annex A subject to the provisions set out in that annex; and (ii) Its imports and exports of chemicals listed in annex A in accordance with the provisions of paragraph 2.

(b) Restricts their production and use of chemicals listed in annex B in accordance with the provisions of that annex.

- **Art. 2**.- Subparagraph a. Protect human health and the environment by taking the necessary measures to minimize or prevent releases.

4.2.6 ROTTERDAM CONVENTION

- **Art. 1**.- The objective of this Convention is to promote shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals to protect human health and the environment from potential harm and to contribute to their environmentally sound use, by facilitating the exchange of information about their characteristics, establishing a national decision-making process on their import and export,

and spreading these decisions to the Parties.

4.2.7 AGENDA 21

The United Nations Conference on Environment and Development, held in Rio de Janeiro in June 1992, adopted "Agenda 21", which consists of a broad set of action plans on sustainable development to be implemented by the countries in the 21st century. The Rio Declaration, the Declaration on Forest Principles, and the United Nations Framework Conventions on Biological Diversity, Climate Change, and Combating Desertification were also adopted at the Conference.

4.2.8 BIOLOGICAL BIODIVERSITY CONVENTION

The Convention is the first comprehensive agreement to address all aspects of biodiversity: genetic resources, species, and ecosystems. It recognizes, for the first time that the conservation of biological diversity is "a common concern of humanity" and an integral part of the development process.

The Convention on Biological Diversity's objectives are "the conservation of biodiversity, the sustainable use of its components and the fair and equitable sharing of the benefits resulting from the use of genetic resources."

4.2.9 KYOTO PROTOCOL

The Kyoto Protocol on Climate Change is an international agreement to reduce emissions of six global warming gases: carbon dioxide (CO2), methane gas (CH4), and nitrous oxide (N2O), as well as three fluorinated industrial gases: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF6), by approximately 5%, within the period from 2008 to 2012, compared to emissions to 1990.

4.2.10 FRAMEWORK CONVENTION ON CLIMATE CHANGE

The United Nations Framework Convention on Climate Change (UNFCCC) was adopted in New York on 9 May 1992 and entered into force on 21 March 1994.

It allows, among other things, to strengthen public awareness, on a global scale, of climate change problems.

In 1997, governments agreed to incorporate an addition to the treaty, known as the Kyoto Protocol, which has stronger (and legally binding) measures.

In 2006, this Protocol was amended in Nairobi to the United Nations Framework Convention on Climate Change, and a new protocol was planned to be adopted in 2009 in Copenhagen, which had to be delayed and moved to Mexico in 2010.

The objective of the Convention is to achieve the stabilization of greenhouse gas concentrations in the atmosphere at a level that prevents dangerous anthropogenic interference in the climate system and within a sufficient timeframe to allow ecosystems to naturally adapt to climate change, ensuring that food production is not threatened and allowing economic development to continue sustainably.

In defining this objective, it is important to highlight two aspects:

1) GHG concentration levels considered hazardous anthropogenic interference in the climate system are not determined, thus recognizing that there was no scientific certainty as to what should be understood by non-hazardous levels.

2) It is suggested that climate change is already inevitable, so not only preventive actions (to curb climate change) must be addressed, but also adaptation to new climate conditions.

4.3 LAWS

4.3.1 ORGANIC CODE OF THE ENVIRONMENT

Published in the RO, supplement No. 983 of April 12, 2017, it came into force 12 months after published in the R.O. It repeals the ENVIRONMENTAL MANAGEMENT LAW and aims to "guarantee the right of people to live in a healthy and ecologically balanced environment, as well as to protect the rights of nature for the realization of good living or *sumak kawsay*".

The provisions of this Code regulate the environmental rights, duties, and guarantees contained in the Constitution, as well as the instruments that strengthen their exercise, which must ensure the sustainability, conservation, protection, and restoration of the environment, without prejudice to those established by other laws on the subject that guarantee the same purposes.

Art.5. – The right of the population to live in a healthy environment. The right to live in a healthy and ecologically balanced environment includes:

6. The prevention, control, and integral repair of environmental damages.
7. The obligation of all works, projects, or activities, in all their phases, to be subject to the environmental impact assessment procedure.
8. The development and use of environmentally clean and healthy practices and technologies and non-polluting, renewable, diversified, and low environmental impact alternative energies.
12. The implementation of adaptation plans, programs, actions, and measures to increase resilience and reduce environmental, social, and economic vulnerability to climate variability and the impacts of climate change and their implementation to mitigate its causes.

Art.10. – Environmental liability. The State, natural and juridical persons, as well as communes, communities, peoples, and nationalities, shall have the legal obligation to respond for the environmental damages or impacts they have caused, in accordance with the environmental norms and principles established in this Code.

Art. 11. – Objective responsibility. In accordance with the environmental principles and guarantees outlined in the Constitution, any natural or legal person who causes environmental damage shall have objective liability, even if there is no willfulness, guilt or negligence.

Operators of works, projects, or activities shall maintain a permanent environmental control system and implement all necessary measures to prevent environmental damage, especially in activities that create the greatest risk of causing them.

TITLE IV
INFRINGEMENTS AND SANCTIONS
CHAPTER I

ENVIRONMENTAL ADMINISTRATIVE INFRINGEMENTS

Art. 316.- Minor infractions. They will be as follows:
1. The start of a project, work, or activity categorized as low impact without administrative authorization.
2. Failure to comply with the administrative authorization or environmental management plan's obligations when they are not criminalized as serious or very serious.
3. Non-presentation of environmental audits and monitoring reports.
4. The generation of special waste or waste without administrative authorization.
5. Non-compliance with the obligation to submit comprehensive management programs for expired stocks and empty packaging of chemicals.
7. Non-compliance with health measures on plant propagation media defined by the National Authority for Agriculture, Livestock, Aquaculture, and Fisheries.

Art. 317.- Serious infractions. The following infringements shall be considered serious, and the following shall apply to them in addition to the economic fine:
6. Failure to report in a timely manner, by professionals with an official endorsement to the National Environmental Authority, any irregular act that affects natural forests' sustainability. For this infraction, the sanction contained in numeral 4 of article 320 may be applied, as appropriate.
7. Failure to comply with the provisions issued by the National Environmental Authority for the means of conservation and ex-situ management that affects wildlife or the population's safety. For this infraction, the sanctions contained in numerals 2 and 4 of article 320 shall be applied, as appropriate.
8. Failure to comply with the norms of management, conservation, and other tools for protected areas, which alters their functions and affects biodiversity. For this infraction, the sanction contained in numeral 2 of article 320 will be applied, as appropriate.
10. Failure to comply with the biosecurity norms defined by the National Environmental Authority that affect wildlife and the conservation and sustainable use of biodiversity. For this infraction, the sanctions contained in numerals 2 and 4 of article 320 shall be applied, as appropriate.
13. The initiation of a project, work, or activity categorized as of medium impact without administrative authorization. For this infraction, an economic fine will be applied.
14. Failure by the operator of the work, project or activity to inform the Competent Environmental Authority within 24 hours about emergency situations, accidents, and incidents caused or could cause environmental damage. For this infraction, the sanction contained in numeral 4 of article 320 shall be applied, as appropriate.
15. Not having the administrative authorization when there is an obligation to obtain it to manage hazardous chemical substances and the generation of hazardous waste. For this infraction, the sanction contained in numeral 4 of article 320 will be applied, as appropriate;

16. Failure to comply with the environmental management plan in which the Competent Environmental Authority's corrective measures have not been applied. For this infraction, the sanction contained in numeral 5 of article 320 will be applied, as appropriate.
17. Failure to comply with technical standards in the integral management of chemical substances, residues, and wastes. For this infraction, the sanction contained in numeral 4 of article 320 shall be applied, as appropriate.
19. Partial non-compliance with integral remediation measures of environmental damages to which the responsible operator was obliged. For this infraction, the sanction contained in numeral 4 of article 320 will be applied, as appropriate.
20. The impediment to the execution of the integral reparation plan. For this infraction, the sanction contained in numeral 2 of article 320 shall be applied, as appropriate.
21. The impediment to the control and follow-up of the Competent Environmental Authority. For this infraction, an economic fine will be applied; and,
22. Failure to comply with the provisional measures issued by the Competent Environmental Authority. For this infraction, a monetary fine will be applied.

Art. 318.- Profoundly serious infringements. The following infringements shall be considered profoundly serious and shall be subject to the following, in addition to the monetary fine:
1. The exploitation, possession, use, transportation, mobilization, storage, processing, and commercialization of timber and non-timber forest products of native species that are in any threatened, conditioned, or restricted category without administrative authorization. For this infraction, the sanction contained in numeral 2 of article 320 shall be applied, as appropriate.
3. Irregular settlement that affects biodiversity within protected areas or areas of the National Forest Heritage. For this infraction, the sanction contained in numeral 7 of article 320 will be applied.
4. Burning, destroying, or affecting the natural forest ecosystem and fragile ecosystems such as moorlands, wetlands, mangroves, moretales, marine, and coastal marine ecosystems. For this infraction, the sanction contained in numeral 2 of article 320 shall be applied, as appropriate.
5. The provision of incorrect information or information that does not correspond to the facts or persons' truth in obtaining an administrative authorization or for compliance with the control and follow-up mechanisms that induce the Competent Environmental Authority to commit errors. For this infraction, the sanction contained in numeral 5 of article 320 shall be applied, as appropriate.
7. The introduction into the national territory of exotic species in any form that affects biodiversity and does not have administrative authorization. For this infraction, the sanction contained in numeral 2 of this article
11. Failure to comply with the permissible limits on dumping, discharges, and emissions. For this infraction, the sanction contained in numeral 4 of article 320 shall apply, as appropriate.
12. The initiation of a project, work, or activity categorized as high impact that does not have administrative authorization. For this infraction, the sanction contained in numeral 4 of article 320 shall apply, as appropriate.
13. Abandonment of infrastructure or closure of activities without the approval of the Competent Environmental Authority. For this infraction, a monetary fine will be applied.
15. The introduction, importation, use, or possession of prohibited chemical substances. For this infraction, in addition to the economic fine, the destruction of the products shall be applied; and,
16. The export of hazardous waste or residues without the authorizations granted by the National Environmental Authority. For this infraction, a monetary fine will be applied.

Art. 319.- Special infractions in the responsible management of urban fauna. The following shall be infractions in the responsible management of urban fauna:

1. Failure to comply with obligations and responsibilities concerning animals.
2. Executing prohibited acts against animals; and,
3. Obstructing or impeding the surveillance and control work of the competent authorities.

DEROGATORY PROVISIONS
FIRST. - The Codification of the Environmental Management Law is hereby repealed.
SECOND. - The Law for the Prevention and Control of Environmental Contamination is hereby repealed.

4.3.2 ORGANIC LAW ON WATER RESOURCES. USES AND DEVELOPMENT OF WATER

- **Art. 1.- Nature**. Water resources are part of the natural heritage of the State and shall be within its exclusive competence, which shall be exercised concurrently between the Central Government and the Decentralized Autonomous Governments, in accordance with the Law. Water is a strategic national heritage for public use, inalienable, imprescriptible, undeniable and essential to life, a vital element of nature, and fundamental to ensuring food sovereignty.
- **Art. 2.**- Scope of application. This Organic Law shall govern throughout the national territory, and persons, national or foreign persons in it, are subject to its rules.
- Art. 3.- Purpose of the Law. The purpose of this Law is to guarantee the human right to water, as well as to regulate and control the authorization, management, preservation, conservation, restoration, of water resources, use and development of water, integral management, and its recovery, in its different phases, forms and physical states, to guarantee the *sumak kawsay* or good living and the rights of nature established in the Constitution.
- **Art. 4.**- Principles of the Law. This Law is based on the following principles:
a) The integration of all waters, whether surface, ground, or atmospheric, in the hydrological cycle with ecosystems.

b) Water, as a natural resource, must be conserved and protected through continuous and sustainable management, which ensures its permanence and quality.

c) Water, as good in the public domain, is inalienable, imprescriptible, and undeniable.

d) Water is a national and strategic heritage at the service of citizens' needs and an essential element for food sovereignty; consequently, any private property on water is prohibited.

e) Access to water is a human right.

f) The State guarantees equitable access to water.

g) The State ensures comprehensive, integrated, and participatory water management; and

h) Water management is public or community.

- **Art. 5.- Strategic sector.** Water is a national patrimony, a strategic sector of decision and exclusive control of the State through the Single Water Authority. Its management shall be oriented to the full exercise of rights and the public interest, given its decisive social, community, cultural, political, environmental, and economic influence.

- Art. 6.- Privatization ban. Any form of privatization of water is prohibited due to its importance for life, the economy, and the environment; therefore, it cannot be the object of any commercial agreement with any government, multilateral entity, or private national or foreign company. Its management shall be exclusively public or communal. No form of appropriation or individual or collective possession of water, whatever its state, shall be recognized. Consequently, it is prohibited:
a) Any delegation to the private sector of water management or of any of the powers constitutionally or legally assigned to the State through the Single Water Authority or the Decentralized Autonomous Governments.
b) Indirect management, delegation, or outsourcing of public services related to the full water cycle by private initiative.
c) Any trade agreement that imposes a profit-based economic regime for water management.
d) Any form of commodification of environmental services over water for profit.
e) Any form of agreement or cooperation agreement that includes clauses that undermine conservation, sustainable water management, biodiversity, human health, the human right to water, food sovereignty, human rights, and the rights of nature; and,
f) The granting of perpetual or indefinite authorizations for the use or development of water.

- **Art. 7.- Activities in the strategic water sector.** The provision of the public water service is exclusively public or community. Exceptionally, the private initiative and the popular and solidarity economy may participate in the following cases:
a) Declaration of emergency adopted by the competent authority, in accordance with the legal system; or,
b) Development of the public service administration sub-processes when the competent authority does not have the technical or financial conditions to do so. The maximum term shall be ten years, subject to prior audit.

- **Art. 8.- Integrated water resource management.** The Single Water Authority is responsible for the integrated and comprehensive management of water resources with an eco-systemic and integrated approach

by basin or watershed systems, which will coordinate with different levels of government according to their areas of competence.

Watershed means the territorial unit bounded by the dividing line of its waters that drain superficially into a common channel, including in this group the populations, infrastructure, conservation areas, protection, and productive areas.

Where groundwater boundaries do not coincide with the surface water dividing line, such delimitation shall include the projection of ground recharge water flowing into the employing its surface delimited basin.

The Single Water Authority shall approve the specific delimitation of watersheds and their possible grouping for planning and management purposes and the allocation of groundwater to the relevant basin.

Integrated and comprehensive water resource management will be a cross-cutting axis of the decentralized national participatory planning system for development.

- **Art. 9.- Guarantee of rights and public policies**. The State shall allocate in an equitable and supportive manner the public budget for implementing policies and the provision of public services in accordance with the Law.

- **Art. 57.-Definition**. The human right to water is the right of all people to have clean, sufficient, healthy, acceptable, accessible, and affordable water for personal and domestic use in quantity, quality, continuity, and coverage. Access to sanitation that ensures human dignity, health, avoids pollution, and ensures the quality of water reserves for human consumption is part of this right.

The human right to water is fundamental and inalienable. No person can be deprived and excluded or deprived of this right.

The exercise of the human right to water shall be sustainable to be exercised by future generations. The Single Water Authority shall define quality water reserves for the human consumption of present and future generations and shall be responsible for executing policies related to the effectiveness of the human right to water.

- **Art. 58.-** Enforceability of the human right to water. Individuals, communities, peoples, nationalities, collectives, and communes may demand compliance and observance of the human right to water from the corresponding authorities, which shall attend to their requests in a priority and progressive manner. The authorities that fail to comply with the exercise of this right shall be subject to sanctions in accordance with the law.

- **Art. 59.**- Vital amount and minimum fee. The Single Water Authority will establish in accordance with national and international standards and guidelines, the vital amount of water per

person, to satisfy their basic needs and for domestic use, access to which constitutes the essential content of the human right to water.

The vital quantity of raw water intended for processing for human consumption is free of charge as a guarantee of the human right to water. When it exceeds the minimum vital quantity established, the corresponding tariff will be applied. The vital quantity of processed water per person will have a tariff that guarantees the sustainability of the service provision.

- **Art.- Free access and use of water.** The human right to water implies free access to and use of surface water or groundwater for human consumption, if it is not diverted from its course or discharged, nor is there any alteration in its quality or significant decrease in its quantity, nor does it affect the rights of third parties, and in accordance with the limits and parameters established by the National Environmental Authority and the Sole Water Authority. The Single Water Authority shall keep a record of the use of groundwater for human consumption.

CHAPTER III

NATURE RIGHTS

- **Art. 64.- Water conservation.** Nature or Pacha Mama has the right to water conservation with its properties as essential support for all life forms. In water conservation, nature has the right to:

a) The protection of their sources, catchment areas, regulation, recharge, upwelling and natural watercourses, snow-capped mountains, glaciers, moorlands, wetlands, and mangroves.
b) The maintenance of the ecological flow as a guarantee for the preservation of ecosystems and biodiversity.
c) Preservation of the natural dynamics of the integral water cycle or hydrological cycle.
d) The protection of hydrographic basins and ecosystems from all contamination; and,
e) The restoration and recovery of ecosystems because of imbalances caused by water pollution and soil erosion.

- **Art. 65.- Integrated water management.** Water resources shall be managed in an integrated and comprehensive manner, with an eco-systemic approach that guarantees biodiversity, sustainability, and preservation according to the provisions of the Regulations of this Law.

CHAPTER V
COLLECTIVE RIGHTS OF COMMUNES, COMMUNITIES, PEOPLES, AND NATIONALITIES

- **Art. 71.- Collective water rights.** The communes, communities, indigenous peoples, and nationalities, Afro-Ecuadorian and Montubio peoples, from their worldview, enjoy the

the following collective water rights:

a) Conserve and protect the water that flows through their lands and territories in which they live and develop their collective life.
b) Participate in the use, usufruct, and community management of the water that flows through their lands and territories and is necessary to develop their collective life.
c) Conserve and protect their water management practices directly related to the right to health and food.
d) Maintain and strengthen their spiritual relationship with water; and
e) Safeguard and disseminate their collective knowledge, sciences, technologies, and ancestral knowledge about water.
f) To be consulted in a mandatory, prior, free, and informed manner and within a reasonable period regarding any relevant regulatory decision or state authorization that may affect the management of water flowing through their lands and territories.
g) Participate in the formulation of environmental impact assessments on activities that affect the ancestral uses and forms of water management in their lands and territories.
h) Have access to accurate and complete water information within a reasonable period; and,
i) Participation in the social control of any public or private activity that may have an impact or affect the ancestral uses and forms of water management in their properties and territories.
The communes, communities, peoples, and nationalities shall exercise these rights through their representatives under the Constitution and the law's terms.

- **Art. 72.- Participation in water conservation.** The communes, communities, peoples, and nationalities have the right that the State, through its institutions, articulate policies and programs for the conservation, protection, and preservation of the water that flows through their lands and territories. The exercise of this right shall not prevail, nor shall it imply any impairment of the State's powers over water.

- **Art. 73.- Use, usufruct, and community water management.** The communes, communities, peoples, and nationalities have the right to participate in the use, usufruct, and community management of the water flowing through their lands and territories as a means to strengthen their identity, culture, traditions, and rights, in accordance with the legal system. For this purpose, through the representatives of their organizations and in accordance with this Law, they shall participate in the comprehensive planning and community management of the water flowing through their lands and territories, as well as form part of the organizations that are established in the basins in which their lands and territories are located.

- **Art. 74.- Conservation of water management practices.**

The application of traditional forms of management and management of the hydrological cycle, practiced by communes, communities, indigenous peoples, and Afro-Ecuadorian and Montubian nationalities, is guaranteed, and their forms, uses, and customs are respected for the internal distribution and distribution of authorized water flows.

CHAPTER VI. PREVENTIVE SAFEGUARDS.

Section One. Ecological Flow and Water Protection Areas.

- **Art. 76.- Ecological Flow.** For the purposes of this Law, ecological flow is the quantity of water, expressed in terms of magnitude, duration, time, and frequency of the specific flow and the quality of water expressed in terms of range, frequency, and duration of the concentration of parameters required to maintain an adequate level of health in the ecosystem.

The Single Water Authority, in coordination with the National Environmental Authority shall establish by regulation the criteria, parameters, and methodologies for the determination of the ecological flow according to the conditions and characteristics of the water bodies, which shall be considered within the national water planning.

- **Art. 73.- Use, usufruct, and community water management.** The communes, communities, peoples, and nationalities have the right to participate in the use, usufruct, and community management of the water flowing through their lands and territories to strengthen their identity, culture, traditions, and rights in accordance with the legal system. For this purpose, through the representatives of their organizations and in accordance with this Law, they shall participate in the comprehensive planning and community management of the water flowing through their lands and territories, as well as form part of the organizations that are established in the basins in which their lands and territories are located.

- **Art. 74.- Conservation of water management practices.** The application of traditional forms of management and management of the hydrological cycle, practiced by communes, communities, indigenous peoples, and Afro-Ecuadorian and Montubian nationalities, is guaranteed and their own forms, uses, and customs are respected for the internal distribution and distribution of authorized water flows.

- **Artículo 78.- Water protection areas.** Water protection areas are territories where water sources are declared to be of public interest for their maintenance, conservation, and protection, which supply human consumption or guarantee food sovereignty, and which are part of the National System of Protected Areas.

The Single Water Authority, following a technical report issued by the National Environmental Authority and in coordination with the Decentralized Autonomous Governments within the scope of their competencies, shall establish and delimit the water protection areas that are necessary for the maintenance and

conservation of the public water domain.

The State shall regulate the use of water protection areas to guarantee their adequate management. The protection regime established for water protection areas shall respect the spiritual uses of peoples and nationalities. This Law's Regulations shall determine the procedure for establishing these water protection areas if they are not wetlands, forests, and protective vegetation.

When land use affects the protection and conservation of water resources, the Single Water Authority, in coordination with the Decentralized Autonomous Governments and territorial districts, will establish and delimit water protection areas to prevent and control water pollution on riverbanks, riverbeds, lakes, lagoons, reservoirs, estuaries, and groundwater.

SECTION TWO. WATER POLLUTION PREVENTION AND CONTROL OBJECTIVES.

- **Art. 79. Water prevention and conservation objectives. -** The Single Water Authority, the National Environmental Authority, and the Decentralized Autonomous Governments will work in coordination to achieve the following objectives:

a) Guarantee the human right to water for good living or *sumak kawsay*, the recognized rights to nature, and the preservation of all forms of life, in a healthy, ecologically balanced, and pollution-free environment.

b) Preserve water quantity and improve water quality.

c) Control and prevent soil accumulation and subsoil of toxic substances, wastes, spills, and other elements capable of contaminating surface or groundwater.

d) Control activities that may cause water degradation and related aquatic and terrestrial ecosystems and, when degraded, provide for their restoration.

e) Prohibit, prevent, control, and sanction water pollution by dumping or depositing solid, liquid, and gaseous wastes; organic, inorganic compounds, or any other toxic substance that alters water quality or affects human health, fauna, flora, and the balance of life.

f) To guarantee the integral conservation and care of the delimited water sources and the balance of the hydrological cycle; and,

g) Avoid degradation of ecosystems related to the hydrological cycle.

- **Art. 80.- Discharges: prohibitions and control.** Discharges of wastewater directly or indirectly into the public water domain are considered discharges. The direct or indirect discharge of wastewater or waste products, sewage, untreated wastewater, and leachates that may pollute the public water domain's waters is prohibited.

The National Environmental Authority will exercise the control of discharges in coordination with the Single Water Authority and the Decentralized Autonomous Governments accredited in the single environmental management system.

It is the responsibility of the autonomous municipal governments to treat sewage and solid waste to prevent water pollution in accordance with the law.

- **Art. 81.- Administrative authorization of discharges.** The authorization for discharges will be included in the environmental permits issued for this purpose.

The water quality parameters to be discharged and the procedure for granting, suspension, and review of the authorization shall be regulated by the National Environmental Authority or accredited, in coordination with the Single Water Authority.

The Decentralized Autonomous Governments within the scope of their competence and within their jurisdiction shall issue the administrative discharge authorization provided for in this Law subject to the National Environmental Authority's public policies.

- **Art. 82.- Citizen participation and oversight.** Individuals, peoples, and nationalities, and social groups may carry out monitoring processes, observatories, and other social control mechanisms on water quality and pollution prevention and control plans and programs according to the Law.

CHAPTER VII: STATE OBLIGATIONS FOR THE HUMAN RIGHT TO WATER.
SECTION ONE: OBLIGATIONS AND PROGRESSIVITY

- **Co-responsibility obligations. -** The State at its different levels of government is jointly responsible with users, consumers, communes, communities, peoples, and nationalities for the fulfillment of the following obligations:

a) Reduce unsustainable extraction, diversion, or damming of flows.

b) Prevent, reduce, and reverse water pollution.

c) Monitor and protect declared optimum water quality reservoirs

d) Contribute to the analysis and study of water quality and availability.

e) Identify and promote technologies to improve water use efficiency.

f) Reduce water wastage during capture, conveyance, and distribution;

g) Adopt measures for the restoration of degraded ecosystems.

h) Support projects for the capture, storage, management, and rational, efficient, and sustainable use of water resources; and,

i) To develop and promote training and scientific and technological research in the water sector.

SECTION TWO. USES OF WATER.

- **Art. 86. Water and its priority.** In accordance with the constitutional provision, the order of priority among the different uses or functions of water is as follows:

a) Human consumption.

b) Irrigation that guarantees food sovereignty.

c) Ecological flow; and,

d) Productive activities.

Water for irrigation that guarantees food sovereignty includes animal watering, aquaculture, and other domestic agricultural and livestock food production activities according to the Regulations of this Law.

- **Art. 87.- Types and terms of authorizations.** The granting, suspension, or cancellation of authorizations is the responsibility of the Single Water Authority. Authorizations, according to the nature of their destination, are classified as follows:

1. Authorizations for water use. This is the administrative act issued by the Single Water Authority by means of which it favorably attends a request submitted by natural or legal persons for the use of a water flow, intended for human consumption or irrigation that guarantees food sovereignty, also including the watering of animals and aquaculture production activities in the manner and under the conditions provided for in this Law.

2. Authorizations for the productive use of water. This is the administrative act issued by the Single Water Authority, by means of which it favorably attends an application submitted by individuals or legal entities for the productive use of a water flow destined for any of the economic uses in the manner and under the conditions provided for in this Law.

- **Art. 88.- Use.** Water use is understood as the use of water for basic activities indispensable for life, such as human consumption, irrigation, aquaculture, and animal watering to guarantee food sovereignty under the terms established in the Law.

- **Art. 89.- Authorization of use.** The use of water as defined in the preceding article shall be subject to the respective authorization granted in accordance with this Law, its Regulations, and water planning. The authorization for the use of water for human consumption and irrigation for food sovereignty

watering of animals and aquaculture confers to the user, exclusively, the capacity for the collection, treatment, conduction, and use of the flow to which the authorization refers.

- **Art. 90.- Conditions for the granting of water use authorizations.** Prior to the granting of authorizations for water use, the Single Water Authority shall verify compliance with the following conditions:

a) That the order of priority established in the Constitution and this Law is respected.
b) That the availability of water in sufficient quality and quantity has been certified. With respect to water quality, the Single Water Authority shall progressively implement the certification processes.
c) That the Single Water Authority has previously approved the studies and hydraulic infrastructure projects necessary for its use.
d) That the beneficiary is responsible for the prevention and mitigation of the environmental damages it causes, and undertakes to contribute to the proper management of the authorized water; and,
e) That the use of the water is immediate or within a determined period for the purpose for which it was authorized according to the respective technical report.

- **Art. 91.- Recreational and sport use.** Recreational events and aquatic competitions involving non-consumptive use of water do not require prior authorization from the Single Water Authority.

- **Art. 92.- Cultural and sacred practices.** The Single Water Authority shall guarantee the integrity and permanence of the places where communes, communities, peoples, and nationalities traditionally practice water rights, cultural and sacred values.

Together with the communes, communities, peoples, and nationalities, the Single Water Authority shall carry out and keep duly updated a participatory and comprehensive National Inventory of sacred sites and water rituals.

The administration and conservation of sacred sites in relation to water shall be carried out by the entities or organizations of peoples and nationalities in whose lands or territories they are located, with the support of national programs and projects of public agencies and the Decentralized Autonomous Governments, in accordance with the Constitution and their own rights.

4.3.3 ORGANIC LAW OF HEALTH

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CHAPTER III: RIGHTS AND DUTIES OF INDIVIDUALS AND THE STATE CONCERNING HEALTH

- **Art. 7** paragraph c) refers to people's right to live in a healthy, ecologically balanced, and pollution-free environment.

BOOK II: ENVIRONMENTAL HEALTH AND SAFETY. COMMON PROVISION

- **Art. 95.-** that the national health authority coordinates with the MAE the basic rules for preserving the environment in matters of human health.

SOLE TITLE: CHAPTER I. WATER FOR HUMAN CONSUMPTION

- **Art. 96.-** establishes the obligation of any natural or legal person to protect any aquifer, source or basin used to supply water for human consumption and prohibits any activity that may contaminate said water catchment source.

CHAPTER II: COMMON, INFECTIOUS AND SPECIAL WASTES AND IONIZING AND NON-IONIZING RADIATION

- **Art. 103**.- It is forbidden for any person, natural or juridical, to discharge or deposit sewage and wastewater without the appropriate treatment, as provided for in the corresponding regulation, in rivers, seas, canals, streams, lagoons, lakes, and other similar sites. Its use in animal husbandry or agricultural activities is also prohibited.

Infectious, special, toxic, and hazardous waste must be technically treated prior to disposal, and the final deposit will be made in special sites established for this purpose by the country's municipalities.

For the disposal of domestic waste, the provisions established for this purpose shall be complied with.

The health authorities, in coordination with the municipalities, will be responsible for enforcing these provisions.

- **Art. 104.-** All industrial, commercial, or service establishments are required to install systems for the treatment of contaminated water and toxic waste produced by their activities. The health authorities, in coordination with the municipalities, will be responsible for enforcing this provision.

CHAPTER III: AIR QUALITY AND NOISE POLLUTION

- **Art. 111**.- It refers to air quality and noise pollution and requires the national health authority to coordinate with the MAE on all types of emissions affecting the respiratory, auditory, and visual systems, to prevent air and noise pollution affecting human health.

- **Art. 113.**All labor, productive, industrial, commercial, recreational and amusement activities, and housing and other facilities and means of transportation must comply with the provisions of the respective rules and regulations on prevention and control to avoid noise pollution affects human health.

CHAPTER V: HEALTH AND SAFETY AT WORK

- **Art. 117**.- It establishes that the national health authority, in coordination with the Ministry of Labor and Employment and the Ecuadorian Institute of Social Security, will establish occupational health and safety standards to protect workers' health.

- **Art. 118.** Employers shall protect their workers' health, providing them with sufficient information, protective equipment, appropriate clothing, safe working environments, to prevent, reduce or eliminate risks, accidents, and the occurrence of occupational diseases.

- **Art. 119.-** Employers are required to notify the competent authorities of work accidents and occupational diseases, without prejudice to the actions taken by the Ministry of Labor and Employment and the Ecuadorian Institute of Social Security.

- **Art. 120.** In coordination with the Ministry of Labor and Employment and the Ecuadorian Institute of Social Security, the national health authority will monitor and control working conditions so that they are not harmful or unhealthy during the periods of pregnancy and lactation of working women.

Employers have an obligation to comply with the regulations and adapt pregnantly and breastfeeding women's work activities.

BOOK III: SURVEILLANCE AND SANITARY CONTROL

- **Art. 129.-** Compliance with sanitary surveillance and control regulations is mandatory for all public and private institutions, organizations, and establishments involved in the production, import, export, storage, transportation, distribution, marketing, and sale of products for human use and consumption.

- **Art. 130.-** Establishments subject to sanitary control must have a permit granted by the national sanitary authority to operate. The operating permit will be valid for one calendar year.

- **Art. 132.-** Sanitary surveillance and control activities include quality control, safety, and security of processed products for human use and consumption, as well as the verification of compliance with technical and sanitary requirements in establishments engaged in the production, storage, distribution, marketing, import, and export of the aforementioned products.

SOLE TITLE: CHAPTER I: SANITARY REGISTRATION

- **Art. 137.-** Processed foods, food additives, medicines in general, nutraceutical products, biological products, naturally processed products for medicinal use, homeopathic medicines, and dental products; medical devices, biochemical and diagnostic reagents, hygienic products, pesticides for domestic and industrial use,

manufactured in the national territory or abroad, for importation, exportation, commercialization, dispensation, and sale, including those received as donations, are subject to sanitary registration.

- **Art. 138.-** The national health authority through its competent agency, National Institute of Hygiene and Tropical Medicine Dr. Leopoldo Izquieta Perez, who will exercise its functions in a deconcentrated form, will grant, suspend, cancel or re-register the sanitary registration certificate, prior compliance with the procedures, requirements and terms indicated in this Law and its regulations, according to the guidelines and norms issued by the national sanitary authority, which will establish the payment of an amount for the inscription and re-registration of said sanitary registration certificate, whose values will be destined to institutional development, which will include as a priority a national program of quality control and post-registration innocuousness.

- **Art. 139**.- The sanitary registration will be valid for five years, counted from the date of its concession. Any change in the condition in which the product was approved in the sanitary registration must be compulsorily notified to the national sanitary authority through the National Institute of Hygiene and Tropical Medicine Dr. Leopoldo Izquieta Pérez and will give rise to the procedure indicated by the law and its regulations.

- **Art. 140**.- The importation, exportation, commercialization, and sale of processed products for human use and consumption that do not comply with the prior obtaining of the sanitary registration is prohibited, except for the exceptions foreseen in this Law.

- **Art. 141.-** The sanitary registration will be suspended or canceled by the national sanitary authority through the National Institute of Hygiene and Tropical Medicine Dr. Leopoldo Izquieta Pérez, at any time if it is proven that the product or its manufacturer does not comply with the requirements and conditions established in this Law and its regulations or when the product could cause damage to health, and the other sanctions indicated in this Law will be applied.

In all cases, the owner of the registration or the natural or legal person responsible shall fully compensate any damage caused to third parties, without prejudice to any other legal actions that may arise.

- **Art. 142.** Through its competent agencies, the national health authority will periodically carry out post-registration controls of all products subject to sanitary registration by taking samples for quality and safety control analysis, whether in the places of manufacture, storage, transport, distribution, or sale.

CHAPTER II: FOOD

- **Art. 145.-** It is the responsibility of producers, retailers, and other agents involved during the production-consumption cycle to comply with the standards established in this Law and other provisions in force to ensure the quality and safety of food for human consumption.

- **Art. 146.-** In matters of food, it is prohibited:

a) The use of additives to dissimulate, attenuate or correct technological deficiencies in production, handling, or preservation and to fraudulently highlight their characteristics.

b) The use, importation, and commercialization of raw materials unfit for human consumption;

c) The inclusion of harmful substances that make them dangerous or potentially harmful to consumers' health.

d) The use of raw materials and products treated with ionizing radiation or that have been genetically modified in the elaboration of infant formulas and baby food.

e) Processing and handling under unhygienic conditions.

f) The use of packaging that does not comply with the technical specifications approved for this purpose.

g) Offering a processed food with names, marks, graphics, or labels that make false claims or omit data in a way that confuses or misleads the consumer.

h) The storage of raw materials or processed foods in premises where harmful or dangerous substances are found.

i) Any form of falsification, contamination, alteration or adulteration, or any procedure that produces the effect of rendering them harmful or dangerous to human health; and,

j) The exhibition and sale of products whose period of useful life has expired.

- **Art. 147.** In coordination with the municipalities, the national health authority will establish health education programs for food producers, handlers and consumers, promoting hygiene, individual and collective health, and environmental protection.

- **Art. 152.** In coordination with the competent agencies, the national health authority shall establish and implement an integrated national system to guarantee food safety.

In conclusion, the Organic Health Law provides for inter-institutional coordination between health and environmental authorities at the national level to prevent contamination of resources and, in turn, to avoid any threat to the human health of the inhabitants.

4.3.4 HEALTH CODE: OFFICIAL REGISTRY 158 OF FEBRUARY 8, 1971.

This document "prohibits the discharge of solid, liquid or gaseous waste without treatment; noxious and undesirable substances that pollute or affect water quality; excreta, sewage, industrial waste in any watercourse for domestic or agricultural use, industrial discharges in public sewers without the corresponding permit. Art. 12, 17, 25, and 28. Articles 03, 04, 06, 06, 07, 08, 10 and 11 also apply.

- **Art. 6.-** of the Health Code determines that environmental sanitation is the best set of

activities dedicated to condition and control the environment in which man lives, to protect his health.

- **Art. 12.-** No person may dispose of solid, liquid, or gaseous wastes into the air, soil, or water without prior treatment to render them harmless to health.

- **Art. 17.-** No person may discharge, directly or indirectly, noxious or undesirable substances in such a way as to contaminate or affect the sanitary quality of the water and obstruct, totally or partially, the supply routes.

- **Art. 25.-** Excreta, sewage, industrial wastes may not be discharged, directly or indirectly, into streams, rivers, lakes, irrigation ditches, or any watercourse for domestic, agricultural, industrial, or recreational use unless previously treated by methods that make them harmless to health.

- **Art. 29.-** The possession, production, importation, sale, transportation, distribution, use and disposal of toxic substances and products of a corrosive or irritating, flammable or oxidizing, explosive or radioactive nature, which constitute a health hazard, must be carried out under sanitary conditions that eliminate such risk and be subject to the control and requirements of the pertinent regulations.

- **Art. 35.-** It is the responsibility of the owner of a property or the person responsible for the occupation of a public road or site to remove or destroy junk, debris, useless objects, or any pile of undesirable materials.

- **Art. 56.-** Workplaces must meet hygiene and safety conditions for their personnel. The health authority shall also provide for the adoption of appropriate sanitary measures for the benefit of workers employed during a worksite construction.

- **Art. 59.-** The owners or possessors of open or closed places, to which people have regular access, shall maintain them in conditions that prevent the existence or reproduction of arthropods, rodents, ophidians, and other species of animals that act as transmitting agents of diseases or that are harmful to man. The health authority will dictate the instructions of the case for the use of means and the opportunity to fulfill this obligation. Exceptions are scientific experimentation centers and other establishments that have the corresponding permit.

4.3.5 GENERAL PORTS' LAW

- **Art. 1.**- All port, maritime, and river port facilities in Ecuador, as well as the activities related to their operations carried out by agencies, entities, and natural or legal persons, shall be governed by the provisions contained in this Law.

- **Art. 2.**- The functions of planning, direction, coordination, orientation and control of the national shipping and port policy will be exercised through the following agencies:

a) National Merchant Marine and Ports Council.

b) Directorate of the Merchant Marine and Littoral.

c) Port Entities.

Note: Art. 11 of Executive Order 1111 (R.O. 358, 12-VI-2008) prescribes the substitution of any reference to the General Directorate of the Merchant Marine and Coastal - DIGMER, for the "Undersecretariat of Ports and Maritime and River Transportation." However, since a decree cannot introduce reforms to hierarchically superior regulations, we have maintained this provision's original text.

- Art. 3.- (Reformed by Art. 28 of Law 12, R.O. 82-S, 9-VI-1997) The National Merchant Marine and Ports Council shall be composed of the following members: the Minister of National Defense, who shall chair it; the Commandant General of the Navy; the Ministers or Undersecretaries of Foreign Affairs, Public Works, Finance, Foreign Trade, Industrialization and Fisheries; the President or Technical Director of the National Planning and Economic Coordination Board; the Chief of the First Naval Zone and the Director of Maritime Development of the Navy. The Director of the Merchant Marine and Littoral will be part of the Council as an Advisor with informative voice but without a vote.

- **Art. 4.**- The National Merchant Marine and Ports Council is the highest advisory body of the Government in maritime and port matters and has the following attributions:

a. Approve the Tariff Regulations of the port entities and the changes or modifications that are submitted to its consideration.

b. Decide on the convenience of establishing new ports, in accordance with national interests, considering the areas of influence, the National Transportation Policy and the Development Plan.

c. Authorize the use for commercial purposes, of ports or maritime or fluvial facilities, by natural or juridical private or public persons.

d. Be informed on and approve the annual programming of activities of the National Port System, which must be submitted by the Directorate of the Merchant Marine and Littoral until December 31 of each year.

e. Arrange for the performance of studies and projections on port facilities' influence on the National Transportation System.

f. Approve the General Investment Plan of the National Port System and annual budgets of the port entities, which shall be submitted for consideration by the Merchant Marine and Littoral Directorate, no later than December 31 of each year.

g. Be informed and give its opinion on the report of Activities of the National Port System, which shall

presented by the Directorate of Merchant Marine and Littoral in the first quarter of each year.

h. Determine the jurisdiction of the Port Entities.

i. Submit to the President of the Republic the proposal in a slate, from among whose components the President of the Republic shall elect the Chairman of the Board of Directors of each Port Entity.

j. Any other duties conferred by the Law or the Regulations.

- **Art. 6**.- The Directorate of the Merchant Marine and Littoral will have in its organization the National Ports Department, which will oversee the study and analysis of port activities in administrative, operational, exploitation, construction, and improvement of Ecuadorian commercial ports, and the technical administrative bodies that may be necessary for the fulfillment of its mission.

Note: Art. 11 of Executive Order 1111 (R.O. 358, 12-VI-2008) prescribes the substitution of any reference to the General Directorate of the Merchant Marine and Coastal - DIGMER, for the "Undersecretariat of Ports and Maritime and River Transportation." However, since a decree cannot introduce reforms to hierarchically superior regulations, we have maintained this provision's original text.

4.3.6 INTEGRAL ORGANIC PENAL CODE

CHAPTER FOUR: CRIMES AGAINST THE ENVIRONMENT AND NATURE OR PACHA MAMA.

SECTION ONE. CRIMES AGAINST BIODIVERSITY.

- **Art. 245.-** Invasion of areas of ecological importance - The person who invades the areas of the National System of Protected Areas or fragile ecosystems shall be punished with imprisonment of one to three years.

The maximum penalty shall be applied:

1. Because of the invasion, serious damage is caused to biodiversity and natural resources.

2. When the invasion is promoted, financed, or directed by taking advantage of the people through deceit or false promises.

- Art. 247

Crimes against wild flora and fauna - The person who hunts, fishes, captures, collects, extracts, has, transports, traffics, benefits from, exchanges, or commercializes specimens or their parts, their constituent elements, products, and derivatives, of flora or wild terrestrial, marine or aquatic fauna, of threatened, endangered and migratory species, listed at national level by the National Environmental Authority as well as international instruments or treaties ratified by the State, shall be punished with imprisonment from one to three years.

The maximum penalty shall be applied if any of the following circumstances apply:

1. The act is committed in the period or zone of seed production or reproduction or incubation, nesting, birth, breeding, or growth of the species.

2. The act is committed within the National System of Protected Areas.

Only hunting, subsistence fishing or capture, traditional medicine practices, and the domestic use and consumption of wood by the communities in their territories, whose purposes are not commercial or for-profit, are exempted from this provision, which must be coordinated with the National Environmental Authority.

SECTION TWO

CRIMES AGAINST NATURAL RESOURCES

- **Art. 251. Crimes against water. -** Any person who, in contravention of the regulations in force, pollutes, depletes or alters water bodies, springs, sources, ecological flows, natural upwelling or subway waters of the hydrographic basins and in general the hydrobiological resources or discharges into the sea causing serious damage, shall be punished with a prison sentence of three to five years.

The maximum penalty shall be imposed if the infraction is perpetrated in an area of the National System of Protected Areas or if the infraction is perpetrated for profit or with methods, instruments, or means that result in extensive and permanent damage.

- **Art. 252.- Crimes against the land. -** The person who, in contravention of the regulations in force, concerning land and environmental management plans, changes the use of forest land or land intended for the maintenance and conservation of native ecosystems and their ecological functions, affects or damages its fertile layer, causes erosion or Desertification, causing serious damage, shall be punished with imprisonment for a term of three to five years.

The maximum penalty shall be imposed if the infraction is perpetrated in an area of the National System of Protected Areas or if the infraction is perpetrated for profit or with methods, instruments, or means that result in extensive and permanent damage.

- **Art. 253.- Air pollution. -** Any person who, in contravention of the regulations in force or by not adopting the measures required by the regulations, pollutes the air, the atmosphere or other components of the airspace at levels that result in serious damage to natural resources, biodiversity, and human health, shall be sentenced to imprisonment for a term of one to three years.

- **Art. 254.- Prohibited or unauthorized management of hazardous products, wastes, residues, or substances. -** The person who, contrary to the provisions of the regulations in force, develops, produces, possesses, disposes of, burns, markets, introduces, imports, transports, stores,

deposits or uses products, residues, wastes and chemical or hazardous substances, and thereby causes serious damage to biodiversity and natural resources, shall be punished with imprisonment of one to three years. It shall be punished with deprivation of liberty for a term of three to five years in the case of:

1. Chemical, biological or nuclear weapons.

2. Banned chemicals and agrochemicals, highly toxic persistent organic pollutants, and radioactive substances.

3. Dissemination of diseases or pests.

4. Technologies, experimental biological agents, or genetically modified organisms that are harmful and detrimental to human health or threaten biodiversity and natural resources.

If death is the consequence of these crimes, it shall be punished with imprisonment for a term of sixteen to nineteen years.

- **Art. 255.- Misrepresentation or concealment of environmental information. -** The person who issues or provides false information or conceals information that is of support for the issuance and granting of environmental permits, environmental impact assessments, environmental audits and diagnoses, forest harvesting permits or licenses, which cause the environmental authority to make a mistake, shall be punished with imprisonment for a term of one to three years.

The maximum penalty shall be imposed if the public servant, by reason of his or her functions or taking advantage of his or her capacity as a public servant or his or her responsibilities to carry out control, processes, issues, or approves with false information environmental permits and the others established in this article.

4.3.7 ORGANIC CODE OF TERRITORIAL ORGANIZATION, AUTONOMY AND DECENTRALIZATION (COOTAD).

- **Art. 136.- Subsection Two. -** It corresponds to the autonomous decentralized provincial governments to govern, direct, order, dispose, or organize environmental management, environmental and nature. These actions shall be carried out within the framework of the decentralized national system of environmental management and in accordance with the policies issued by the national environmental authority. To grant environmental licenses, they must be accredited as the environmental enforcement authority responsible for their circumscription.

4.3.8 UNIFIED TEXT OF SECONDARY LEGISLATION OF THE MINISTRY OF ENVIRONMENT (TULSMA).

PRELIMINARY TITLE OF THE BASIC ENVIRONMENTAL POLICIES OF ECUADOR

- **Art. 1.-** The following basic environmental policies of Ecuador are established:

Basic environmental policies of Ecuador

1. Recognizing the fundamental principle transcending over the set of policies, is the society commitment to promote development towards sustainability. Ecuadorian society must permanently observe the concept of minimizing risks and negative environmental impacts while maintaining social and economic opportunities for sustainable development.

2. Recognizing that sustainable development can only be achieved when its three elements, social, economic and environmental, are treated harmoniously and in balance at every moment and for every action. Every inhabitant of Ecuador and its institutions, public and private organizations must take every action, at every moment, in a way that simultaneously tends to be socially fair, economically profitable and environmentally sustainable.

3. Recognizing that environmental management corresponds to everyone at every moment of life and that no one can replace the responsibility of each person in this management in their field of action: Through coordination by Ministry of the Environment, in order to safeguard proper national coherence, entities of public and private sectors in Ecuador, without prejudice to the fact that each one must attend the specific area that corresponds to it, will contribute, within the framework of these policies, to identify, for each case, specific policies and strategies, necessary orientations and guides in order to guarantee by all an adequate environmental management permanently aimed at achieving sustainable development, as well as how they will collaborate in the necessary aspects to ensure that each inhabitant of Ecuador adapts her behavior to this purpose.

4. Recognizing that the environment entails everything and is present in every human action: Environmental considerations must be present, explicitly, in all human activities and in every field of action of public and private entities, particularly as a mandatory part and inseparable from decision-making; therefore, the environment should not be considered in any case as an independent and separate sector from social, economic, political, cultural considerations and, in general, of any order. This without prejudice to the fact that, for purely methodological reasons, analysis and training must be carried out on so-called "environmental issues".

5. Recognizing that each issue related to environmental management has several important actors, directly linked or with particular interests in them: Environmental management in Ecuador will be based on solidarity, co-responsibility, cooperation and coordination among all inhabitants of Ecuador, aimed at guaranteeing sustainable development, based on balance and harmony between the social, economic and environmental aspects.

Similar criteria will guide Ecuador in its relations with other countries and people of the world so that the activities executed within its jurisdiction and competence or outside, do not harm other States and areas without jurisdiction, nor do they that is harmed by the actions of others.

Particular mention is made of its decision to promote the rational and sustainable co-management of resources shared with other countries.

6. Recognizing that, without prejudice to necessary and advisable legal and institutional complements and systematization, there are enough laws and institutions in Ecuador to do and maintain adequate environmental management, but laws and regulations are only partially complied with and, that many institutions are going through emergency in various orders: Its decision to tend to the rational and sustainable co-management of resources shared with other countries.

BOOK IV

OF BIODIVERSITY

CHAPTER VII: OF THE PROHIBITIONS

Art. 103. - It is forbidden, on any day or time of the year, to hunt the species, birds or mammals that make up the wild fauna and that appear in Annex 1 of this Title, classified as threatened or endangered extinction. Hunting is also not allowed in certain areas or zones and while the closed seasons last.

Art. 109. - It is prohibited to disturb and attack the life of wild animals throughout the country, with the exceptions provided in this regulation.

Art. 110. - The collection of eggs, capture or apprehension of neonates and offspring of wild animals, without the corresponding authorization, is prohibited.

Art. 114. - All kinds of hunting are prohibited in National Heritage Areas, such as: National Parks, ecological reserves, wildlife refuges, existing biological reserves and those that will be created in the future..

4.4 MINISTERIAL AGREEMENTS

4.4.1 MINISTERIAL AGREEMENT 061

BOOK VI REFORM OF THE UNIFIED TEXT OF SECONDARY LEGISLATION OF THE MINISTRY OF THE ENVIRONMENT (TULSMA)

BOOK VI ON ENVIRONMENTAL QUALITY

TITLE I PRELIMINARY PROVISIONS

- **Art. 1 SCOPE. -** This book establishes the procedures and regulates activities and public and private responsibilities regarding environmental quality. Environmental quality is understood as the set of characteristics of environment and nature that includes air, water, soil and biodiversity, in relation to the absence or presence of harmful agents that may affect to the maintenance and regeneration of the vital cycles, structure, functions and evolutionary processes of nature.

- **Art. 2 PRINCIPLES.-** Without prejudice to those contained in the Constitution of the Republic of Ecuador and the secondary laws and regulations of any hierarchy that govern the matter, the principles contained in this Book are a mandatory application and constitute conceptual elements that originate, sustain, govern and inspire all public and private decisions and activities, of natural and legal persons, peoples, nationalities and communities regarding environmental quality management, as well as liability for environmental damage.

  For this Book application, administrative authorities and judges will observe the principles of environmental legislation and in particular the following:

- **Preventive or Prevention.-** It is the State obligation, through its institutions and bodies in accordance with public powers assigned by law, to adopt appropriate policies and measures that avoid negative environmental impacts, when there is certainty of damage.

- **Precautionary or with Precaution.-** It is the State obligation, through its institutions and bodies and in accordance with the public powers assigned by law, to adopt effective and timely protective measures when there is danger of serious or irreversible damage to the environment, even if there is doubt about the environmental impact of any action, or omission or there is no scientific evidence of the damage. The precautionary principle is applied when it is necessary to make a decision or choose between alternatives in a situation in which the technical and scientific information is insufficient or there is a significant level of doubt in the conclusions of the technical-scientific analysis. In such cases precautionary principle requires that the decision be made has the least risk of causing, damage to the ecosystem, directly or indirectly.

- **Polluter-Payer or Polluter Pays.-** It is the obligation that all operators of activities that involve environmental risk have to internalize environmental costs, assuming the costs of prevention and control of pollution, as well as those necessary to restore ecosystems in case of environmental damage, taking public interest on account, the rights of nature and the right to live in a healthy and ecologically balanced environment. The principle in question is also applied in sanctioning procedures or in those for determining administrative or tax payment obligations.

- **Correction at the Source.-** It is the obligation of Control Subjects to adopt all pertinent measures to avoid, minimize, mitigate and correct environmental impacts from the origin of the production process. This principle will be applied to projects and in addition to management plans or plans of any nature provided for in this Book.

- **Co-responsibility in environmental matters**.- When the fulfillment of environmental obligations corresponds to several people jointly, there will be shared responsibility for the infractions that are committed and the sanctions that are imposed.

- **From the cradle to the grave**.- The responsibility of the Controllers covers in an integral, shared, and differentiated way, all the phases of the integral management of dangerous chemical substances and the adequate management of waste, hazardous waste and / or special from its generation to its final disposal.

- **Strict liability**.- Liability for environmental damage is objective. Any damage to the environment, in addition to the corresponding sanctions, will also imply the obligation to fully restore ecosystems and compensate the affected people and communities.

- Extended responsibility of the producer and / or importer.- Producers and / or importers have responsibility for the product throughout its entire life cycle, including the impacts inherent in the selection of materials, production process of the products themselves, as well as those related to the use and final disposal of these after their useful life.

- **From the best available technology**.- Any activity that may produce an environmental impact or risk must be executed efficiently and effectively, using the most appropriate technical procedures available, to prevent and minimize environmental impact or risk.

- **Primary Repair or In Natura**.- It is the obligation to restore ecosystems when there is any damage to the environment, without prejudice to the corresponding sanctions, seeking to return to the initial condition or prior to the damage.

TITLE III: ABOUT THE SINGLE ENVIRONMENTAL MANAGEMENT SYSTEM

CHAPTER I

INSTITUTIONAL REGIME

- **Art. 6 General Obligations.-** Any new work, activity or project and any extension or modification, that may cause environmental impact, must be submitted to the Unique Environmental Management System, in accordance with the provisions of the applicable legislation, this Book and the administrative and technical regulations issued for this purpose.

  All actions related to environmental management must be planned and executed based on the principles of sustainability, equity, social participation, validated representativeness, coordination, precaution, prevention, mitigation and remediation of negative impacts, co-responsibility, solidarity, cooperation, minimization of waste, reuse, recycling and use of waste, conservation of resources in general, use of clean technologies, environmentally responsible alternative technologies, good environmental practices and respect for traditional cultures and practices and ancestral possessions. Likewise, the environmental impacts of any product, industrialized or not, during its life cycle.

- **Art. 7 Environmental impact assessment competence.-** The Environmental impact assessment process corresponds to the National Environmental Authority, which may be delegated to the Autonomous Decentralized Provincial, metropolitan and/or municipal governments through a process of accreditation in accordance with the provisions of this Book.

  The Result of the environmental impact assessment process is an environmental administrative authorization, the scope and nature of which depends on the management tool used according to the case.

  Both the environmental authorization and the environmental impact assessment tools are described in this Book.

CHAPTER II: SINGLE ENVIRONMENTAL INFORMATION SYSTEM

- **Art. 12.-** The Unique System of Environmental Information (SUIA).- It is the computer obligatory instrument to setting up all entities gathered on the Decentralized National System of Environmental Management; It will be administered by the National Environmental Authority and will be the only online instrument used to execute the complete environmental regularization process, in accordance with the principles of speed, simplification of procedures and transparency.
- **Art. 14.**- Regarding regularization of project, work or activity.- Projects, works or activities, contained in the catalog issued by the National Environmental Authority must be regularized through the SUIA, which will automatically determine the issuing type of environmental permit, could be either, Environmental Registry or Environmental License.

CHAPTER III. ENVIRONMENTAL REGULARIZATION

- **Art. 21 General objective.-** Authorize the execution of public, private and mixed projects, works or activities, based on their particular characteristics and the magnitude of environmental impacts and risks.
- **Art. 22 Projects, works or activities catalog.-** It is the list of projects, works or activities that need to be regularized through the environmental permit based on the magnitude of the impact and risk generated to the environment.
- **Art. 25 Environmental License**.- It is the environmental permit granted by the Competent Environmental Authority through SUIA, mandatory for those projects, works or activities considered of medium or high impact and environmental risk. The Controlling Subject must comply with the obligations arising from the environmental permit granted.

CHAPTER IV. ENVIRONMENTAL STUDIES

- **Art. 27 Objetive.-** Environmental studies work to guarantee an adequate and well-founded prediction, identification, and interpretation of environmental impacts of existing projects, works or activities and

those to be developed in the country, as well as technical suitability of control measures for the management of their environmental impacts and risks; The environmental study must be technically performed, and depending on the scope and complexity of project, work or activity, according to the requirements set, forth in the applicable environmental regulations.

- **Art. 28 Evaluation of environmental impacts.-** Evaluation of environmental impacts is a procedure allowing to predict, identify, describe, and evaluate potential environmental impacts that a project, work or activity may cause to the environment; and with this analysis determine the most effective measures to prevent, control, mitigate and compensate negative environmental impacts, framed in the provisions of applicable environmental regulations.

  For the evaluation of environmental impacts, relevant environmental variables of media or matrices are observed. Among these:
  a) Physical (water, air, soil and climate);
  b) Biotic (flora, fauna and their habitats);
  c) Sociocultural (archeology, socio-economic organization, among others);
  Access to environmental information is guaranteed to civil society and public officials of projects, works or activities that are in process or have environmental licensing.

  - Art. 29 Responsible for environmental studies.- Environmental studies of projects, works or activities will be performed under the responsibility of regulated, in accordance to applicable environmental guidelines and regulations, who will be responsible for the veracity and accuracy of their contents.

  The environmental studies of environmental licenses must be executed by Competent Authority qualified consultants, which will periodically evaluate, together with other competent entities, technical and ethical capacities of consultants to executed said studies.

- **Art. 30 Terms of reference.-** Are standardized or specialized preliminary documents that determine the content, scope, focus, methods, and techniques to be applied in the preparation of environmental studies. The terms of reference for conducting an environmental study will be available online through SUIA for project promoter, work or activity; The Competent Environmental Authority will focus the studies based on regularization activity.

- **Art. 31 Description of the project and analysis of alternatives.-** Projects or activities that require environmental licenses must be described in detail in order to predict and evaluate their potential or real impacts.

  In the project evaluation or work, environmental, social and economic components must be assessed equitably; this information will complement the viable alternatives, for the most appropriate analysis and selection.

The non-execution of the project will not be considered as an alternative within the analysis.

- **Art. 32 Environmental Management Plan.-** Environmental Management Plan consists of several sub-plans, depending on the characteristics of the activity or project.

Environmental Management Plan will contain the following sub plans, and respective programs, budgets, managers, means of verification and schedule.

a) Impact Prevention and Mitigation Plan;
b) Contingency Plan;
c) Training Plan;
d) Occupational Health and Safety Plan;
e) Waste Management Plan;
f) Community Relations Plan;
g) Rehabilitation of Affected Areas Plan;
h) Abandonment and Delivery of the Area Plan;
i) Monitoring and Follow-up Plan.

In the event that Environmental Impact Studies, for activities in operation (*EsIA Ex post*), an action plan allowing correcting the Non-Conformities (NC), found during process, will be included in addition to the aforementioned plans.

- **Art. 33 - Scope of environmental studies.-** Environmental studies must cover all life cycle phases of a project, work or activity, but due to the nature and characteristics of activity and based on environmental regulations, establish different phases and different stages of their execution within.

- Art. 35 Ex Post Environmental Studies (EsIA Ex Post) .- These are environmental studies that have the same purpose as Ex ante studies allowing to regularize in environmental terms of work or activity in operation execution, in accordance with the provisions in this legal instrument.

- Art. 36 Observations to the environmental studies.- During review and analysis of environmental studies, prior to favorable pronouncement, Competent Environmental Authority may request, among others:

a) Modification of the proposed project, work or activity, including the corresponding alternatives;
b) Incorporation of alternatives not initially foreseen in the environmental study, as long as these do not substantially change the nature and/or dimensioning of project, work or activity;

c) Making corrections to the information presented in the environmental study;
d) Carrying out complementary or new analyzes.

The Environmental Competent Authority will review the environmental study, issue observations once, notify the proponent to accept their observations, and regarding these responses, the Competent Environmental Authority may require additional information from the proponent for final approval. If these observations are not cleared in the second review cycle, the process will be archived.

- Art. 37 Favorable pronouncement of environmental studies.- If the Environmental Competent Authority considers that the environmental study presented satisfies the requirements and complies with requirements set forth in the applicable environmental regulations and relevant technical standards, it will issue a favorable pronouncement by means of an official letter.

- Art. 38 Establishment of the policy or guarantee of faithful compliance with the Environmental Management Plan.- The environmental regularization for projects, works or activities that require environmental licenses will include, among other conditions, the establishment of a policy or guarantee of faithful compliance with the Environmental Management Plan, equivalent to one hundred percent (100%) of the cost thereof, to face possible breaches thereof, related to the execution of the licensed activity or project, whose endorsement must be in favor of the Environmental Competent Authority.

This guarantee or policy will not be required when the executors of the project, work or activity are entities of public sector or companies whose subscribed capital belongs, at least to two thirds, to entities of public law or private law with social or public. However, the executing entity will respond administratively and civilly for the full and timely compliance with the Environmental Management Plan of project, work or licensed activity and for the contingencies that may cause environmental damage or third-party effects, in accordance with the provisions of the applicable regulations.

- **Art. 39 Issuance of environmental permits.-** Projects, works or activities that require environmental permits, in addition to a favorable pronouncement, must make the corresponding payments for administrative services, in accordance with requirements provided for each case.

Projects, works or activities that require an environmental license must deliver guarantees and policies established in the applicable environmental regulations; once the Competent Environmental Authority verifies this information; it will proceed to issue the corresponding environmental license.

- Art. 40 Resolution.- Competent Environmental Authority will notify the subjects of control of projects, works or activities with the issuance of environmental resolution license, which will clearly detail conditions to which the project, work or activity will submit, during all its phases, as well as the legal and regulatory powers for project, work or activity operation: This resolution will contain:

a) Legal considerations provided as the basis for the pronouncement and approval of environmental study

b) Technical considerations on which the Resolution is based;

c) Considerations on the Social Participation Process, in accordance with applicable environmental regulations;

d) The approval of the corresponding Environmental Studies, the granting of the environmental license and the conditions referring to the suspension and / or revocation of the environmental license in case of non-compliance;

e) Obligations that must be fulfilled during all phases of project, work or activity life cycle.

- Art. 41 Environmental permits for activities and projects in operation (ex post studies) .- Projects, works or activities in operation that must obtain an environmental permit in accordance with the provisions of this Book, must begin the regularization process from the date of publication of this Regulation in the Official Registry.

- Art. 42 Registries of environmental permits.- The National Environmental Authority will keep a record of the environmental permits granted at the national level through SUIA.

- Art. 43 Closure of operations and abandonment of the area or project.- Control Subjects that for any reason require operations closure and/or abandonment of the area, must execute the closure and abandonment plan as approved in the Respective Environmental Management Plan; Additionally, they must present Environmental Reports, Environmental Audits or other documents in accordance with the guidelines established by the Competent Environmental Authority..

CHAPTER V

SOCIAL PARTICIPATION

- **Art. 44 Social participation.-** It is governed by principles of legitimacy and representativeness and is defined as an effort by State Institutions, citizens and the control subject interested in carrying out a project, work or activity.

Competent Environmental Authority will inform the population about possible implementation of activities and/or projects, as well as about possible expected socio-environmental impacts and the relevance of the actions to be taken. In order to collect their opinions and observations, and incorporate in the Environmental Studies, those that are technically and economically viable.

Social participation process is mandatory as part of obtaining the environmental license.

- Art. 45 Participation mechanisms.- These are the procedures required by Competent Environmental Authority to make Social Participation effective.

For the application of these mechanisms and systematization of their results, action will be taken in accordance with provisions of the Instructions or Instruments issued by National Environmental Authority for this purpose.

The mechanisms of social participation will be defined considering: Level of impact generated by the project and the level of conflict identified; and if is the case, they will generate greater spaces for participation.

- Art. 46 Moments of participation - Social Participation will be attended during environmental study review, in accordance with procedure established in the regulations issued for that purpose and must be carried out in a mandatory manner by Competent Environmental Authority in coordination with the promoter of project activity, taking into account the particularities of each case.

CHAPTER VI: INTEGRAL MANAGEMENT OF NON-HAZARDOUS SOLID WASTE, AND HAZARDOUS AND / OR SPECIAL WASTE

- **Art. 47 National Priority.-** The Ecuadorian State declares as a national priority and as of public interest and subject to State protection, the integral management of non-hazardous solid waste and hazardous and / or special waste. Public interest and state protection on the matter implies the assignment of leadership and protection in favor of the National Environmental Authority, for the issuance of policies on the integral management of non-hazardous solid waste, hazardous and / or special waste.

It also implies the responsibility extended and shared by the entire society, in order to contribute to sustainable development through a set of national intersectoral policies, in all management areas, as defined and established in this Book and particularly this chapter. They complement the comprehensive regime, the set of public policies, institutions and specific regulations, applicable at the national level. By virtue of this declaration, both policies and regulations contained in the pertinent legislation, as well as those contained in this Book and technical standards derived from it, are of priority execution at national level; non-compliance will be sanctioned by the National Environmental Authority, in accordance with the sanctioning procedure established in this Book.

SECTION I. INTEGRAL MANAGEMENT OF RESIDUES AND / OR SOLID NON-HAZARDOUS WASTE.

- **Art. 55 On the comprehensive management of non-hazardous solid waste and / or waste.-** Comprehensive management constitutes the set of actions and regulatory, operational, economic, financial, administrative, educational, planning, monitoring and evaluation provisions, which have the purpose of giving non-hazardous solid waste the most suitable destination from a technical, environmental and socioeconomic point of view, according to its characteristics, volume, origin, costs of treatment, possibilities of recovery and use, commercialization or finally its final disposal. It is aimed at

the implementation of solid waste management phases, which are the minimization of its generation, separation at source, storage, collection, transportation, collection and / or transfer, treatment, use and final disposal. Appropriate waste management contributes to reducing the environmental impacts associated with each of the waste management stages.

- **Art. 56 Technical standards.-** The National Environmental Authority will establish a technical standard for comprehensive management of non-hazardous solid waste and / or waste, in all its phases.

PARAGRAPH I - GENERATION

- **Art. 60 Generator.-** All non-hazardous waste and / or solid waste generator must:

a) Be responsible for their handling until the moment they are delivered to collection service and deposited in authorized sites determined by competent authority.

b) Take measures in order to reduce, minimize and / or eliminate its generation at the source, by optimizing waste-generating processes.

c) Perform separation and classification at the source in accordance with the provisions of specific regulations.

d) Temporarily store waste under technical conditions established in the regulations issued by the National Environmental Authority.

e) Large generators such as industry, commerce and services must have adequate and technically built facilities for temporary storage of non-hazardous solid waste, with easy accessibility to carry them out.

f) Large generators such as industry, commerce and services, must keep a monthly record of the type and quantity or weight of the waste generated.

g) Large generators such as industry, commerce and services must deliver non-hazardous solid waste already classified to environmental managers authorized by the National Environmental Authority or accredited Responsible Enforcement Authority for approval, to guarantee its use and / or correct final disposal. , according to case.

h) The Autonomous Decentralized Municipal Governments must make an annual declaration of generation and management of residues and / or non-hazardous wastes before the National Environmental Authority or the Environmental Authority of Application responsible for its approval.

i) Place the containers in the collection place, according to the established schedule.

- **Art. 61 Prohibitions.-** Do not deposit liquid, pasty or viscous substances, excreta, or hazardous or special handling waste, in the containers intended for collection of non-hazardous solid waste.

PARAGRAPH II. SEPARATION AT SOURCE

- **Art. 62 Separation at the source.-** The generator of non-hazardous solid waste is obliged to carry out separation at source, classifying them according to Comprehensive Waste Management Plan, as established in the environmental regulations applicable.

PARAGRAPH III. TEMPORARY STORAGE

- **Art. 63 Temporary urban storage.-** The parameters for the temporary storage of non-hazardous solid waste already classified are established, without prejudice to others established by the National Environmental Authority, in accordance with the following:

- a) Non-hazardous solid waste must be temporarily disposed of in closed containers or containers (with a lid), identified, classified, in order and, if possible, with a plastic cover inside.

b) Containers for temporary storage of non-hazardous solid waste must comply at least with; be covered and properly located, adequate capacity according to the volume generated, built with resistant materials and have identification according to waste type.

c) The temporary storage of non-hazardous waste will be carried out under the conditions established in the INEN technical standard.

- **Art. 65 Prohibitions.-** Bags and / or containers with solid waste should not remain on public roads and places on days and times other than those established by the collection service.

SECTION II. INTEGRAL MANAGEMENT OF HAZARDOUS AND / OR SPECIAL WASTE

- **Art. 78 Scope.-** This Chapter regulates management phases and mechanisms for prevention and control of contamination by hazardous and / or special wastes in the national territory, in accordance with the procedures and technical standards provided for in the applicable regulations and in the International Agreements related to this matter, signed and ratified by the Ecuadorian State.

In this framework, the present normative body regulates in a differentiated way, all phases of integral management and administrative and technical regulations corresponding to each one of them. Without prejudice to state protection of environment, all citizens and especially promoters of hazardous and / or special waste management, have the responsibility to collaborate from their respective scope of action, with the security measures and control of said materials. When risks are managed under the principle of subsidiary decentralization, it will imply the direct responsibility of institutions within their geographic scope. When their capacities for risk management are insufficient, the entities with greater territorial scope and greater technical and financial capacity will provide necessary support with respect to their authority in the territory and without relieving them of their responsibility.

- **Art. 79 Hazardous waste.-** For the purposes of this Book, the following shall be considered hazardous waste:

  a) Solid, pasty, liquid or gaseous wastes resulting from a process of production, extraction, transformation, recycling, use or consumption and that contain any substance that has corrosive, reactive, toxic, flammable, biological-infectious and / or radioactive characteristics, that represent a risk to human health and the environment according to the applicable legal provisions and,

  b) Those that are determined in the national lists of hazardous wastes, unless they do not have any of the characteristics described in the previous paragraph. These lists will be established and updated through ministerial agreements.

  To determine whether a waste should be considered as dangerous, its characterization must be carried out in accordance with the technical standards established by the National Environmental Authority and / or the National Standardization Authority or, failing that, by internationally accepted technical standards, accepted expressly by the National Environmental Authority.

  The management of hazardous waste containing radioactive material, whether of natural or artificial origin, will be regulated and controlled by the specific regulations issued by the National Electricity and Renewable Energy Authority or the one that replaces it, which does not exempt the generator from provide information on the environmentally appropriate management of these wastes to the National Environmental Authority, or the need to have the corresponding environmental permit by virtue of the regularization process established in this Book.

- **Art. 80 Special waste.-** For the purposes of this Book, the following will be considered as special waste:

  a) Those wastes that without being dangerous, by their nature, can impact environment or health, due to the volume of generation and / or difficult degradation and, for which a recovery, reuse and / or recycling system must be implemented with the purpose of reducing the amount of waste generated, avoiding its inadequate handling and disposal, as well as the over saturation of municipal sanitary landfills;

  b) Those whose substance content has corrosive, reactive, toxic, flammable, biological-infectious and / or radioactive characteristics do not exceed the concentration limits established in the national environmental regulations or, failing that, the applicable international regulations.

  c) Those that are determined in the national list of special waste. These lists will be established and updated through ministerial agreements.

To determine whether a waste should be considered as special, its characterization must be carried out in accordance with the technical standards established by the National Environmental Authority and / or the National Standardization Authority or, failing that, by internationally accepted technical standards.

- **Art. 81 Obligation.-** Are subject to compliance and application of the provisions of this section, all natural or legal persons, public or private, national or foreign, that within the national territory participate in any of the phases and activities of management of hazardous and / or special wastes, in terms of preceding articles in this Chapter.

  It is the obligation of all natural or legal persons, public or private, national or foreign who are dedicated to one, several or all phases of the comprehensive management of hazardous and / or special waste, ensure that the personnel in charge of handling of these wastes, have the necessary training and have the appropriate protective equipment, in order to protect your health.

PARAGRAPH IV: NATIONAL MARITIME AND RIVER TRANSPORTATION

- **Art. 120 Obligation.-** Obligation.- Those who transport hazardous and / or special wastes by sea or river in the national territory, must obtain the environmental permit from the National Environmental Authority, under procedures established for that purpose. The personnel in charge of the maritime and river transport operation of hazardous and / or special materials must be trained in the subject; training must be through courses endorsed by the National Directorate of Aquatic Spaces or the one that replaces it, and / or the International Maritime Organization.

  Controllers must comply with applicable provisions that regulate transport of dangerous goods by water, established in the International Maritime Code of Dangerous Goods (IMDG) to each substance, material or article possible to be transported, international agreements of which Ecuador It is part, as well as the applicable national and international maritime regulations.

- **Art. 121 Coordination.-** For purposes of control and compliance with the requirements established for the transport of hazardous materials, the National Environmental Authority will coordinate actions with the National Directorate of Aquatic Spaces or the one that replaces it and other local and national authorities competent in matters of maritime and river transport, for which the pertinent mechanisms will be established

CHAPTER VIII: QUALITY OF BIOTIC AND ABIOTIC COMPONENTS

- **Art. 192 Obligation.-** All natural or legal persons, public or private, community or mixed, national or foreign, are obliged to submit to the rules contained in this Book, prior to the development of a work or activity or project that may negatively alter the components biotic and abiotic in order to prevent and minimize impacts whether such work, activity or project is in charge of them, or when it is executed by a third party.

- **Art. 194 Evaluation**, **control and monitoring.-** The National Environmental Authority, the Environmental Authorities of responsible Enforcement or entities of the Decentralized National System of Environmental Management, within the framework of their competences, will evaluate and control the quality of components biotic and abiotic, through the environmental control and monitoring mechanisms established in this Book, in accordance with the technical standards issued for this purpose.

- **Art. 195 Responsibility.-** The Competent Environmental Authority will in no case, be responsible for emissions, discharges and dumping containing different components or do not comply with the established limits reported by the Controlling Subject, who will be responsible in the administrative, civil, or criminal.

In addition to the imposition of administrative, civil or criminal sanctions generated by non-compliance with applicable environmental regulations, non-compliance with contingency measures for cleaning, remediation and restoration of a contaminated area, which in turn becomes a source of contamination of the environment, may lead to the generation of environmental liabilities, the responsibility of which will fall on who generated the contamination, on the Control Subject who does not take immediate corrective measures and on whoever prevents the application of the pertinent corrective measures, if applicable.

- **Art. 196 Authorizations of emissions, discharges and dumping.-** Control Subjects must comply with this Book and its technical standards. Likewise, they must obtain the corresponding environmental administrative authorizations from the Competent Environmental Authority.

In no case will Competent Environmental Authority grant environmental administrative authorizations when emissions, discharges and dumping exceed the permissible limits or the corresponding quality criteria established in this Book, in the technical standards or in the application annexes.

In the event that the activity exceeds the permissible limits, it will be subject to the sanctioning procedure established in this Book.

Discharges will not be authorized, whether they are sewage or industrial waters, on water bodies, whose minimum annual flow cannot support the discharge; that is, it exceeds the carrying capacity of the water body. The determination of the carrying capacity of the water body will be established by the Single Water Authority in coordination with the National Environmental Authority.

- **Art. 199 Contingency plans.-** Contingency plans must be implemented, maintained, and periodically evaluated through drills. Drills must be documented and their records will be available to Competent Environmental Authority. The lack of records will constitute proof of non-compliance with this provision. The execution of the plans contingency must be immediate. In case of delay, it will be considered as aggravating at the time of resolving the administrative procedure.

SECTION II: QUALITY OF BIOTIC COMPONENTS

- **Art. 202 Biotic components.-** Understand as flora, fauna and other living organisms in their different levels of organization. According to the area and characteristics of regulated activity, environmental quality will be evaluated and additionally controlled, through biotic studies through the tools established in the existing environmental regulation and control mechanisms, scope and focus of the studies of the Biotic component will be determined in the corresponding Terms of Reference.

- **Art. 203 Minimization of impacts.-** For those projects that directly or indirectly affect areas with primary plant cover, native forests, protected areas, sensitive ecosystems, all existing technological alternatives at the national and international level must be analyzed in order to minimize impacts; For the analysis of alternatives, environmental aspect will be mainly considered.

When it is required to install oil pipelines, gas pipelines, ore pipeline, flow lines, electrical transmission lines, heliports and / or driveways in areas with primary forests, protected forests and by exception and with the limitations established in the Constitution in protected areas, planning rights of way must include, among others, the following provisions:

a) Avoid cutting down large trees, sensitive and threatened species and sensitive sites.

b) Use a single right of way that includes: carriage access, electrical transmission lines, flow lines, oil pipelines, gas pipelines, ore pipelines or pipes and ducts for the transport of other materials

c) The maximum clearance allowed on average for the right-of-way is ten (10) meters wide, and construction technology must be applied to minimize clearance.

PARAGRAPH I: WATER

- **Art. 209 Quality of the water.-** These are the physical, chemical and biological characteristics that establish composition of water and make it suitable to satisfy health, well-being of population and ecological balance. The evaluation and control of water quality will be executed with analytical procedures, sampling and monitoring of discharges, discharges and receiving bodies; Said guidelines are detailed in Annex I. In any case, the Competent Environmental Authority may order the Controlling Subject responsible for discharges and dumping to carry out samples of their discharges as well as receiving body of water.

All anthropic activities must be executed with necessary preventive actions to avoid altering and ensuring the quality and quantity of water in the watersheds, alteration of the physical-chemical and biological composition of water sources due to the effect of liquid discharges and discharges or waste disposal in general or other negative actions on its components, will entail sanctions that correspond to each case.

PARAGRAPH II: FROM THE SOIL

- **Art. 212 Soil Quality.-** To carry out an adequate characterization of this component in the environmental studies, as well as an adequate control, sampling and monitoring must be carried out following the methodologies established in Annex II and other corresponding regulations.

The Competent Environmental Authority and entities of the Decentralized National System of Environmental Management, within the framework of their powers, will control the quality of the soil in accordance with technical standards issued for that purpose. They constitute soil quality standards, physical-chemical and biological characteristics that establish the composition of the soil and make it acceptable to guarantee the ecological balance, health and well-being of the population.

PARAGRAPH III: SEDIMENTS

- **Art. 215 Quality of Sediments.-** Sediments can be of natural origin, such as those existing in the sea, beds of lakes and lagoons, rivers, streams and other water bodies, whether they are of permanent or temporary flow; and those of industrial origin, such as those from treatment plants, storage tanks or others. To carry out the evaluation of environmental quality through sediment analysis, sampling and monitoring of the areas directly influenced by the regulated activity should be applied, following the protocols regulated by the National Environmental Authority and in the case of not existing, following internationally accepted protocols.

- **Art. 216 Technical standards.-** The National Environmental Authority or the entities of the Decentralized National System of Environmental Management, within the framework of their powers, will issue technical standards for sediment quality, through the corresponding legal figure.

- **Art. 217 Evaluation, monitoring and control.-** Without prejudice to the application of control mechanisms established in this Book, the National Environmental Authority will evaluate and control the environmental quality by means of the analysis of sediments or will provide the Control Subjects to carry out the pertinent studies.

- **Art. 218 Treatment of contaminated sediments.-** It is executed by means of procedures accepted by Competent Environmental Authority and in accordance with the provisions of technical sediment standard and hazardous waste regulations, if applicable

CHAPTER XV. ENVIRONMENTAL TECHNICAL RULES. GENERAL CONSIDERATIONS OF TECHNICAL STANDARDS OF ENVIRONMENTAL QUALITY, EMISSION, DISCHARGE AND DISCHARGE

- **Art. 319 Elaboration of standards.-** Technical standards of environmental quality, emission and discharges, will be elaborated by means of participatory processes of discussion and analysis in the Decentralized National System of Environmental Management.

These standards will be dictated by administrative act of the Competent Environmental Authority**.**

- Art. 320 Stages for the elaboration of standards.- For the standards elaboration of environmental quality, emission, discharges and discharges, the provisions of article 4 of the Environmental Management Law will be observed, in accordance with the following stages:

a) Development of the necessary scientific, technical and economic studies;

b) Consultations at the level of the Decentralized National System of Environmental Management, as well as competent public and private organizations and civil society;

c) Analysis of comments received.

4.4.2 MINISTERIAL AGREEMENT 103

INSTRUCTION FOR THE REGULATION OF APPLICATION OF MECHANISMS OF SOCIAL PARTICIPATION ESTABLISHED IN THE EXECUTIVE DECREE 1040

CHAPTER I: DEFINITION AND SCOPE OF APPLICATION OF THE SOCIAL PARTICIPATION PROCESS (PPS)

- **Article 1.-** Social Participation Process is understood to be the actions by which the Competent Environmental Authority will inform population about possible implementation of projects, works or activities, as well as possible expected socio-environmental impacts and the relevance of the actions to be taken, in order to collect their opinions and observations, and incorporate those that are technically and economically viable into the Environmental Studies.

- **Article 2.-** Social Participation Process (PPS) will be carried out on a mandatory basis in all projects, works or activities that require an Environmental Study for their regularization. The National Environmental Authority, through the Unique Environmental Information System, will determine Social Participation procedure to be applied, which may be developed with or without a Socio-environmental facilitator according to project, work or activity level of impact.

- **Article 3.-** The National Environmental Authority will be in charge of the institutional control and administration of the Social Participation Processes (PPS) in those projects or activities in which it intervenes as a competent authority.
If there are duly accredited Environmental Authorities for Responsible Enforcement, they will be in charge of applying these instructions. In both cases, the Environmental Study will be published in the Unique Environmental Information System, where the observations of public will also be recorded.

- **Article 4.-** Without prejudice to other mechanisms established in the Constitution of the Republic of Ecuador and in the Law, for the proper application of this instrument, take into account the following mechanisms and definitions:

1) Public Presentation Assembly (APP): Central act of Social Participation Process that summons all the actors that are related to the project and in which the Study is presented in a didactic way and adapted to local sociocultural conditions, Impact and the Environmental Management Plan of the project, work or activity. In the assembly a dialogue space is generated where concerns about the project are answered and observations, criteria and recommendations are received from participants.

2) Informative Meetings (IR): In the IRs, promoter will report on the main characteristics of project, its foreseeable environmental impacts and respective mitigation measures in order to clarify questions and doubts about the project, receiving observations and criteria from the participants.

3) Public Information Centers (CIP): The Impact Study and Environmental Management Plan, as well as didactic and visualized documentation will be made available to the public in an easily accessible location; Personnel familiar with the project, work or activity must be present in order to be able to explain its contents. The Information Centers may be either fixed or itinerant.

4) Website: Mechanism through which all interested parties can access information on the project, work or activity, online. The website address will be widely publicized.

5) Social Participation Procedure: The National Environmental Authority will determine through the Unique Environmental Information System - SUIA, the procedure to be applied according to the level of impact that project, work or activity may generate.

6) Participatory workshops: To complement and reinforce the effect of the IRs, workshops may be held that allowing promoter to identify perceptions and local development plans to insert their proposal for mitigating and / or compensatory measures in their Environmental Management Plan, according to reality of environment where the development of activity, work, or project is proposed.

7) Socio-environmental Facilitator.- Professional in free exercise, without a dependency relationship with a public or private institution, that the Ministry of the Environment recognizes as qualified and registered for organization, coordination, and conduction of Social Participation Processes; in the management of discussion groups and in the systematization, analysis and interpretation of social dialogue processes between diverse actors: companies, local governments, State and civil society.

8) Area of Direct Social Influence: Space that results from the direct interactions of one or more elements of the project, work or activity, with one or more elements of the social context where it will be implemented. Direct relationship between the project, work or activity and social environment occurs in at least two levels of social integration: individual units (farms, homes, properties, and their corresponding

owners) and social organizations of the first and second order (communes, venues, neighborhoods, associations of organizations and communities)

In the event that final location of elements and / or activities of the project is subject to external factors to those considered in the Study or other subsequent technical and / or environmental aspects, the justifications of case must be submitted duly supported for evaluation and validation of the Competent Environmental Authority; for which determination of the area with direct influence will be made at least at the level of first and second order of social organizations.

9) Indirect Social Influence Area: Socio-institutional space that results from the relationship of project with political-territorial units where the project, work or activity is developed: parish, canton and / or province, the reason for relationship is the project, work or activity role in the planning of local territory. Although it is based on political-administrative location of project, work or activity, there may be other territorial units that are relevant for project Socio-environmental management, such as indigenous territorial districts, protected areas, and commonwealths.

Chapter III: SOCIAL PARTICIPATION PROCESS WITHOUT A SOCIAL

ENVIRONMENTAL FACILITATOR

- **Article 27.-** The process of social participation without socio-environmental facilitator will be executed through the publication of the Environmental Study on the Website of the Single Environmental Information System; if there is a web portal, it must also be published online on bidder's page. Observations, comments from the public will be collected on SUIA page, which will be incorporated into the Environmental Studies when they are technically and economically feasible.

The proponent will upload on the SUIA page the Environmental Study of project, work or activity with all its annexes, and executive summary thereof, which will describe in understandable and simple language the main characteristics of project, work or activity, its impacts and Proposed Environmental Management Plan.

- **Article 28.-** Once the Environmental Study, its annexes, and online executive summary have been published, the proponent of project, work or activity will inform the population about its socialization through the following means:

1) Publication in a mass media with coverage in the areas of influence of the project, work or activity (press, radio, or television).

2) Informative posters located in the implementation of project, work or activity in the billboards of sectional governments and in places of the greatest public influx of communities involved.

3) Written communications addressed to the subjects of social participation indicated in the Regulation of Application of mechanisms of Social participation established in the Environmental Management Law, to which the executive summary of Environmental Study will be attached, applying principles of legitimacy and representativeness for the issuance of said communications, the following will be considered:

a) Authorities of the central government and sectional governments related to the project, work or activity

b) Members of legally existing and duly represented community, indigenous, Afro-Ecuadorian, gender organizations and,

c) People who live in the area of direct influence, where the project, work or activity that involves environmental impact will be carried out.

The communication will include an extract of project, work or activity and the address of the Website where the Environmental Study and the executive summary will be published. In case of projects, works or activities that take place in areas with presence of communities of indigenous peoples and nationalities, communication of the Social Participation Process must be done in Spanish and in the languages of said communities residing in the Area of Influence Direct of the project, work or activity. In the same way, an extract of the project, work or activity translated into the language of the nationalities must be attached to written communications.

The means of verification of call made will be delivered by the proponent for review of the competent Environmental Authority, who will verify it has been executed in accordance with provisions of this Instruction. The publication of the Environmental Study will be 7 days from the date of communication to social actors of project, work or activity, during which time the observations, comments and recommendations of the public will be received online.

- **Article 29.-** Competent Environmental Authority, considering the level of impact of project, work or activity, may additionally arrange for the proponent through SUIA to execute an Informative meeting in the area of influence of the project, which will be held under the supervision of the Competent Environmental Authority.

The social actors related to project, work or activity must be summoned to the meeting in accordance with the provisions of Article 29 of this instrument. The information on place and date of Informative Meeting will be included in the means of convocation established in the aforementioned article.

The promoter of project, work or activity must submit the Report of the Informative Meeting held to competent Environmental Authority, including a forum for questions and systematization of the community's observations, comments and suggestions, as well as all the supporting documentation that allows verifying compliance with social participation mechanism: meeting minutes, registration of

attendees, photographic record, at least.

- Article 30.- The competent Environmental Authority, during the review of the Environmental Study, will verify that criteria, observations and recommendations received, which are technically and economically feasible, are considered by the promoter of the project, work or activity and included in the Study Environmental with its corresponding technical support.

4.4.3 MINISTERIAL AGREEMENT 097 A

Issues the Annexes of the Unified Text of Secondary Legislation of the Ministry of the Environment

- **Article 1.-** Issue Annex 1, referring to the Environmental Quality Standard and discharge of Effluents from the Water Resource

- **Article 2.-** Issue Annex 2, referring to the Environmental Quality Standard for Soil Resources and Remediation Criteria for Contaminated Soils

- **Article 3.-** Issue Annex 3, referring to the Standard for Air Emissions from Stationary Sources

- **Article 4.-** Issue Annex 4, referring to the Ambient Air Quality Standard or Immission level

- **Article 5.-** Issue Annex 5, referring to the Maximum Levels of Noise Emission and Methodology for Fixed Sources and Mobile Sources and Maximum Levels of Vibration Emission and Measurement Methodology.

4.4.4 MINISTERIAL AGREEMENT - 026

Procedure for Registration of Hazardous Waste Generators R.O. 334, dated May 12, 2008, Issues registration procedures of hazardous waste generators, hazardous waste management prior to environmental licensing, and for transportation of hazardous materials.

4.4.5 MINISTERIAL AGREEMENT 109 Amendment to Ministerial Agreement 061

Art. 27. – Replace the second paragraph of article 264, by the following.

“The Environmental Audits will be prepared by consulting companies or accredited individual consultants, based on the respective terms of reference approved according to audit type.

In addition to prohibition determined in article 206; Organic Code of the Environment, audits may not be executed by the operator himself, his contractors, subcontractors or personnel who are under a dependent relationship”.

Art. 28.- Incorporate an article subsequent to article 264, with the following content:

"**Art (…) .-** Review of Terms of Reference.- Once the documentation, information sent by the operator has been analyzed, the Competent Environmental Authority must approve, observe or reject within a maximum term of forty-five (45) days.

After the input of responses to observations by the operator, the Competent Environmental Authority will have a term of thirty (30) additional days to pronounce on the response presented by the operator.

In the event that the observations are not acquitted or presented within the specified time, the Competent Environmental Authority will archive the file and will order that the operator present new terms of reference, within a period of 15 days, without prejudice to the corresponding legal actions.

Art. 29.- Incorporate an article subsequent to article 26B, with the following content:

Art. (…) Review of the Environmental Audit. - Once the documentation and information sent by operator has been analyzed by Competent Environmental Authority, it must approve, observe or reject the environmental compliance audit within a maximum term of ninety (90) days.

The Competent Environmental Authority will have a term of thirty (30) days to pronounce on answers presented by the operator.

In the event that the observations are not cleared by operator for the second time and thereafter, the Competent Environmental Authority will again apply the collection of fees for environmental quality and management service for Environmental Audit pronouncements.

In case of approval of the environmental audit, operator will comply with environmental measures that are included in the implementation schedule of updated Environmental Management Plan, and the action plan, if applicable. The operator must update the environmental responsibility policy, if applicable.

The Competent Environmental Authority may apply other monitoring and control mechanisms to verify the results of the environmental audit report, the correct identification and determination of the findings and the membership of the established action plan".

Art 30.- Replace the final paragraph of article 271, by the following:

"Operators must submit invoices for pronouncement, regarding environmental audits and payments for control and monitoring provided by the Competent Environmental Authority, in the approval of the terms of reference and as provided in the applicable regulations, together with the report of respective audit".

Art 31.- Incorporate an article subsequent to article 271, with the following content:

"**Art. (…) Conjunction audits. -** The Competent Environmental Authority ex officio or at request of a party and on a single occasion may authorize the unification of consecutive periods of audits that accrue from the monitoring of the same environmental license that are the responsibility of the project, works or activity operators. This process will be executed by means of a motivated administrative act, without prejudice to the civil, administrative or criminal penalties that may be applicable.

Review and approval of this type of audits will be subject to the terms and deadlines set for the Environmental Compliance Audits.

This provision is not applicable to those audits that are already under review by the Competent Environmental Authority.

4.5 REGULATIONS

4.5.1 WORKPLACE SAFETY AND HYGIENE REGULATION

Issued by Resolution No. 172 of the Superior Council of the Ecuadorian Social Security Institute. It establishes specific provisions to minimize occupational risk and encourages the use of safety and protection equipment for workers, in addition to establishing suitable work environment specifications.

4.5.2 WORKERS SAFETY AND HEALTH REGULATION AND IMPROVEMENT OF THE WORKING ENVIRONMENT OF MINISTRY OF LABOR AND EMPLOYMENT

Issued by Executive Decree No. 2393 and published in Official Gazette # 565 of November 17, 1986. The provisions of this Regulation apply to all work activities and in all work centers, with the objective of preventing, reducing or eliminating work risks and the improvement of work environment. This regulation will be applied to all work activities since its objective is the prevention, reduction or elimination of work risks and the improvement of the work environment. It will also apply to all public companies, as prescribed in its article 11. The issues regulated by this legal standard, in general terms, refer to:

- **TITLE I:** General Provisions

- **TITLE II:** Rules relating to the general conditions of the work centers, project safety, structural safety, permanent services, temporary facilities, constructions, environment, and occupational hazards.

- **TITLE III**: Regulations on machines, tools, installations. Of installations, protections, organs of command, use and maintenance.

- **TITLE IV:** Handling and transport of materials, cargo vehicles, forklifts

- **TITLE V**: Collective Protection, Fire Prevention, Exit Signs, Fire Prevention,

- Evacuation of Premises, Safety Signs.

- **TITLE VI**: Personal protection for the skull, face, eyes, hearing, respiratory tract and others;

- **TITLE VII**: Incentives, responsibilities and sanctions.

4.5.3 GENERAL REGULATIONS OF CULTURAL HERITAGE LAW

Published in the Official Registry N° 787 of July 16, 1984. Articles 37, 38 and 39 of this regulation refer to the power of the National Director of the Institute of Cultural Heritage to order suspension or restoration of works that affect heritage culture of the Nation; Article 38 establishes solidarity between the owner of the property, those who have authorized or ordered the execution of the work, and the contractors or those in charge of executing it; According to Article 39, Municipalities or public or private entities must order the suspension or overthrow of works that threaten cultural heritage of the Nation and in the event that they form part of an environmental setting, they must be restored.".

4.6 TECHNICAL REGULATIONS

4.6.1 INEN ISO 3864: 2013 STANDARD. GRAPHIC SYMBOLS, SAFETY COLORS AND SAFETY SIGNS

This standard supersedes NTE INEN 439: 1984 safety colors, signs and symbols.

ISO 3864 consists of the following parts, under general title Graphic Symbols - Safety Colors and Safety Signs:

- Part 1: Design principles for safety signs and safety indications

- Part 2: Design principles for security labels for products

- Part 3: Design principles for graphic symbols used in safety signs

- Part 4: Colorimetric and photometric properties of materials for safety signs

This part of ISO 3864 establishes the safety identification colors and design principles for safety signs and safety indications to be used in workplaces and public areas for the purpose of accident prevention, fire protection, information on health risks and emergency evacuation. Likewise, it establishes the basic principles to be applied when developing the standards that contain safety signs.

4.6.2 INEN 2841 ENVIRONMENTAL MANAGEMENT STANDARD. COLOR STANDARDIZATION FOR TANKS AND TEMPORARY STORAGE OF SOLID WASTE.

-OBJECTIVE

This regulation establishes the colors to be used for storage recipients and the temporary storage of solid waste, to promote separation at the source of generation and selective collection.

-SCOPE OF APPLICATION

This regulation applies to identifying all storage recipients and temporary storage of solid waste generated at distinct sources: domestic, industrial, commercial, institutional, and service-related. Hazardous and special solid waste are excluded.

-REQUIREMENTS

Waste separation at the source is the generator's responsibility, and recipients should be used to facilitate its identification for its subsequent separation, collection, use (recycling, recovery, or reuse), or appropriate final disposal. Separation guarantees the quality of the usable waste and facilitates its classification. Therefore, recipients created for the same should be clearly differentiated.

Collection procedures should be carried out safely, taking care to prevent spills of the waste and avoiding loss of the previously separated materials. To ensure this, the waste should be packed in a manner that prevents its contact with the environment and with those responsible for its collection.

Collection recipients at the generation source may be returnable or disposable and should be stored at the established collection sites.

The collection and storing areas' infrastructure should be duly identified, and internal evacuation and transport systems will be taken into account, as established in NTE INEN 2266.

Once the waste has been separated into its respective recipients, it should be stored according to its real usage possibilities and compatibility to facilitate its collection and transport.

Recipients. Colored recipients should comply with the requirements established in this regulation, depending on location and type of waste.

4.7 OTHER LEGAL PROVISIONS

-General Regulation on Occupational Risk Insurance, issued via Resolution No. 741 of the Ecuadorian Social Security Institute of 30 May 1990.

-Regulation on Fire Prevention. Official Registry No. 47 of 21 March 2007.

-Regulation on Occupational Safety and Hygiene, issued via Resolution No. 172 of the Higher Institute of the Ecuadorian Social Security Institute.

-Regulation on worker health and safety and improvement of the work environment. Ministry of Work and Employment. Official Registry 137 of 9 August 2000.

4.8 INSTITUTIONAL FRAMEWORK

4.8.1 MINISTRY OF THE ENVIRONMENT OF ECUADOR

Article 8 of the Law of Environmental Management states that the national environmental authority will be ruled by the Ministry of the Environment, which acts as the governing body, coordinator, and regulator of the National Decentralized System of Environmental Management, notwithstanding other competencies of the other state institutions. It is responsible for dictating policies, rules, and instruments for education and control. Thus, it ensures the sustainable use and preservation of natural resources, thereby guaranteeing its citizens' right to live in a healthy environment and support the country's development.

Article 9 (g) of the Environmental Management Law establishes the attributions of the Ministry of the Environment. These include the right to settle disputes over competencies between organisms forming the National Decentralized System of Environmental Management. According to Article 20 of the Environmental Management Law, this Ministry issues environmental licenses, notwithstanding the competencies of the accredited entities such as environmental authorities of responsible use.

4.8.2 DECENTRALIZED REGIONAL AUTONOMOUS GOVERNMENT OF EL ORO.

The decentralized regional autonomous government of El Oro focuses its efforts on the development of local capacities to generate knowledge of the province's reality and its resources and its administrative, business, and societal culture. It stresses the importance of a necessary legal framework, coordination, and responsibility in handling and preserving natural resources, promoting human resources in their local, regional, national, and international management to ensure the province's harmonic development. And this will guarantee wellbeing and quality of life for its inhabitants.

4.8.3 UNDERSECRETARY OF PORTS AND MARITIME AND RIVER TRANSPORT.

"To promote the development of maritime and river activity, optimizing port services in Ecuador, to position it as one of the main agents in cargo handling in our region."

To promote the development of maritime and river activity, planning, regulating, and controlling the country's naval and port system, ensuring compliance with objectives and priorities as defined in the current legal framework.

Attributions and responsibilities include informing the top authorities of the Ministry of Transport and Public Works as to the convenience of the establishment of new national ports or the use of ports or maritime and river facilities, with commercial purposes, by public or private legal persons and entities.

CHAPTER 5. DESCRIPTION OF THE AUDITED ACTIVITIES

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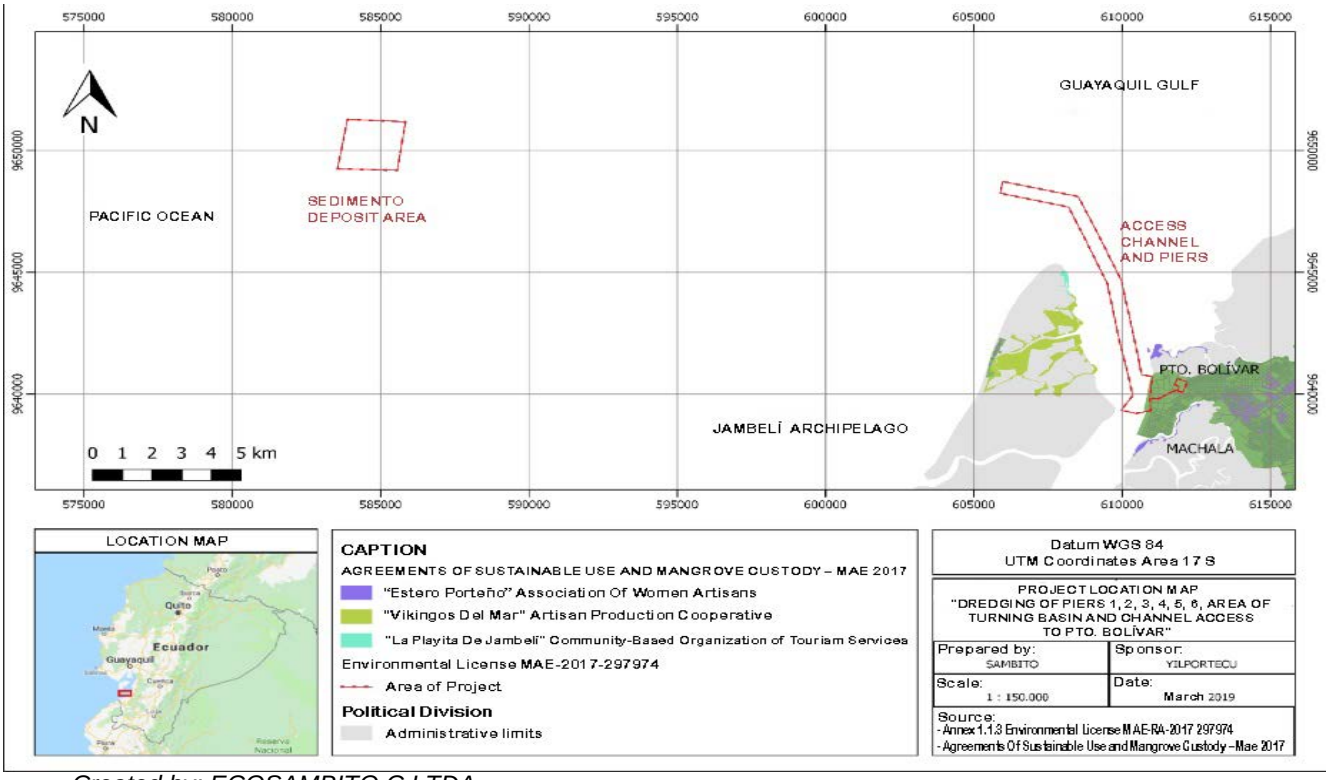
5 PROJECT DESCRIPTION

In the Santa Rosa canal, sheltered by the Isla de Jambelí, the privileged location of Puerto Bolivar offers natural port protection and makes it a safe place to dock and carry out distinct vessel operations in the El Oro province. The Santa Rosa canal is approximately 200 meters in width and is signaled with luminous buoys. It is a means of access to the port and the mooring area (YILPORT HOLDING A.S., 2015).

As part of the Puerto Bolivar development plan, it is anticipated that, with the implementation of the dredging project, in seven years, seventh-generation vessels will be able to enter the port. This means that vessels like the MSC OSCAR have a load of between 15,000 and 19,000 TEUs1 and measure some 400 meters in length.

Illustration 5-1 Location of the Dredging Project of Piers 1-2-3-4-5-6, maneuvering area and access channel to Puerto Bolivar



Created by: ECOSAMBITO C.LTDA.
Location: Puerto Bolivar, Machala, El Oro
Date: March 2019

The project implementation area is located in the Santa Rosa estuary. It corresponds to the navigation axis line to access the Maritime Terminal of Puerto Bolivar, the maneuvering and docking area of piers 1 to 6 (see Illustration 5-1), delimited by the following coordinates:

[1] From the term, "Twenty Equivalent Unit," referring to a standard container measuring 20 feet.

Table 5-1 Project Coordinates

Points	Latitude (X)	Longitude (Y)	Description
1	610956	9639311	Polygon 1: Piers 1, 2, 3, 4, 5 and 6, sediment pools and maneuvering area in the Santa Rosa Channel
2	610478	9639203	
3	609957	9639327	
4	610347	9639925	
5	610216	9640713	
6	609917	9642098	
7	609498	9644527	
8	608686	9646508	
9	608189	9647676	
10	605878	9648244	
11	605974	9648726	
12	608511	9648113	
13	609175	9646587	
14	609970	9644652	
15	610433	9642109	
16	610654	9640792	
17	611014	9640712	
18	610931	9639816	
19	611233	9639806	
20	611697	9640103	
21	611804	9640152	
22	611854	9640142	
23	611923	9640297	
24	611766	9640387	
25	611866	9640633	
26	612023	9640556	
27	612171	9640506	
28	612139	9640341	
29	612088	9640197	
30	612036	9640065	
31	611852	9640125	
32	611804	9640149	
33	611699	9640100	
34	611234	9639805	
35	610931	9639814	
1	583544	9649248	Polygon 2: Deposit tray at high sea
2	583880	9651278	
3	585837	9651184	
4	585560	9649187	

Source: Environmental License No. MAE-RA-2017-297974
Created by: ECOSAMBITO C.LTDA.
Location: Puerto Bolivar, Machala, El Oro
Date: February 2019

The proposed sediment extraction volume from the dredging is 7,575,385 m^3, although only in Phase 1, already partially executed from 29 March until 21 May 2018, it is estimated that 7,268,526 m^3 of sediment were mobilized (see Annex 3.1.7 1819-RQ0153_Outsurvey Volumes to Overdredge Design_rev 1).

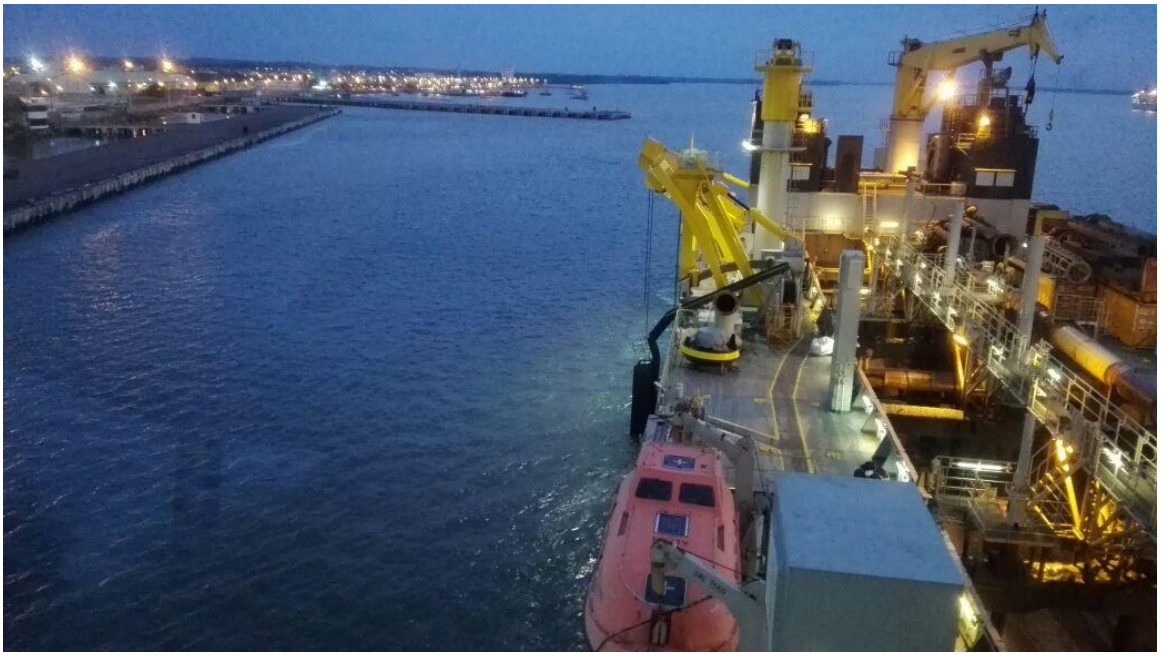
The trailing suction hopper dredgers (TSHDs) used in the first phase were leased from FLANDERS DREDGING CORPORATION N.V. and were:

i. Filippo Brunelleschi dredger, with registration number: INTERNAC (38702).

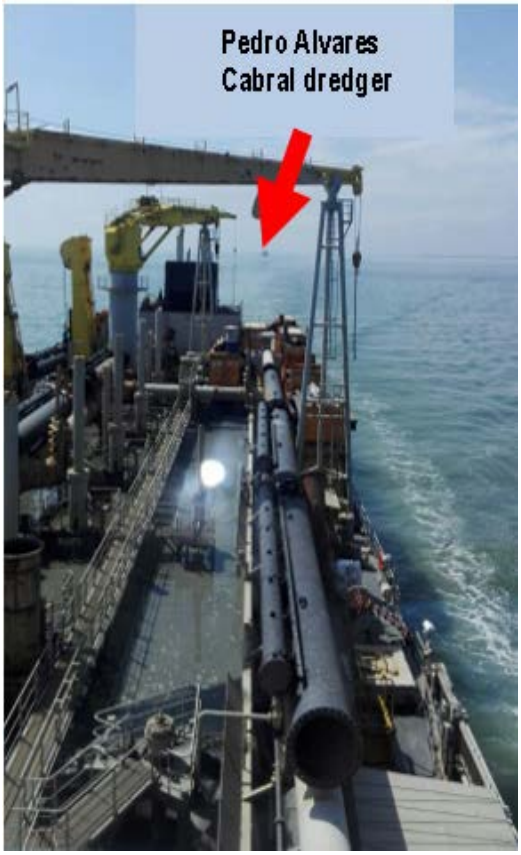
ii. Pedro Alvares Cabral dredger, with registration number: INTERNAC (78372).

The respective leasing contracts were duly registered with the Undersecretary of Ports and Maritime and River Transport.

Photographic record 5-1 Dredge vessels during Phase 1 of the dredging project



Piers of the Port Terminal and part of Puerto Bolivar, seen from the navigation bridge of the Pedro Alvares Cabral dredger



Filippo Brunelleschi and, in the background (red arrow), the Pedro Alvares Cabral dredger

Vessel traffic and passenger transport in the Santa Rosa Canal, seen from the navigation bridge of the dredger

Source: Photographic archives of YILPORTECU
Created by: ECOSAMBITO C.LTDA.
Location: Puerto Bolivar, Machala, El Oro Date: February 2019

5.1 PORT FACILITIES

The Port Bolivar Port Authority has an area of 41.99 hectares, completely enclosed and delimited, filled with industrial warehouses with administrative offices and warehouses, internal traffic lanes, maneuvering and storage yards, piers, and others.

The waterfront of the port area has a mooring line measuring 920 meters, divided into five berths situated in pairs in two distinct piers:

A. Breakwater with a port apron area of 130 m length, 30 m width and 12.5 m depth, attached to the ground by a 100 m long and 14 m wide concrete walkway, for the simultaneous docking of 2 vessels of up to 20,000 TPM (Berths 1 and 2).

B. Marginal wharf, with reinforced concrete slabs and piles situated on the coastline, measuring 660 m in length, with an older part of 360 m length, 15 m width and 12.5 m depth, attached to the ground by a 27 m long and 14 m wide walkway – forming two water mirrors that permit the simultaneous docking of 2 vessels of up to 20,000 TPM (Berths 3, 4); and a recent work of 300 m length, 38 m width and 14.5 m depth, attached to the ground by an ongoing platform until the storage area (Berth 5).

C. There is also an operating coastal jetty.

The Port Bolivar Port Authority also has a space reservation, making future expansions of the operations' surface area possible.

As for storage capacity, it has 218,240 m^2 between warehouses and patios (corresponding to 51.97% of the port's total land surface area).

5.2 THE DREDGING PROJECT

The dredging project includes the dredging of piers 1, 2, 3, 4, 5 and 6 (9.0 ha) as well as the dredging of the maneuvering area and the port's access channel (473.57 ha). The area, located in the Santa Rosa estuary, corresponds to the navigation axis line to access the Maritime Terminal of Puerto Bolivar, as well as an area of mooring and maneuvering for the vessels.

Illustration 5-2 Dredging area in piers

Source: (ECOSFERA CIA. LTDA., 2017)

Photograph taken with MAVIC drone (7 km transmission range, flight velocity 64 km/h).

Created by: Ecosfera Cia. Ltda., 2017.

Location: Puerto Bolivar – Machala, El Oro.

Date: 28 April 2017

Dredging Area

Illustration 5-3 Dredging area of the maneuvering area

Source: (ECOSFERA CIA. LTDA., 2017)

Photograph taken with MAVIC drone (7 km transmission range, flight velocity 64 km/h).

Created by: Ecosfera Cia. Ltda., 2017.

Location: Puerto Bolivar – Machala, El Oro.

Date: 28 April 2017

Dredging Area

Illustration 5-4 Dredging area of the access channel

Source: (ECOSFERA CIA. LTDA., 2017)

Photograph taken with MAVIC drone (7 km transmission range, flight velocity 64 km/h).

Created by: Ecosfera Cia. Ltda., 2017.

Location: Puerto Bolivar – Machala, El Oro.

Date: 28 April 2017

5.2.1 Dredging volume

Using the bathymetric study conducted by CONSULSUA Cia. Ltda. as a reference, in March 2017, increased volumes were obtained, as compared to the 2014 bathymetry. This percentage is applied to the volumes calculated for all of the existing piers. For pier no. 6 and its area to be dredged, a bathymetry was conducted between days 3 and 5 of March 2017, since there was no bathymetric data on the area. A total volume of 575,384.84 cubic meters was estimated.

To calculate the dredging's progress in Phase 1, the Flanders Dredging Corporation's assessment department, based on its surface-to-surface reports for each area, created its Calculations of Volume[2] report as of 10 July 2018 (Outsurvey Volume Calculations), which is presented in Table 5-2.

Table 5-2 Progress of dredging during the AAC (Phase 1) assessment period

Area/Volume	Initial volume	Final volume	Dredging volume
Pier 2	30,316.20	22,888.20	7.428,00
Pier 3	104,858.00	4,998.90	99.859,10
Pier 4	70,952.80	4,306.40	66.646,40
Pier 5	111,876.30	7,120.60	104.755,70
Pier 6	516,798.40	313,069.10	203.729,30
Maneuvering area	1,507,364.30	376,302.70	1, 131,061.60
Interior channel	2.180,637.40	311,227.10	1,869,410.30
Exterior channel	4,192,796.40	407,159.90	3,785,636.50
TOTAL DREDGING (m^3)			**7,268,526.90**

Source: *Report on the calculation of dredging volumes (see Annex 3.1.7)*

[2]See Annex 3.1.7 1819-RQ0153_Outsurvey Volumes to Overdredge Design_rev 1

***Created by**: ECOSAMBITO C.LTDA.*
***Location:** Puerto Bolivar, Machala, El Oro*

To complete Phase 1 - with the works that are expected to be completed in April 2019 - 1.62 million of additional m^3 will be dredged to a lower level of 14.5 m MLWS[3] and a sea bed width of 270 meters.

Phase 2 of the project, expected to be initiated on April 10 of 2019, foresees the dredging of 6.5 million additional m^3 (including the tolerance margin of + 0.5 m) until reaching a lower level of 16.5 m MLWS and a sea bed width of 270 meters, for the access channel, the maneuvering area and pier no. 6. Details on the dimensions and volume of the Phase 2 dredging are presented in Table 5-3.

Table 5-3 Phase 2 dredging works

Area	Dimensions	Lower level (m)	Volume (m^3)
Pier 6	500 X 100 m	-16.5	71,192.40
Maneuvering Area	94.7 ha	-16.5	1,840,482.60
Access Channel	400 ha	-16.5	4,131,787.30
TOTAL VOLUME TO DREDGE IN PHASE 2			**6,043,462.30**

***Created by:** ECOSAMBITO C.LTDA.*
***Date:** February 2019*

Future dredging works, foreseen for 2023, will be carried out for the maintenance of the areas that were dredged in Phases 1 and 2.

5.2.2 Sediment deposit

Although the Environmental Impact Assessment created for this project recommended that, for the deposit of dredged material (sediments) from the areas next to the piers (1 to 6), sediment pools should be used (needing to empty and refurbish the walls to capture the dredged material) and the sediment resulting from the maneuvering area and access channel should be situated in a deposit tray at high sea, with a 2 x 3 km survey area, located 13.75 miles from the sea buoy (25 km), and with depths exceeding -30m MLWS (possibly reaching -40MLWS); as previously explained in section 5.3, this was not actually carried out, but instead, 100% of the sediments were deposited in the sediment tray at high

[3] From the term *Mean Low Water Spring*, it refers to that produced at the spring tide time. Generally, it comes from taking a depressed plane under the mean tidal level, in quantity equal to half of the spring tide range, applying the necessary corrections to reduce the result to a mean value.

This plane is used in large part for hydrographic works outside of the US and is the reference plane for the Pacific sites at the Panama Canal.

sea.

5.2.2.1 Sediment pools

Sediment pools correspond to an area of approximately 12.9 hectares, located to the northeast of the Port Terminal, in the former ISSFA plots.

However, from that which was foreseen for the EIA of the project, these pools have not been used for the described purposes, and in technical evaluations carried out[4], the potential risk of floods in the wall of Pool no. 2 was established. This pool borders with an informal urban settlement installed in the land's flat area where it is situated.

These pools remain unused, and their presence has resulted in the accumulation of rainwater during the winter months, a latent risk for the generation of plagues in the area.

[4] See Annex 3.1.5 PRJ-R133-SURCONSUL_Informe Condiciones Estabilidad – Piscina 2

Photographic record 5-2 Sediment pool area

General view of sediment pool no.1

General view of sediment pools no. 1 and 2

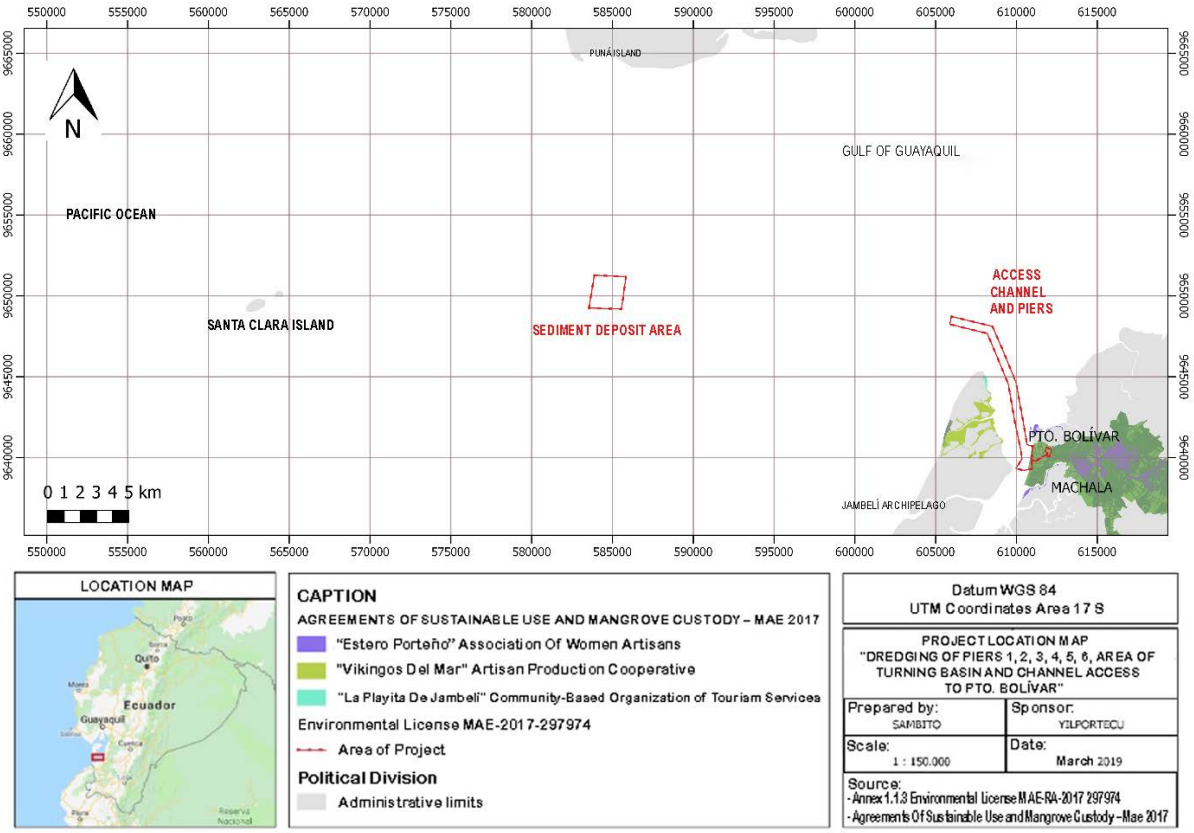
General view of sediment pool no. 3

Created by: *ECOSAMBITO C.LTDA.*
Location: *Puerto Bolivar, Machala, El Oro*
Date: *2 January 2019*

5.2.2.2 Deposit trays at high sea

The sediment deposit area at high sea is delimited by the polygon formed between the following UTM area 17S coordinates: (583544, 9649248); (583880, 9651278); (585837, 9651184); and (585560, 9649187), which can be seen in Illustration 5-5.

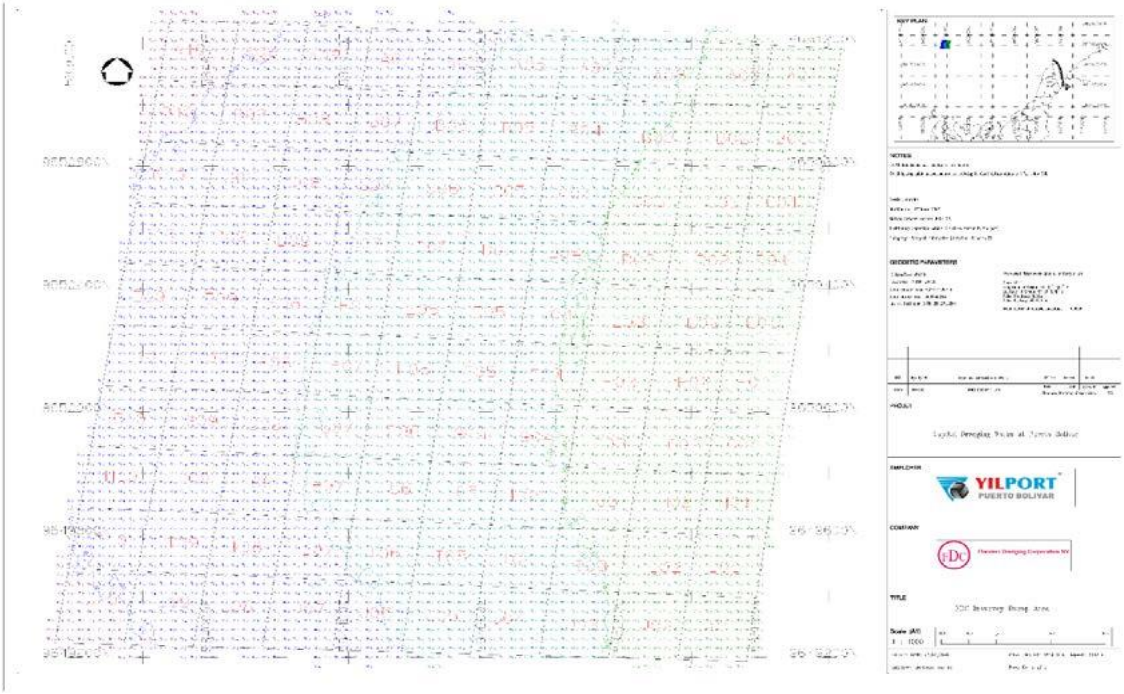
Illustration 5-5 Location of the deposit tray at high sea



Created by: *ECOSAMBITO C.LTDA.*
Location: *Puerto Bolivar, Machala, El Oro*
Date: *March 2019*

The sediment deposit tray offshore has a survey area of 4km^2 (2km per side) and has been sub-divided into 100 areas measuring 4 ha each (200m x 200m per side). See Illustration 5-6. To ensure the dredged sediment's homogenous discharge, each sub-area is assigned according to bathymetry and used as a deposit area for each of the trips made by the dredgers participating in the dredging operations.

Illustration 5-6 Sediment deposit area at high sea



Created by: *FLANDERS DREDGING CORPORATION*
Location: *Puerto Bolivar, Machala, El Oro*
Date: *March 2018*

5.2.3 Dredging methodology

In the Environmental Impact Assessment that was created for this project, the following was established: For the dredging to be carried out in the marine areas adjacent to piers no. 1, 2, 3, 4, 5, and 6, a pipeline would be installed, to follow the curbside situated on the right-hand side of the route leading to the start of Pier 5. Later, it would be installed on the edge of the piers until reaching the onset of Pier 3, permitting dredging of Piers 3, 2, and 1 from this point; subsequently, the pipeline would be reduced, and the drainpipe would be situated between Pier 4 and 5; Work time is estimated at 162 days, and would use a CSD[5]-type IHC Beaver dredger as well as a dredger with trailing section hoppers (TSHD)[6] which would discharge sediments in the deposit at high sea for the maneuvering area and the access channel.

However, as noted in section 5.3, due to dredger programming changes due to its availability and the haste to complete the dredging prior to the onset of whale season (June-November period), it was decided to use two TSHD-type dredgers for the entire proposed dredging project.

[5] Cutter Suction Dredger
[6] Trailing Suction Hopper Dredger

The following activities have been completed from the dredging project:

i. **Dredger preparation.** - includes maintenance activities to be carried out on all equipment (dredgers, pump bench, piping, couplers, etc.), according to manufacturer recommendations, to ensure the proper functioning of the equipment and to reduce, to the greatest extent possible, the environmental pollution. Maintenance for mobile equipment should be carried out in authorized locations having the respective control equipment and final disposal for generated waste. The maintenance of piping should be planned according to the dredger functioning. Lubricant oil changes should be carried out every 500 work hours, for both main machineries and generators or according to overall maintenance guidelines stipulated by the builder. The used oil used generated from general dredger maintenance shall be stored in hermetic, metallic recipients and subsequently, their disposal will be carried out.

ii. **Fuel storage.** – this operation will be carried out directly from the dredger at the work site, assisted by vessels established for this activity. The fuel provider should have a contingency plan for hydrocarbon storage.

iii. **Dredging and storage of sediment material in hoppers.** – Suction pipes will descend to the sea bed and the heads will be dragged above the sea bed, suctioning material as the vessel slowly advances (trailing). The dredger head, connected at the end, to the lowest part of the suction tube, will suction the dredged sediments using the teeth and water pressure. The dredger may use distinct types of heads, depending on the ground conditions. With a submergible dredger pump, the mixture of water and sediment will be pumped from the sea bed to the inside of the hopper. And if necessary, from the hopper to the land. The hopper, which is the ship's hold, receives the mixture and permits the evacuation of the surplus of water through the overflow system. The dredging material remains in the hopper during the transport until the discharge of the same.

i. **Sailing to the point designated as the deposit area at high sea. -** As described in the previous section, the discharge of sediments is carried out in a geo-referenced manner in the sub-section that has been designated for the dredging in the operation. Once the hoppers are filled with the extracted sediments, the vessel will lift its dredging system (head) to subsequently sail to the sediment disposal point indicated in the section.

ii. **Disposal or deposit of dredged material (sediment) at high sea. -** Once its hoppers are filled with the extracted sediments, the TSHD-type dredger lifts its dredging system (head)

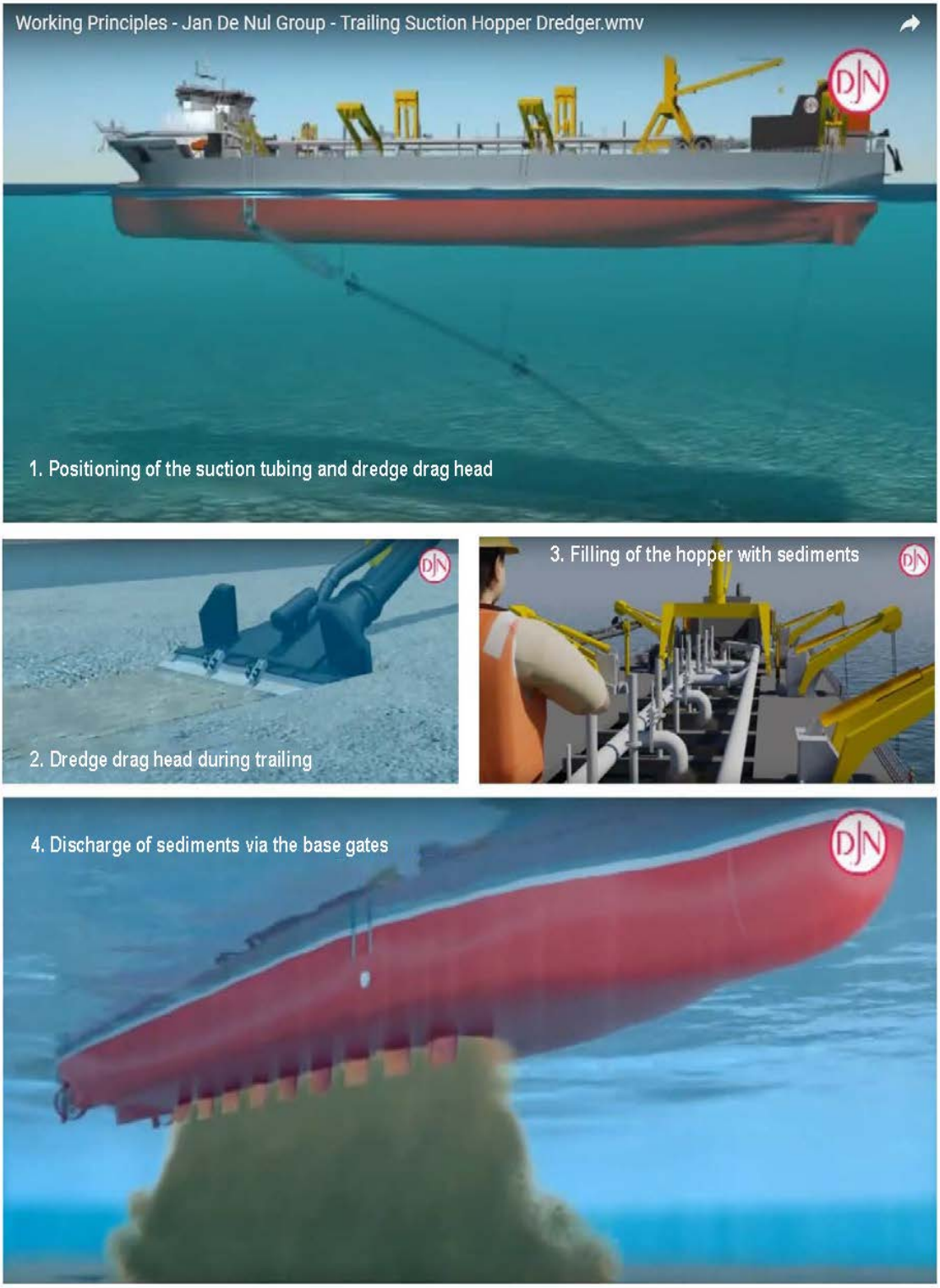
to subsequently sail to the sediment disposal point indicated in the previous section and, once situated in this point, the dredger opens its discharge gates that are situated in its lower part. Once the hoppers have been emptied, the vessel returns to the dredging site to initiate a new operation cycle.

iii. **Control bathymetry.** – To verify compliance of the level at which the dredging activities should take place, a bathymetry is carried out in the sites where dredging has taken place: if the results reveal that dredging has not reached the estimated level from the engineering study, the dredging process should continue.

For the programming of the project activities, it is estimated that 4 cycles per day will be required, considering that the dredging time until filling the hopper is approximately 90 minutes, in addition to 90 minutes of sailing to the deposit site.

In graphic form, Illustration 5-7 presents the dredging process.

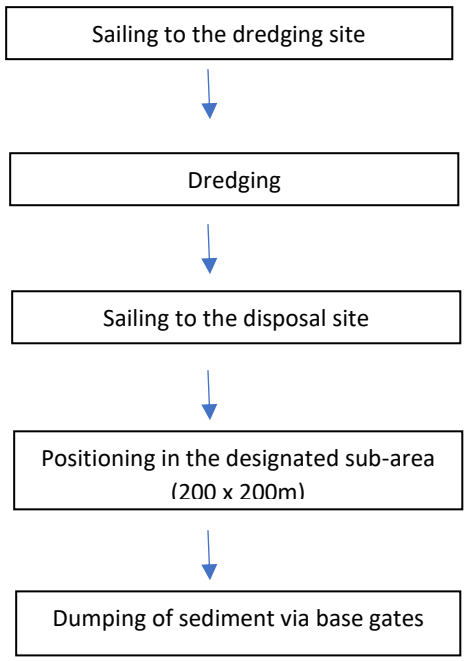
Illustration 5-7 Dredging process and sediment dumping



Source: Working Principles – Jan De Nul Group – Trailing Suction Hopper Dredger.wmv, available at https://www.youtube.com/watch?v=shxlh0gFgLw
Created by: *ECOSAMBITO C.LTDA.*
Date: *February 2019*

In schematic form, Illustration 5-8 presents the flow of activities of the dredging operation:

Illustration 5-8 Flow chart of completed dredging activities



Source: *Document No. FDC1819-MES.81.01.e.01 Method Statement Dredging Operations (see Annex 3.1.1 Dredging Operations Methods*
Created by: *ECOSAMBITO C.LTDA.*
Date: *February 2019*

5.2.4 Sediment dispersion model

For the modeling of sediment dispersion, included as part of the Environmental Impact Assessment for the project's environmental regularization, horizontal and vertical displacement of the particles was considered, as occurring via tidal action that influences each level of depth, stratifying three levels:

- from 0 to 9 m (surface layer)
- from 9 to 18 m (middle layer)
- from 18 to 27 m (sea bed layer)

According to the sediment dispersion modeling carried out and the results of the same, it was concluded that, under extreme and conservative tidal conditions, the area required for sedimentation of the fine materials will not interfere with activities related to the use of the water resources on the shores located near the deposit site, such as the shrimp farms, given that the sediments will be displaced according to the following:

- a distance of 1.48 km from the deposit site, when the tide is at a surface-level flow state;
- 1.46 km for fine sediment at the middle depth level; and
- 1.84 km at the sea bed level, due to fine sediment characteristics.

Similar behavior is found upon carrying out the modelling for the ebbing tide state, presenting an approximate displacement of fine sediments of approximately 6.02 km from the deposit site.

5.2.5 Project life cycle

The dredging project for piers 1, 2, 3, 4, 5 and 6, the maneuvering area and the access channel to Puerto Bolivar has an approximate life cycle of 15 months.

In Table 5-4, the dredging activities and execution times for each area are detailed.

Activity	Execution time	Deposit site	Volume (m^3)
Pier 6	3 months	Jambelí channel	71,192.40
Maneuvering area	5 months	Jambelí channel	1,840,482.60
Access channel	6 months	Jambelí channel	4,131,787.30

** Between June and October, no dredging works will be carried out, given that this is a transit and reproduction period for humpback whales (Megaptera novoeangliae)*

Created by: *ECOSAMBITO C.LTDA.*
Date: *February 2019*

The project has been planned to be carried out in two phases. In Phase 1, dredging will be completed to a depth of -14.5 m MLWS, with respect to the Sicigia sea level and a sea bed width of 200 meters, and in Phase 2, dredging will be carried out to a depth of -16.5 m MLWS with respect to the Sicigia sea level and a sea bed width of 270 meters.

As previously mentioned, it is anticipated that in 2023, a new dredging operation will be carried out in these areas as part of the maintenance activities of the Port Terminal operations, depending on the level of sedimentation detected in future measurements.

5.2.6 Machinery and equipment

A trailing suction hopper dredgers (TSHD) is a self-propelled vessel that trails dredged material in its hopper. The dredging process of a TSHD consists of a loading cycle (dredging), transport (sailing), and the discharge phase, as previously described.

In general, suction dredgers that function via suction are merely carrier dredgers used to dredge grounds made of sludge, sand, gravel, or soft clay.

Suction hopper dredgers, which are classified as hydraulic dredgers, include dredging equipment that uses centrifuge pumps, at least for the dredged material transport process. The material is removed from the water or is transported horizontally to another site. TSHD is used in various maritime and

maintenance construction projects, such as maintenance dredging in ports and access channels, eliminating sediments to reach the desired depth. They are mainly used to dredge loose materials, such as sand, clay, and gravel.

Normally, a TSHD is equipped with one or two suction pipes to which the suction heads are connected, functioning like huge vacuum cleaners.

The main parts of this type of dredger are:

- Standard installation in the vessel: motors, cabins and navigation bridge.
- The dredge head connected to the end of the lower part of the suction pipe.
- The submergible dredging pump.
- The suction pipe and the covered tubing, via which the mixture is transported.
- The hopper, which is the vessel's hold.

The main technical characteristics of the dredgers participating in the project are detailed in Table 5-5.

Table 5-5 Technical specifications of the dredgers used in the project

Technical specifications	Filippo Brunelleschi	Pedro Alvares Cabral (PAC)
Hopper capacity:	11,300 m^3	14,000m^3
Deadweight:	18,620 ton	26,530 ton
Length:	142.5 m	147.8 m
Width:	27.5 m	30.0 m
Draught with load:	9.1 m	11.20 m
Maximum dredging depth:	38 / 57.5 / 77 m	43.8 / 52 m
Diameter of suction pipe:	1,200 mm	1,300 mm
Power of pump (trailing):	3,400 kW	4,000 kW
Power of pump (discharge):	7,500 kW	8,500 kW
Propulsion power:	2 x 5,750 kW	2 x 7,200 kW
Total installed diesel power:	13,110 kW	15,960 kW
Velocity:	15.3 kn	15.7 kn
Storage:	34	33
Constructed in:	2003	2012

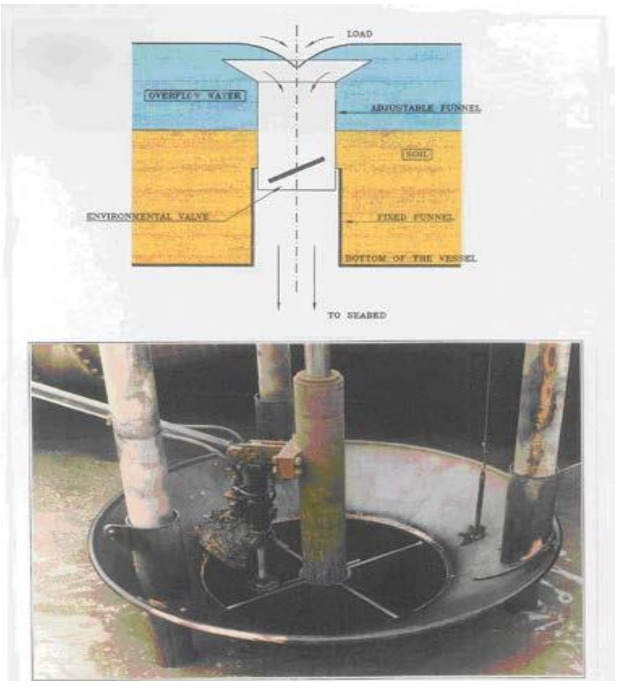
Source: *Technical specifications, available at:*
https://www.jandenul.com/sites/default/files/equipment-item/pdfs/01.tshd_en_-_v2013-2_-_pedro_alvares_cabral.pdf
https://www.jandenul.com/sites/default/files/equipment-item/pdfs/01.tshd_en_-_v2013-2_-_filippo_brunelleschi_0.pdf
Created by: *ECOSAMBITO C.LTDA.*
Date: *March 2019*

The mobilization of these vessels does not represent an obstacle for the transit of others traveling in the navigation channel since the described dredgers are self-propelled and autonomous in terms of movement.

The dredging operation is carried out using the following systems: winches, cables and pullies, hydraulic jacks, pumping systems (electric motor and pump), suction system (head and injectors), pressurized water, and gates of the hopper.

TSHD-type dredgers, which intervene in dredging, have overflow funnel (vertical pipes inside the hopper that, through the keel, drain excess water from the hopper, thus maximizing the hopper load) with an anti-turbidity or "environmental" valve, which is a hydraulic valve installed within the overflow pipe, and that drastically reduces the turbidity caused by an excess of water drained through the overflow funnels by containing the flow of the mixture that enters through the funnel. In this way, it decreases the height from which the water falls, reducing the quantity of air that mixes in the funnel and reducing fine particles' suspension (see Illustration 5-9).

Illustration 5-9 Dredger equipment



Dredge drag head

Funnel and "environmental" valve

Suction pipe

Sediment hopper

***Source**: Document No. FDC1819-MES.81.01.e.01 Method Statement Dredging Operations (see Annex 3.1.1 Dredging Operations Methods*
***Created by:** ECOSAMBITO C.LTDA.*
***Date:** February 2019*

For the period of this Environmental Compliance Audit, of the two vessels participating in the dredging during the assessed period, only the Pedro Alvares Cabral dredger remained in Ecuadorian waters and was inspected by the audit team and by personnel of Flanders Dredging Corporation in the technical visit conducted in Posorja on 4 February 2019. The principal safety, prevention, and spill containment elements are shown in the following photographic records and waste management.

Photographic record 5-3 General view of the Pedro Alvares Cabral dredger anchored in Posorja

***Created by**: SAMBITO*
***Location**: Pedro Alvares Cabral dredger, Posorja – Guayas, Ecuador*
***Date:** February 4, 2019*

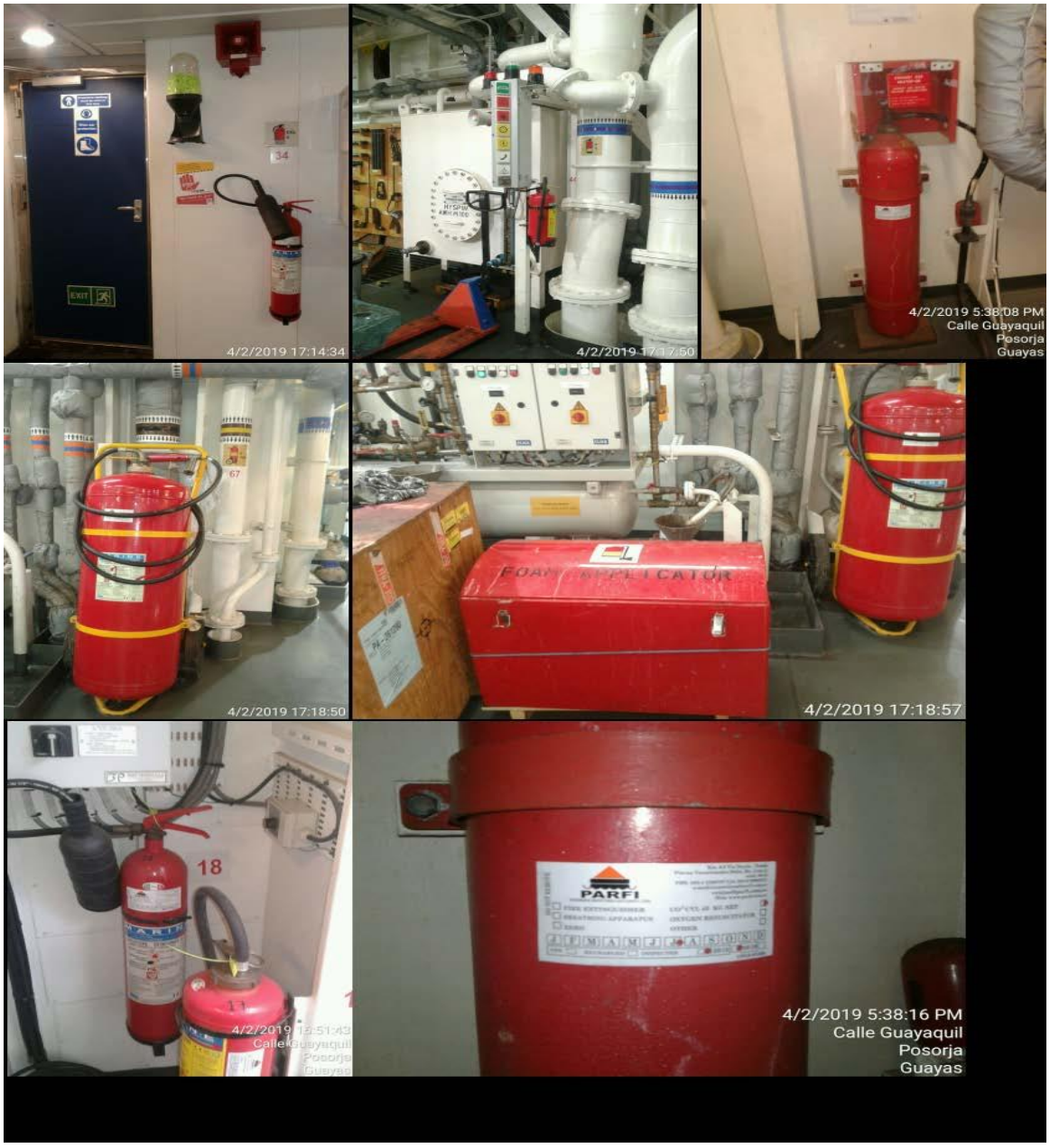
Photographic record 5-4 Emergency equipment in the Pedro Alvares Cabral dredger

Emergency equipment in navigation bridge, RCP system and lifejacket vest hold

Lifeboat for 40 people (x2), life raft for 12 people (x2), lifebuoys, emergency exits to deck.

Created by: *ECOSAMBITO C. LTDA*
Location: *Pedro Alvares Cabral dredger, Posorja – Guayas, Ecuador*
Date: *February 4, 2019*

Photographic record 5-5 Extinguishers in the Pedro Alvares Cabral dredger

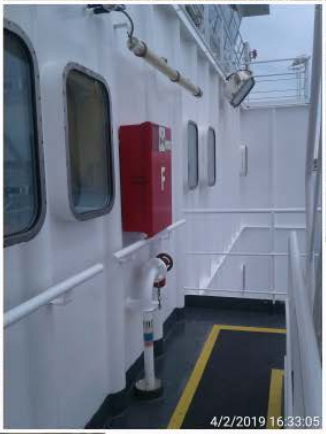


Fire extinguishers distributed in the PAC dredger's distinct areas, and label of annual revision of the extinguishers dated July 2018.

***Created by**: ECOSAMBITO C. LTDA*
***Location**: Pedro Alvares Cabral dredger, Posorja – Guayas, Ecuador*
***Date**: February 4, 2019*

Photographic record 5-6 Fire prevention system of the Pedro Alvares Cabral dredger

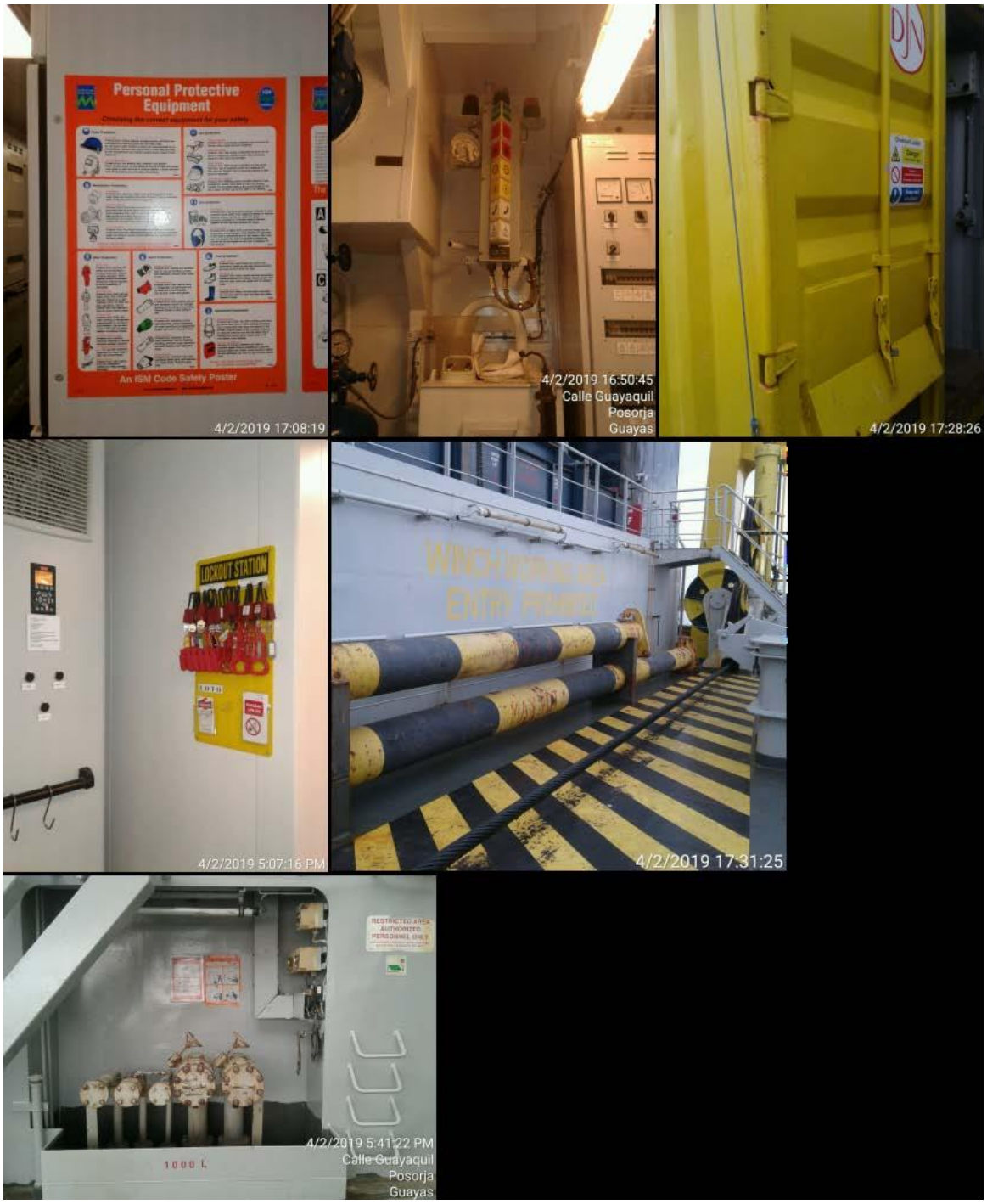
Map of the fire prevention system and extinguisher in the Navigation Bridge of the dredger.



Self-contained equipment and oxygen tanks, alarm,couplers for the wet network and anti-fire hoses distributed across the deck and work areas and sprinklers.

***Created by**: ECOSAMBITO C. LTDA*
***Location**: Pedro Alvares Cabral dredger, Posorja – Guayas, Ecuador*
***Date:** February 4, 2019*

Photographic record 5-7 Signage in the Pedro Alvares Cabral dredger



Enforceability, emergency, informative and risk area delimitation signs.

Created by: *ECOSAMBITO C. LTDA*
Location: *Pedro Alvares Cabral dredger, Posorja – Guayas, Ecuador*
Date: *February 4, 2019*

Photographic record 5-8 Spill containment equipment in the Pedro Alvares Cabral dredger

Contention tanks (1000 liters) in fuel load points on both sides of the dredger, anti-spill kits available on the deck, and hold for anti-spill instruments.

***Created by**: ECOSAMBITO C. LTDA*
***Location**: Pedro Alvares Cabral dredger, Posorja – Guayas, Ecuador*
***Date:** February 4, 2019*

5.2.7 Materials and consumables

In general, materials such as provisions and spare parts for the vessel will be transported by a project support vessel. All lifts will be carried out using approved slings, meshes, or cables, according to contractor guidelines.

For project development, the main consumable is the bunker as fuel for the dredge power systems and various oils for the lubrication of their transfer systems.

5.2.8 Maintenance

This area includes all of the repair and maintenance tasks that are necessary for the dredging to remain operative.

It includes: routine maintenance, programmed halts, daily inspections, and corrective maintenance when required.

The dredgers have an AMOS-W maintenance management program which, in addition to updating the operation records of the distinct equipment and systems, also generates alarms for the opportune execution of preventive and predictive maintenance activities.

One of the dredgers' characteristics is that it carries replacement parts aboard for the main vessel operating accessories and systems, allowing it to rapidly respond to any halting that takes place due to damage and/or loss of specifications of its parts. They also carry machinery and equipment aboard for metal mechanical and welding works.

5.2.9 Personnel

For the development of the dredging project actions, in addition to consultancy company personnel who participate in the design and auditing of the work, such as Royal Haskoning DHV -, and the project's administrative team – Project Department of YILPORTECU S.A. – and the security personnel that will offer assistance in the case of emergencies, collaborators working directly on the dredging project correspond to the crew of the dredgers and are work directly with FLANDERS DREDGING CORPORATION NV. The crew of the dredgers rotates every 6 weeks and is detailed in Table 5-6.

Table 5-6 Crew of each dredger

Position	Quantity*
Captain	1
Deck officer	3
Helmsmen	3

Boatswain	1
Engineer officer	1
Machine operator	3
Mechanic	3
Sailor	2
Electrician	1
Port machine	1
Starboard machine	1
Dredging officer	1
Cook	1
Total Crew	**23**

* Quantity per dredger

***Created by**: ECOSAMBITO C. LTDA*
***Date**: March 2019*

The dredgers operate 24 hours daily, 7 days a week, with no tide limitations, therefore rotating shifts are used for the technical and operational personnel participation.

5.2.10 Waste management

5.2.10.1 Solid waste

During the project, the solid waste that is generated should be identified and classified. It should be disposed of in the following manner:

- Common and hazardous solid waste that may be generated during the dredging operations will be managed at the Puerto Bolivar Maritime Port, by cleaning service provider companies in the port and environmental managers that have been duly registered with the Ministry of the Environment.
- Recyclable waste – mainly plastic bottles – will be manually compacted, packed, and delivered to the recycler.
- The remainder of the waste (non-recyclable and organic) is transported daily to the municipal landfill by a transporter contracted by YILPORTECU.

Photographic record 5-9 Common waste management

Management of waste from the sea in Pier no. 1: Collection and separation, weighing and registry, preparation (reduction) for delivery to the recycler.

***Created by**: ECOSAMBITO C. LTDA*
***Location**: Puerto Bolivar, Machala – El Oro*
***Date:** February 2019*

5.2.10.2 Liquid waste

During the dredging activities, the dredgers use the YILPORTECU port installations as the contact point. These offer basic services such as potable water and sanitary sewers;

However, the dredgers are autonomous vessels that do not depend on external sources to provide these services to their crew.

The dredgers that participated in phase 1 of the project contained an internal sewage treatment plant (gray and black) designed to treat and process gray and black waters to reduce contamination from sewage to below the current IMO/MARPOL thresholds. These plants have the following capacity:

i. Pedro Alvares Cabral dredger: 158.5 m^3

ii. Filippo Brunelleschi dredger: 148.8 m^3

Both dredgers have an International Sewage Pollution Prevention Certificate issued by the Grand Duchy of Luxembourg through the BUREAU VERITAS agency (see Annexes 2.4.6 and 2.5.6).

Liquid waste generated during the project implementation, such as bilge water and oily waters, is managed in the Puerto Bolivar Maritime Terminal by environmental managers registered with the regional GAD of El Oro.

5.2.10.3 Hazardous and special waste

For the proper management of hazardous and special waste, both solids and liquids, the project administration relies on the respective Registry of Generators of Hazardous Waste No. SUIA-10-2018-MAE-DPAEO-00440, and has worked on implementing daily blogs (for the management and internal transport of hazardous and special waste). However, its own Unique Manifests have yet to be adopted, but rather, it uses those generated by the authorized environmental manager. This, to some extent, is justified by the low generation of hazardous waste in the Port Terminal.

Table 5-7 Generation of hazardous waste 2018

Generation area	Waste identification			
	Name of waste*	Key*	Quantity	Unit
Maintenance (vessels)	Bilgewater	NE-05	16.13	m^3
Maintenance (vessels)	Oily waters, hydrocarbon-water emulsions, coolant waste	NE-45	19.5	m^3

*** According to the National List of hazardous substances.**

Source: *Annual Declaration of Hazardous Waste 2018 of the RGDP No. SUIA-10-2018-MAE-DPAEO-00440*
Created by*: ECOSAMBITO C. LTDA.*
Date: *March 2019*

The main hazardous waste generated by the dredger (bilgewater and oily waters) is stored in tanks within the dredger's infrastructure.

The hazardous waste delivery to the authorized manager (SERVIDASA) was carried out directly from the dredger tanks to the environmental manager's tank truck, within the Port Terminal, without using its hazardous waste storage facilities.

The SERVIDASA company is currently in the process of updating its Environmental License with the Ministry of the Environment (via request no. MAE-SOL-ART-2018-2167) and has received the APPROVAL OF THE TECHNICAL REQUIREMENTS based on Technical Report No. MAE-2018-DPAEO-000671. To offer its services to the Port Terminal, the company has operated with its current Environmental License No. 152-003-SGA-GPAO, duly registered in the Ministry of the Environment (Registration certificate no. 152 from 6 July 2010).

As for the Port Terminal, the collection of hazardous waste is carried out is three warehouses:

i. The warehouse next to Agrocalidad, where electronic and printer toner waste is stored;
ii. The warehouse for hazardous waste (adjacent to the generator area) where various solid waste products are stored (transformers, batteries, light bulbs, air filters);
iii. The collection center, where liquid waste, grease and lubricants are stored as well as solids impregnated with hydrocarbons and oil filters.

Despite having spaces designated for hazardous waste management, these do not have the required signage or suitable containers for each waste type, nor are there the necessary prevention elements, smoke detectors, fire extinguishers (see Photographic record 5-10).

During the regular cleaning and maintenance operations of the Port Terminal, certain objects are found in the sea bed near the piers, mainly metallic scrap metal, tire rims, and rubber buoys, which, given their quantity and/or size, have been deposited in the beach area next to Pier 5 (premises of SENESCYT) and should be managed as special waste (see Photographic Record 5-11).

Photographic record 5-10 Collection Center for hazardous waste in the Port Terminal

Collection of bulk air and oil filters, light bulbs, batteries, and transformers.

Exterior collection of used oils and remains of greases and lubricants, contaminated absorbent materials and drainage from filters in container tanks in the Collection Center.

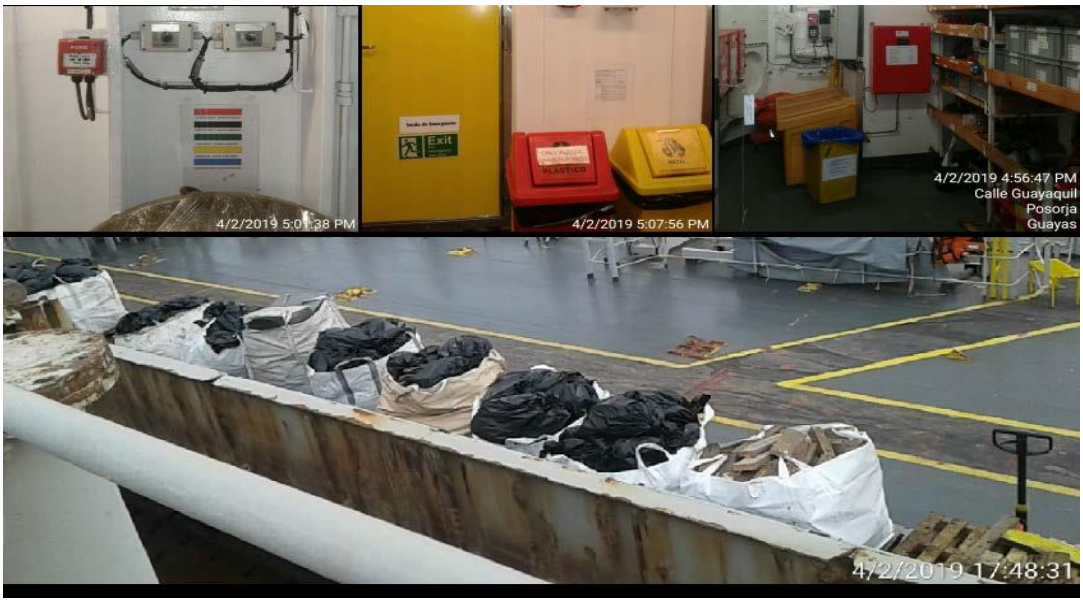
General view from outside of the Collection Center of the Port Terminal.

***Created by**: ECOSAMBITO C. LTDA.*
***Location**: Puerto Bolivar, Machala El Oro*
***Date**: March 2019*

Photographic record 5-11 Special waste

***Created by**: ECOSAMBITO C. LTDA.*
***Location**: Puerto Bolivar, Machala El Oro*
***Date:** December 2018*

Photographic record 5-12 Waste collection and classification points in the Pedro Alvares Cabral dredger



***Created by**: SAMBITO*
***Location:** Pedro Alvares Cabral dredger, Posorja – Guayas, Ecuador*
***Date:** 4 February 2019*

5.3 CHANGES MADE DURING PROJECT EXECUTION

While in Chapter 7 of the Environmental Impact Assessment, used to obtain the Environmental License for this project, the following was established:

- For the dredging of the areas adjacent to piers 1, 2, 3, 4, 5, and 6, a IHC BEAVER 6518C Dredger would be used; and the sediments of the dredging of piers 1 to 6 should be placed in the sediment pool area, located in the former plots of the ISSFA;

- For the dredging of the maneuvering area and the access channel, a TSHD-type dredger was used and the dredging sediments will be dumped in the deposit tray at high sea;

Already in the planning phase, and considering that:

- While preparatory works were being carried out to prepare the pools for the receipt of the dredging material, numerous families began to informally settle on the strip of land situated between the eastern part of pools 1 and 2 and the Bolivar Madero Vargas avenue and neighboring lands (see photographic record 5-13).
- In the "Report on the Stability and Risk Conditions" [7] prepared by the local consultancy company SurConsul, it has been declared that "the southern wall of pool no. 2 has, in its exterior part, a settlement that may be at risk due to the pool intervention, given the dumping of the dredging material, with this sector being the most sensitive; the other walls, such as the northern wall that borders pool no. 3 and the western wall that borders pool no. 1, and the eastern wall that borders an estuary in which decanted water from the pool will be dumped, have no incidence with the human settlement."
- The availability of the TSHD-type dredgers has the capacity to discharge sediments through its lower gates, thereby reducing the material's dispersion.
- The company accepts its engineering contractor's technical recommendation, ROYAL HASKONING DNV, to partially redesign the access channel.

The company decided to carry out the project using the two TSHD-type dredgers and transport 100% of the dredged settlements to the deposit tray at high sea.

[7] See Annex 3.1.5 PRJ-R133-SURCONSUL_Informe Condiciones Estabilidad – Piscina 2

[8] This specific detail was sent via notice no. YPTO-GG-0227-18 to the regional Department of the Environment of El Oro on 19 July 2018 (see Annex 1.4.7 Justification of the use of dredgers).

Photographic record 5-13 Partial view of the settlement to the east of pools 1 and 2

***Created by**: ECOSAMBITO C.LTDA.*
***Location**: Puerto Bolivar, Machala –El Oro*
***Date:** February 2019*

Furthermore:

- Via Notice No. YPTO-GG-0158-18, YILPORTECU S.A., send on 28 May 2018, the Minister of the Environment was notified of its resolution to invoke article 19 of the A.M. 061 for the Extension of the Environmental Impact Assessment.
- Via Notice No. YPTO-GG-374-18, YILPORTECU S.A., send on 21 December 2018, the Minister of the Environment was notified of its resolution to invoke article 19 of the A.M. 061 for the undertaking of a Complementary Study to the Environmental Impact Assessment (EIA) of the project and to article 18 of the A.M. 061 to carry out a new environmental regularization process for the additional dredging area (change in the layout of the Access Channel).

5.4 PERCEIVED IMPACTS ON THE PROJECT'S AREA OF INFLUENCE

The audit has the objectives of identifying the environmental impact on the area of influence and the current environmental state in the project's area of influence, mainly for its abiotic, biotic and socio-environmental components.

To do so, it uses first-hand information available from the monitoring carried out in the assessed period, whose general conclusions are presented below.

Similarly, the criteria collected from the application of semi-structured interviews with social organization leaders in the project's influence area have been included. The field records from these interviews are shown in Annex 1.3.17.

5.4.1 Air quality

From the results obtained from the air quality monitoring carried out during the evaluated period, according to the defined chronogram (quarterly), except for the January to March 2018 quarter, and whose results have been delivered to the Minister of the Environment, as part of the monthly reports of the Monitoring and Follow-up Plan, we find the following:

Table 5-8 Record of results from the air quality monitoring

	Unit	LMP*	BASELINE VALUES (Apr 2017)	May 18	June 18	Sept 18	Dec 18	March 19
Parameters			P1	P1	P1	P1	P1	P1
Carbon monoxide (CO) mean h/8h	µg/m³	10,000.00	2086.62	1412.80	2505.62	3.50	524.00	114.00
Carbon monoxide (CO)	µg/m³	30,000.00					1497.00	114.00
Nitrogen oxide (NO)	µg/m³	-					94.00	133.00
Nitrogen dioxide (NO_2)	µg/m³	200.00	11.29	12.30	11.93	5.47	94.00	94.00
Sulfur dioxide (SO_s) mean 10 min	µg/m³	500.00					125.00	125.00
Sulfur dioxide (SO_s)	µg/m³	125.00	8.9	11.75	10.76	10.78	125.00	125.00
Ozone (O_3)	µg/m³	100.00	23.56	25.69	24.94	4.18	98.00	98.00
PM_{10}	µg/m³	100.00					29.00	22.00
$PM_{2.5}$	µg/m³	50.00					19.00	8.00

*Ministerial Agreement 097A, Annex 4: Air Quality Regulation or Immissions Level, Section 4.1.2 General Regulations for criteria of environmental contaminant concentrations.

Indicates the threshold value of the accredited quantification. It should be interpreted as "less than" (<).

0.0 that exceeds the LMP* value.

***Created by**: ECOSAMBITO C.LTDA.*
***Date**: March 2019*

As seen in Table 5-8, 100% of the monitored parameters comply with the LMPs established in the Ministerial Agreement 097A, Annex 4: Air Quality Regulation or Immissions Level, Section 4.1.2 General Regulations for criteria of environmental contaminant concentrations.

All monitoring was performed in a laboratory that was duly accredited by the Ecuadorian Accreditation Service (SAE).

5.4.2 Noise

From the results obtained from the noise monitoring carried out during the evaluated period, according to the defined chronogram (quarterly), except for the January to March 2018 quarter, and whose results have been delivered to the Minister of the Environment, as part of the monthly reports of the Monitoring and Follow-up Plan, we find the following:

Table 5-9 Record of results from the environmental noise monitoring

Monitoring period:				***May 18***				***June 18***				***Sept 18***				***Dec 18***				***March 19***			
Parameter	**LMP* ID3**	**LMP* CM**	**LMP****	**P1**	**P2**	**P3**	**P4**	**P1**	**P2**	**P3**	**P4**	**P1**	**P2**	**P3**	**P4**	**P1**	**P2**	**P3**	**P4**	**P1**	**P2**	**P3**	**P4**
Specific Noise Lkeq= LE Db (A)	**70**	**60**	**85**	**60.6**	**66.8**	**78.7**	**82.3**	**71.5**	**68.7**	**76.5**	**56.5**	**62.1**	**64.3**	**69.3**	**63**	**64**	**65**	**54**	**-**	**68**	**69**	**-**	**-**

*Ministerial Agreement 097A, Annex 5: Maximum Levels of Noise Emissions and Methodology of measurement for fixed and mobile sources, Table 1: Maximum Levels of Noise Emission (Lkeq) for Fixed Noise Sources.

** Regulation on Worker Health and Safety and Improvement of the Work Environment, Art. 55 Noise and Vibrations

0.0 If the result exceeds the LMP*

0.00 If the result exceeds the LMP*

-- There are no conditions to quantify the Lkeq of the source (when the difference between the LAeq,rp – LASeq,rp is lower than 3 dB under conditions of lower residual noise).

***Created by**: ECOSAMBITO C.LTDA.*
***Date**: March 2019*

As observed in Table 5-9, 68% of the monitored parameters in all of the monitoring points comply with the LMPs that have been established in the Ministerial Agreement 097-A, Annex 5: Maximum Levels of Noise Emission and Methodology of measurement for Fixed and Mobile Sources, Table 1: Maximum Levels of Noise Emission (Lkeq) for Fixed Noise Sources; although 100% of the measurements comply with the Regulation on Worker Health and Security and Improvement of the Work Environment, Art. 55 Noise and Vibrations. However, it is important to note that 2 of the 5 non-compliances presented are situated outside of the Port Terminal (p.4 Cabotage Pier), and correspond to an area of heavy human traffic and intensive use of very high volume speakers in bars and restaurants.

All of the monitoring was carried out in a laboratory that the SAE duly accredited.

5.4.3 Water quality

From the results obtained from the water quality monitoring carried out during the evaluated period, according to the defined chronogram (quarterly), except for the January to March 2018 quarter, and whose results have been delivered to the Minister of the Environment, as part of the monthly reports of the Monitoring and Follow-up Plan, we find the following:

Table 5-10 Record of results from water quality monitoring from the Santa Rosa estuary

Monitoring Period			BASELINE VALUES (April 17)						Mar 18						April 18						May 18					
Parameter	**Unit**	**LMP**	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**
pH		9.5							8.23	8.31	8.24	8.55	8.4	8.03	7.96	8.03	8.1	8.32	8.17	8.03	7.86	7.87	7.8	7.38	7.53	6.76
Conductivity	uS/cm								35100	33700	33400	28000	30900	33400	45000	42700	42400	43900	43600	45900	44500	45100	45400	35900	47000	47100
Temperature	ºC								28.6	28.9	28.5	29.9	29	28.5	26.1	27.2	28.1	27.1	26.6	25.1	27.1	27	27	29.9	27.4	26.4
Dissolved oxygen	mg/l		5.17	4.65	5.93	6.32	6.64	6.64	7.1	7.4	6.8	8	7.8	4.4	8	8.3	8.6	8.3	8.7	6.7	7.2	6.9	7	8.2	8.3	7.7
Oxygen saturation	%	60							91.9	96.4	88.9	100	100	56.3	101.9	102.7	109.9	105.2	108.1	82.9	91.8	88.4	91	100	97	97.4
SST	mg/l		106	87	66	93	182	182	15	8	163	11	55	97	89	150	53	46	220	237	14	12	16	15	13	68
Ammonium	mg/l	0.4							0.14	0.1	0.24	0.06	0.09	0.1	0.13	0.14	0.13	0.08	0.1	0.11	0.15	0.14	0.12	0.12	0.07	0.19
Ammon. as ammoniac	mg/l	0.4	0.06	0.036	0.036	0.036	0.036	0.036	0.13	0.09	0.23	0.06	0.08	0.09	0.12	0.14	0.12	0.07	0.1	0.1	0.14	0.14	0.11	0.11	0.07	0.18
Oils and greases	mg/l	0.3	0.44	0.44	0.44	0.44	0.44	0.44	0.8	0.3	0.6	0.6	0.6	1.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.04	0.3	0.8	1
DBO	mg/l		9.12	19	18	20	17	17	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
DQO	mg/l		18	36	34	40.2	32	32	50	50	50	50	50	50	50	50	50	90	50	90	50	50	50	50	50	50
HTP	mg/l	0.5	0.04	0.04	0.04	0.04	0.04	0.04	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Surfactant detergent	mg/l	0.5	0.027	0.045	0.016	0.045	0.045	0.045	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.17	0.08	0.06	0.03	0.05	0.02	0.02
Fecal coliforms	nmp/100		2	2	1	2	5	5	430	930	430	40	430	230	230	430	430	230	230	230	90	30	40	30	430	150
Arsenic	mg/l	0.5	0.0031	0.0031	0.0031	0.0031	0.0031	0.0031	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0055	0.0012	0.0012	0.0011	0.0012	0.0055
Cadmium	mg/l	0.005	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0011	0.0001	0.0001	0.0001	0.0001	0.0011
Copper	mg/l	0.005	0.0037	0.003	0.0037	0.0037	0.0037	0.0037	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.02	0.005
Total chrome	mg/l	0.05	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0031	0.0002	0.0002	0.0002	0.0002	0.0056
Iron	mg/l	0.3	0.0047	0.0047	0.0047	0.0047	0.0047	0.0047	0.02	0.02	0.02	0.02	0.02	0.02	2.1	1.1	1.1	1.1	1.2	0.8	0.04	0.2	0.2	0.21	0.26	2.5
Mercury	mg/l	0.0001	0.005	0.005	0.005	0.005	0.005	0.005	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tot. organochlorines	mg/l	0.01	--	--	--	--	--	--	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tot. organophosphates	mg/l	0.01	--	--	--	--	--	--	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Organonitrogenates**	mg/l		--	--	--	--	--	--	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Carbamates**	mg/l		--	--	--	--	--	--	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005

*Ministerial Agreement 097A, Annex 1: Regulation on Environmental Quality and Effluent Discharge to Water Resources, Table 2: Admissible Quality Criteria for the preservation of aquatic and forest life in Fresh and Marine Waters and Estuaries.

**Largest value detected by type of pesticide.

Indicates the threshold value of the accredited quantification. Should be interpreted as "less than" (<).

0.0 If the result exceeds the LMP.

Monitoring Period			Aug 18						Nov 18						Dec 18						Feb 19					
Parameter	**Unit**	**LMP**	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**
pH		9.5													8.28	8.20	8.30	8.15	8.25	8.25	8.18	8.21	8.25	8.27	7.97	7.64
Conductivity	uS/cm		81100	81200	77000	81000	82700	81900	44400	44700	44800	43900	44900	45000	44400	44700	44800	43900	44900	45000	38300	37900	37400	44500	35200	35000
Temperature	ºC		24.4	24.4	23.4	23.9	23.8	26.1	27	26.9	26.9	26.3	27.3	26.3	26.9	26.9	26.9	26.2	27.1	26.2	30.6	30.1	30.5	28.6	29.2	29
Dissolved oxygen	mg/l		6.4	6.6	6.3	6.6	6.6	7	7.4	7.6	7.8	7.9	7.8	7.7	7.4	7.6	7.8	7.9	7.8	7.7	7.9	7.4	7.5	8.2	7.5	7.3
Oxygen saturation	%	60	94	96.4	92.3	96	96.3	100	93.2	97	98.2	99.4	98.8	96.5	93.2	97	98.2	99.4	98.8	96.5	101.5	101.1	101.4	108.6	99.3	95.6
SST	mg/l		29	49	43	73	66	99	159	151	170	203	127	174	157	168	230	183	188	177	123	100	100	121	91	88
Ammonium	mg/l	0.4	0.09	0.13	0.11	0.07	0.06	0.07	0.17	0.11	0.16	0.12	0.11	0.13	0.03	0.02	0.44	0.03	0.03	0.03	0.19	0.04	0.1	0.04	0.06	0.11
Ammon. as ammoniac	mg/l	0.4	0.08	0.13	0.1	0.07	0.06	0.07	0.16	0.11	0.15	0.11	0.1	0.12	0.03	0.02	0.42	0.02	0.03	0.03	0.18	0.03	0.1	0.04	0.06	0.1
Oils and greases	mg/l	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
DBO	mg/l		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
DQO	mg/l		50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
HTP	mg/l	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Surfactant detergent	mg/l	0.5	0.03	0.03	0.04	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.06	0.04	0.04	0.03	0.08	0.05	0.11
Fecal coliforms	nmp/100		40	30	230	70	230	30	90	30	30	230	40	40	430	230	430	230	230	230	150	230	430	30	750	230
Arsenic	mg/l	0.5	0.025	0.025	0.025	0.025	0.025	0.025	0.005	0.005	0.008	0.005	0.005	0.005	0.0036	0.0026	0.0043	0.0036	0.0025	0.0035	0.005	0.005	0.005	0.005	0.005	0.005
Cadmium	mg/l	0.005	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.001	0.001	0.001	0.001	0.001	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.001	0.001	0.001	0.001	0.001	0.001
Copper	mg/l	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.035	0.026	0.021	0.005	0.028	0.01	0.008	0.005	0.008	0.005	0.006	0.05	0.05	0.05	0.05	0.05	0.05
Total chrome	mg/l	0.05	0	0.01	0.01	0.01	0.01	0.01	0.0035	0.0002	0.001	0.002	0.002	0.002	0.0022	0.0002	0.0002	0.0002	0.0002	0.0002	0.002	0.002	0.002	0.002	0.002	0.002
Iron	mg/l	0.3	0.3	0.3	0.3	0.3	0.3	0.41	0.36	0.24	0.2	0.35	0.2	0.2	0.49	0.78	1.8	2.00	0.76	0.68	0.2	0.2	0.2	0.2	0.2	0.2
Mercury	mg/l	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.001	0.001	0.001	0.001	0.001	0.001
Tot. organochlorines	mg/l	0.01	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tot. organophosphates	mg/l	0.01	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Organonitrogenates**	mg/l		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002
Carbamates**	mg/l		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001	0.001	0.001

*Ministerial Agreement 097A, Annex 1: Regulation on Environmental Quality and Effluent Discharge to Water Resources.
**Largest value detected by type of pesticide.
Indicates the threshold value of the accredited quantification. Should be interpreted as "less than" (<).

0.0 If the result exceeds the LMP.

***Created by**: ECOSAMBITO C.LTDA.*
***Date:** March 2019*

Each monitoring carried out consisted of 86 parameters: 5 field, 1 physical-chemical, 2 anion, and non-metals, 5 organic, 1 microbiological, 6 total metals, 27 organochloride, 15 organophosphate, 18 organonitrogen, and 6 carbamate parameters.

Let's consider the 6 monitoring points, given that 6 monitoring operations were carried out during the assessment period (corresponding to March, April, May, August and November 2018 and February 2019). We reach a total of 3096 measurements taken. From these, only 36 of the results (1.16%) Did Not Comply with the LMPs from Table 2 of Annex 1 of Book VI of the Unified Text of Secondary Legislation of the Ministry of the Environment, issued via Ministerial Agreement 097A, and 98.84% Complied or did not have LMPs established in the cited regulation.

Generally speaking, the parameters that were not within the Permissible Limits are: iron, copper and oils, and greases. It should also be noted that in this project, these elements have not been "dumped", but rather, they form a part of the body of water.

All of the monitoring was carried out by a laboratory that the SAE has duly accredited.

5.4.4 Sediments

From the results that were obtained from the sediment monitoring during the assessment period, according to the defined chronogram (monthly during the dredging operations and quarterly during the periods of no dredging operations), and whose results have been sent to the Ministry of the Environment as part of the monthly reports on the Monitoring and Follow-up Plan, we find the following:

Table 5-11 Record of results of the sediment monitoring

MONITORING PERIOD:			BASELINE VALUES (April 2017)							March 18							Apr 18							May 18						
Parameter	**LMP***	**LMP****	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**
pH	(6,8)		7.90	8.14	8.14	7.99	8.00	8.21	-	8.00	8.30	8.70	8.70	8.40	8.40	8.80	8.70	8.70	8.10	8.60	8.00	8.70	8.40	8.30	8.40	8.40	8.60	8.90	8.60	8.60
HTP	150.00		1103.00	1131.00	1131.00	1256.00	1090.00	1005.00	-	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Arsenic	12.00	7.24	0.60	1.70	0.60	1.60	0.60	0.60	-	9.70	7.00	4.80	4.20	2.30	7.00	4.50	8.20	14.00	11.00	12.00	6.90	4.00	8.70	12.00	11.00	9.70	9.80	8.30	11.00	6.10
Cadmium	0.50	0.70	1.00	1.00	2.00	2.00	1.00	1.00	-	0.30	0.20	0.05	0.03	0.03	0.24	0.08	0.10	0.20	0.20	0.07	0.10	0.08	0.10	0.20	0.30	0.20	0.10	0.10	0.20	0.05
Copper	25.00	18.70	15.00	9.00	8.00	9.00	11.00	10.00	-	26.00	21.00	6.20	1.80	3.00	17.00	12.00	15.00	34.00	30.00	21.00	22.00	8.10	26.00	33.00	33.00	32.00	17.00	45.00	22.00	6.80
Total chrome	54.00	52.30	23.00	17.99	20.00	15.00	19.00	17.00	-	26.00	21.00	10.00	7.50	7.60	20.00	14.00	17.00	32.00	30.00	21.00	22.00	8.70	9.80	32.00	31.00	29.00	19.00	28.00	26.00	9.20
Iron			>500	>500	>500	>500	>500	>500	-	1.90	1.70	1.40	1.30	0.70	1.60	1.50	1.80	3.00	2.60	2.70	2.00	0.90	1.50	2.50	2.50	2.30	2.20	2.30	2.20	1.60
Mercury	0.10	0.13	0.26	0.26	0.26	0.26	0.26	0.26	-	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lead	19.00	30.20	10.30	12.60	12.60	7.10	6.50	9.70	-	13.00	11.00	7.50	6.20	3.80	9.70	8.20	6.50	12.00	11.00	9.10	7.40	3.80	5.70	12.00	12.00	11.00	8.50	9.00	9.80	5.90
Organochlorines***			-	-	-	-	-	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Dieldrin		0.00071	-	-	-	-	-	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Endrin		0.00267	-	-	-	-	-	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Heptachlor		0.00060	-	-	-	-	-	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
pp' DDE		0.00200	-	-	-	-	-	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
pp' DDT		0.00110	-	-	-	-	-	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
pp' DDD		0.00120	-	-	-	-	-	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Organophosphates***			-	-	-	-	-	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Organonitrogenates***			-	-	-	-	-	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Pyrethrins*			-	-	-	-	-	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Carbamates**			-	-	-	-	-	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

*Ministerial Agreement 097A, Annex 2: Regulation on Environmental Quality of Soil Resources and Clean-up Criteria for Contaminated Soil, Table 1: Soil Quality Criteria.
**Canadian Environmental Quality Guidelines (Canadian Environmental Guideline Values for Bodies of Water)
***Largest value detected by type of pesticide.
Indicates the threshold value of the accredited quantification. Should be interpreted as "less than" (<).
0.0 If the result exceeds the LMP*
0.0 If the result exceeds the LMP**

MONITORING PERIOD:			Aug 18							Nov 18							Feb 19						
Parameter	LMP*	LMP**	P1	P2	P3	P4	P5	P6	P7	P1	P2	P3	P4	P5	P6	P7	P1	P2	P3	P4	P5	P6	P7
pH	(6,8)		8.40	8.70	8.80	8.90	8.70	8.50	8.20	8.20	8.50	8.80	9.00	8.70	8.40	8.00	8.40	8.50	8.90	8.60	8.20	8.30	6.30
HTP	150.00		50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Arsenic	12.00	7.24	7.80	8.70	7.30	7.30	5.60	8.30	4.50	13.00	12.00	9.90	8.40	11.00	11.00	11.00	4.90	4.90	5.50	5.00	6.90	2.50	7.90
Cadmium	0.50	0.70	0.16	0.20	0.06	0.04	0.09	0.10	0.03	0.30	0.10	0.10	0.05	0.20	0.20	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Copper	25.00	18.70	24.00	24.00	12.00	12.00	14.00	19.00	5.90	39.00	31.00	34.00	16.00	35.00	31.00	27.00	16.00	12.00	7.00	7.20	7.00	4.60	16.00
Total chrome	54.00	52.30	25.00	25.00	13.00	13.00	16.00	21.00	7.80	34.00	29.00	30.00	12.00	36.00	30.00	24.00	18.00	11.00	9.00	10.00	10.00	7.40	16.00
Iron			2.20	2.30	1.60	1.80	1.50	1.90	1.30	3.10	2.70	2.80	2.10	2.90	2.50	2.30	2.10	1.30	1.70	1.40	1.70	0.70	2.30
Mercury	0.10	0.13	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Lead	19.00	30.20	8.70	9.30	5.50	6.40	5.80	7.90	4.90	14.00	12.00	12.00	8.20	13.00	11.00	11.00	7.70	5.30	4.90	4.20	4.70	2.50	9.10
Organochlorines***			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Dieldrin		0.00071	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Endrin		0.00267	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Heptachlor		0.00060	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
pp' DDE		0.00200	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
pp' DDT		0.00110	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
pp' DDD		0.00120	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Organophosphates***			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Organonitrogenates***			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Pyrethrins*			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Carbamates**			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

*Ministerial Agreement 097A, Annex 2: Regulation on Environmental Quality of Soil Resources and Clean-up Criteria for Contaminated Soil, Table 1: Soil Quality Criteria.
**Canadian Environmental Quality Guidelines (Canadian Environmental Guideline Values for Bodies of Water)
***Largest value detected by type of pesticide.
Indicates the threshold value of the accredited quantification. Should be interpreted as "less than" (<).
0.0 If the result exceeds the LMP*
0.0 If the result exceeds the LMP**

Created by: *ECOSAMBITO C.LTDA.*
Date: *March 2019*

Each conducted monitoring procedure covers a total of 73 parameters: 1 parameter for aqueous extraction, 7 for dry-weight metal compounds, 1 for dry-weight organic compounds, 26 for wet-weight organochlorine compounds, 16 for wet-weight organophosphorus compounds, 16 for wet-weight organonitrogen compounds, and 6 for carbamates.

Considering the 7 monitoring sites and the fact that 6 monitoring procedures have been conducted in the assessed period (pertaining to March, April, May, August, and November of 2018, and February of 2019), the total number of conducted measurements amounts to 3,066. Of the above, only 54 results (1.76% of the total) do not meet the maximum allowable limits (MALs) laid down in Table 1. Soil Quality Criteria from Annex 2. of the Unified Text on Subsidiary Legislation of the Ministry of Environment issued by means of Ministerial Resolution 097-A.; and 30 results (0.98% of the total) do not meet the MALs laid down in the Canadian Environmental Quality Guidelines; moreover, 2,982 results (97.26%) meet the MALs or do not present a defined MAL in the above regulations.

A laboratory duly accredited by SAE conducted all monitoring procedures.

5.4.5 Bioassays on shrimp mortality rate

Based on results gathered from bioassays on shrimp mortality rate conducted in the assessed period– as per the stipulated (monthly) schedule–which have been entered in the Ministry of Environment as part of the Monitoring and Tracking Plan monthly reports, the following table has been drawn:

Figure 5-10 Survival Rate Summary (population % by the time of exposure)

SURVIVAL RATE (POPULATION %) 24, 48, 72 AND 96 HOURS AFTER EXPOSURE							
Assmt. month	**Station**	**Concentration of SSD**	**No. of Post-larvae**	**Survival rate (population % by the time of exposure)**			
				24 hours	**48 hours**	**72 hours**	**96 hours**
Mar.-18	**AVERAGE ADI-AD6**	0%	10	100%	100%	100%	**100.0%**
		10%	10	100%	100%	100%	**100.0%**
		50%	10	100%	98%	95.00%	**90.8%**
		100%	10	100%	98%	89.10%	**80.8%**
Apr.-18	**AVERAGE ADI-AD6**	0%	10	100%	100%	100%	**100.0%**
		10%	10	100%	100%	100%	**100.0%**
		50%	10	100%	99%	90.00%	**89.0%**
		100%	10	100%	98%	89.00%	**85.0%**
May-18	**AVERAGE ADI-AD6**	0%	10	100%	100%	100%	**100.0%**
		10%	10	100%	100%	96.0%	**93.0%**
		50%	10	100%	100%	95.00%	**92.0%**
		100%	10	100%	100%	97.00%	**91.0%**
June-18	**AVERAGE ADI-AD6**	0%	10	100%	100%	100%	**100.0%**
		10%	10	100%	100%	100.0%	**100.0%**
		50%	10	100%	100%	96.00%	**92.0%**
		100%	10	100%	98%	91.00%	**89.0%**
July-18	**AVERAGE ADI-AD6**	0%	10	100%	100%	100%	**100.0%**
		10%	10	100%	100%	100.0%	**100.0%**
		50%	10	100%	100%	95.00%	**90.0%**

SURVIVAL RATE (POPULATION %) 24, 48, 72 AND 96 HOURS AFTER EXPOSURE							
Assmt. month	**Station**	**Concentration of SSD**	**No. of Post-larvae**	**Survival rate (population % by the time of exposure)**			
				24 hours	**48 hours**	**72 hours**	**96 hours**
		100%	10	100%	95%	90.00%	**85.0%**
Aug.-18	**AVERAGE ADI-AD6**	0%	10	100%	100%	100%	**100.0%**
		10%	10	100%	100%	100.0%	**100.0%**
		50%	10	100%	100%	97.00%	**90.0%**
		100%	10	100%	95%	93.00%	**88.0%**
Sep.-18	**AVERAGE ADI-AD6**	0%	10	100%	100%	100%	**100.0%**
		10%	10	100%	100%	100.0%	**100.0%**
		50%	10	100%	100%	100.00%	**93.0%**
		100%	10	100%	100%	91.00%	**88.0%**
Oct.-18	**AVERAGE ADI-AD6**	0%	10	100%	100%	100%	**100.0%**
		10%	10	100%	100%	100.0%	**100.0%**
		50%	10	100%	100%	95.80%	**91.7%**
		100%	10	100%	100%	93.30%	**87.5%**
Nov.-18	**AVERAGE ADI-AD6**	0%	10	100%	100%	100%	**100.0%**
		10%	10	100%	100%	100.0%	**100.0%**
		50%	10	100%	100%	99.20%	**91.7%**
		100%	10	100%	100%	97.50%	**88.2%**
Jan.-19	**AVERAGE ADI-AD6**	0%	10	100%	100%	100%	**100.0%**
		10%	10	100%	100%	100%	**100.0%**
		50%	10	100%	100%	98.33%	**93.3%**
		100%	10	100%	100%	95.33%	**89.2%**
Feb.-19	**AVERAGE ADI-AD6**	0%	10	100%	100%	100%	**100.0%**
		10%	10	100%	100%	100%	**100.0%**
		50%	10	100%	100%	97.50%	**93.3%**
		100%	10	100%	100%	93.33%	**90.0%**
Mar.-19	**AVERAGE ADI-AD6**	0%	10	100%	100%	100%	**100.0%**
		10%	10	100%	100%	100%	**100.0%**
		50%	10	100%	100%	98.33%	**94.2%**
		100%	10	100%	100%	93.33%	**90.0%**
Mar.-18 to Mar.-19	**AVERAGE ADI-AD6**	0%	10	100%	100%	100%	100%
		10%	10	100%	100%	100%	99%
		50%	10	100%	100%	96%	92%
		100%	10	100%	99%	93%	88%

Prepared by: *ECOSAMBITO C.LTDA.*
Date: *March 2019*

Based on the results of median lethal concentration assessments (CL50-96) of suspended sediments from dredging activities in shrimp post-larvae (*Litopenaeus vannamei*) conducted monthly in the 6 monitoring sites throughout the access canal to Puerto Bolívar during the assessed 2019 period (from March 2018 to March 2019, with the exception of December 2018), it was concluded that the treatment procedures carried out in 50% and 100% concentrations of SSD were not toxic, which minimizes the chances of future problems arising not only in relation to shrimp farming management protocols on various aquaculture production units settled in the areas of influence, but also in the

normal development of fishing activities in the Traditional Fishing Sector in El Oro province.

Survival rates of *Litopenaeus vannamei* post-larvae after 96 hours of exposure were 100% for 0% SSD treatment, 99% for 10%, 92% for 50% and 88% for 100% SSD. This shows an average mortality rate of 8% for a 50% treatment, and 12.00% for a 100% SSD treatment. The above results show a very low mortality rate compared to the assessments carried out by Villamar (2002), whose results showed a 15% mortality rate, to which he concluded that there is no negative effect on shrimp larvae with sediment extracted from Estero Salado in the access canal to Puerto Marítimo de Guayaquil; Ramos and Bastidas (2013) where 10% mortality rates were obtained; Valarezo (2014) with an 11.75% rate; Valarezo (2015) with 22.3%; and Valarezo (2017) with 17.0% mortality rate for 100% SSD treatment, which leads to the conclusion that the presence of suspended sediments from dredging activities in the access canal to Puerto Bolívar has a minor impact on mortality.

Therefore, it is reasonable to conclude that there was no significant impact on the shrimp larvae's biological conditions *(Litopenaeus vannamei*) that were used and exposed to extreme conditions in the presence of suspended sediments at the laboratory scale; within a fixed timeframe and with an uninterrupted 96-hour exposure. Dredging simulation results showed that, in real-time, this activity does not directly affect marine biodiversity. Likewise, it is evident that the impact assessed so far does not pose a risk to marine biodiversity or marsh water quality, nor does it threaten the shrimp farming or fishing sectors in the area of influence.

Throughout this ecotoxicological assessment and the different treatment procedures carried out with *Litopenaeus vannamei* shrimp post-larvae exposed to different concentrations of suspended sediments from dredging activities (SSD), a few observations were made showing a lack of any significant findings, including a mild presence of 0-degree red uropods, black stomach content as a result of organic matter rumination and very few larvae in empty intestines, regular exoskeleton placement, high activity levels, regular swimming with no signs of stress, given the concentration and presence of high amounts of suspended solids, which is why it is considered an indication of normal development for bioaquatic species.

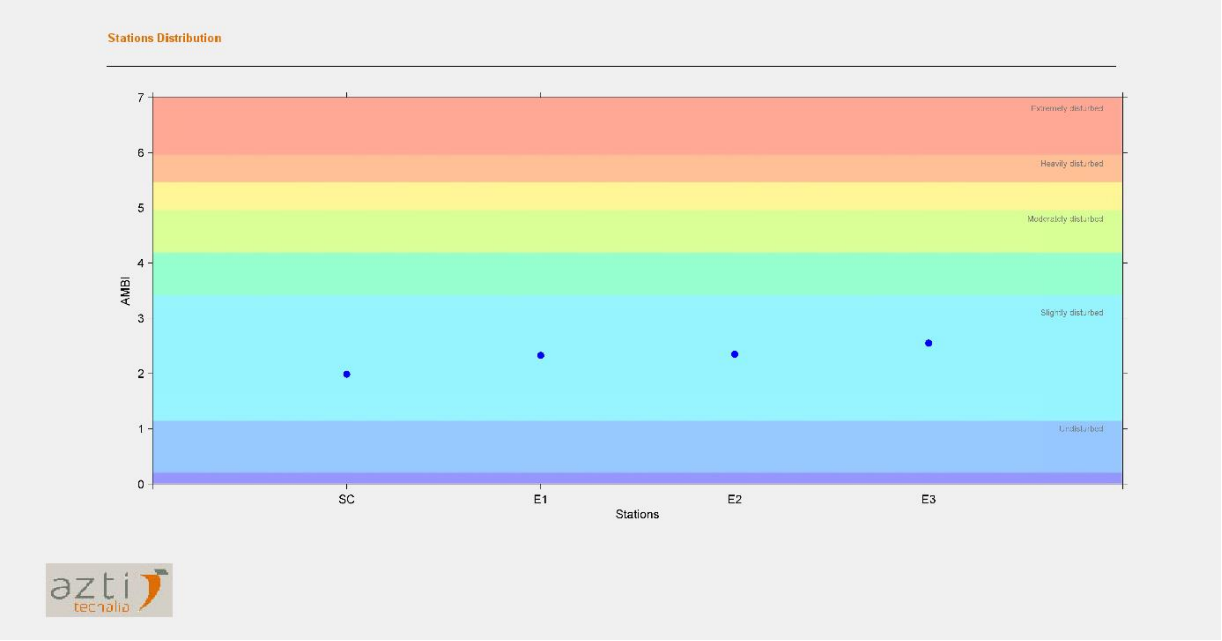
Water quality monitoring procedures at sampling sites indicated that the dissolved oxygen present in the marsh is within acceptable parameters; this was confirmed by the *"in situ"* parameter sampling of suspended sediments from dredging activities (SSD), whose values decreased due to the presence of suspended solids—which is otherwise acceptable for the normal development of bioaquatic species—that were related to those in the natural environment without causing any impact on marine biodiversity.

5.4.6 Phytoplankton and zooplankton species monitoring

Even though zooplankter abundance and distribution varies in each monitoring site and from one monitoring procedure to the other, according to estimated index values obtained by entering data of collected live benthic organisms into the AMBI-AZTI[9] software, it can be concluded that the analyzed stations are slightly disturbed, although to a lesser extent in the area near Isla Santa Clara, but with increasing intensity towards the inner marsh. This can be directly related to the intensity of anthropogenic activity in Estero Santa Rosa and its variations as one moves away towards the open sea, among which are port activities, traditional fishing, and shrimp farming logistics.

Figure 5-10 shows specific results obtained in February 2019 for reference purposes.

Figure 5-11 AMBI index result, Azti Marine Biotic Index, 25 February 2019



Source: Monitoreo de Diversidad Biológica Laboratorio Gruntec Cía. Ltda.
Prepared by: ECOSAMBITO C. Ltda.
Location: Parroquia Puerto Bolívar, Machala – El Oro
Date: 25 February 2019

5.4.7 Bioaquatic species monitoring

The conditions for carrying out these monitoring procedures were agreed upon with the representatives of the three associations involved prior to their realization to ensure their engagement and participation in the monitoring plan.

[9] AMBI is a tool designed by the AZTI Technological Center to assess the quality of benthic macroinvertebrates communities by calculating the namesake index.

Based on biological descriptors of bivalve mollusks collected in monitoring procedures–for 1 hour by an experienced individual–pursuant to the Sustainable Use and Mangrove Safekeeping Agreements between associations "Estero Porteño", "Vikingos del Mar" and "La Playita" within the project area of influence, the mud pampas in Isla del Amor sector are regarded as high productivity areas, which would be associated with their primary productivity and low-gradient, broad intertidal zone, a favorable situation for these organisms.

It is concluded that, despite their close proximity to a largely populated hub, mangroves have high productivity levels and are in a good state of preservation.

5.4.8 Flora and fauna monitoring

For all sampling procedures, preserved marine wildlife encompasses every life form protected under the Ecuadorian jurisdiction and international conventions entered into by the Ecuadorian State in relation to protected marine fauna, namely: The International Whaling Commission, the Convention on Biological Diversity and the Convention on Migratory Species.

However, of the conducted monitoring procedures, the only species of marine fauna interacted with have been sea lions *Otaria flavescens* in the sector next to Santa Clara, spotted near the fishing nets used for monitoring purposes (standardized fishing).

5.4.9 Interviews on the perceived impact

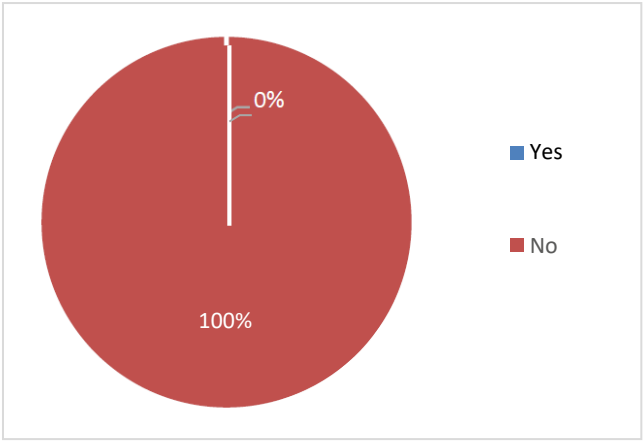
Three social actors and leaders of community organizations were interviewed at the project area of influence through a semi-structured interview guide.

Below are the results gathered from the conducted interviews:

i. 100% of the interviewees are representatives of a social organization within the project area of influence.

ii. 100% of the interviewees perceive noises at night associated with the operating dredging vessel, although the same interviewees describe that noise as low yet constant. In other words, the generated noise is only identifiable once other noise sources in the area have ceased.

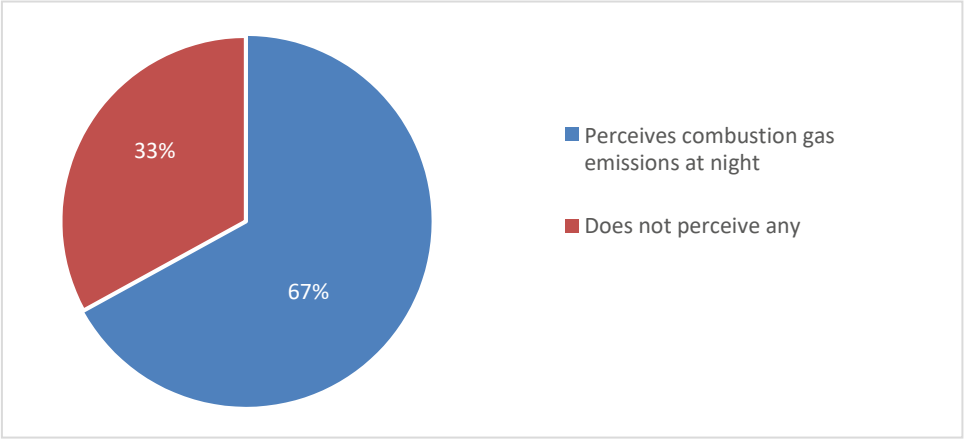
Figure 5-12 Do you consider that dredging activities generate ambient noise?



Prepared by: ECOSAMBITO C. Ltda.
Location: Parroquia Puerto Bolívar, Machala – El Oro
Date: April 2019

iii. 67% of the interviewees perceive gas emissions associated with the passage of the dredging vessel in front of their corresponding licensed areas and describe it as being similar to the emissions of other vessels arriving at the port terminal.

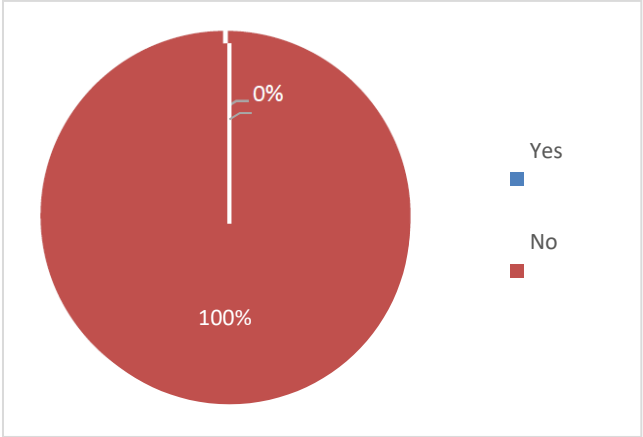
Figure 5-13 Do you consider that the project releases gas emissions into the atmosphere?



Prepared by: ECOSAMBITO C. Ltda.
Location: Parroquia Puerto Bolívar, Machala – El Oro
Date: April 2019

iv. 100% of the interviewees state that they do not perceive any impact on the marsh's water body due to wastewater or hazardous substances from the dredging vessels.

Figure 5-14 Do you consider that the dredging activities generate waste water discharges and hazardous waste?

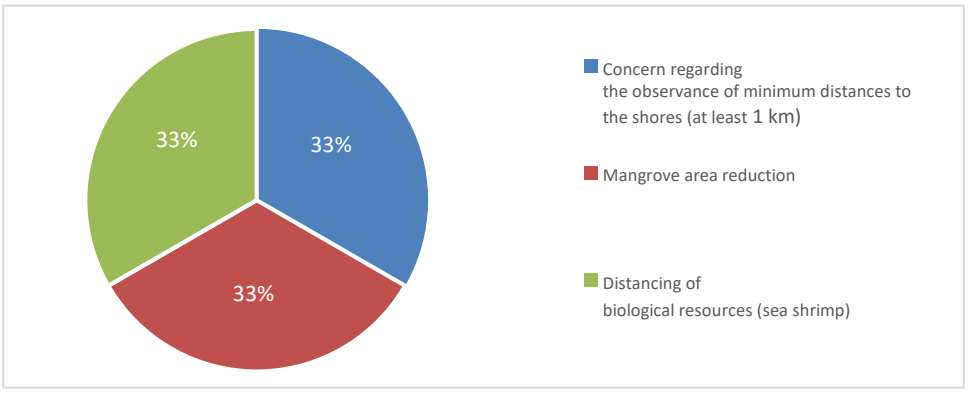


Prepared by: ECOSAMBITO C. Ltda.
Location: Parroquia Puerto Bolívar, Machala – El Oro
Date: April 2019

v. The following results have been obtained regarding the perception of impacts or effects generated by the project activities (see Figure 5-12):

- 33% of the interviewees expects that minimum distances to the shore (at least 1 km) are observed so that their community territories are not affected.
- 33% of the interviewees reports a reduction in their mangrove area, and they associate it with the effects of dredging activities.
- 33% of the interviewees report distancing biological resources–particularly of the sea shrimp–as of the commencement of dredging activities.

Figure 5-15 Environmental impact perception

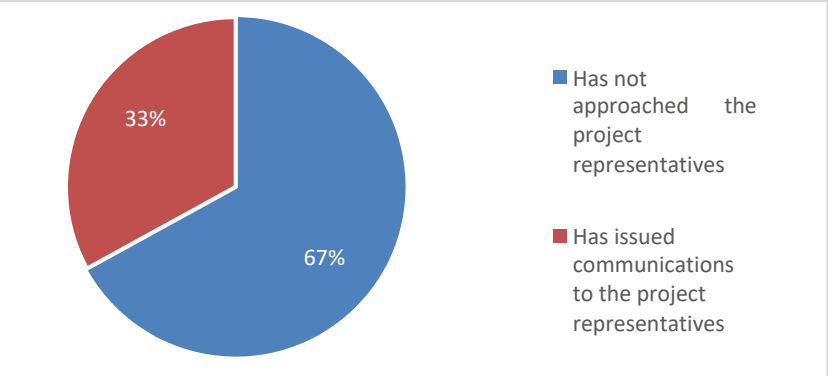


Prepared by: ECOSAMBITO C. Ltda.
Location: Parroquia Puerto Bolívar, Machala – El Oro
Date: April 2019

vi. 67% of the interviewees declare not having approached the project administration or having issued communications on behalf of their represented parties, whilst 33% of

the interviewees states having issued meeting requests to the project administration without receiving any formal response on their end.

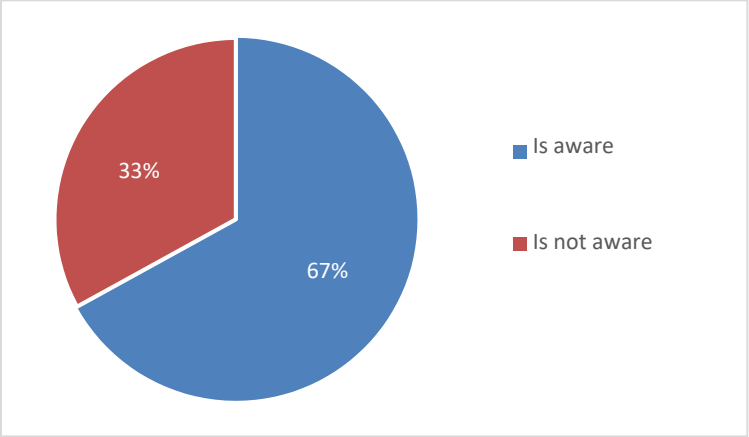
Figure 5-16 Have you approached the project representatives or issued communications to them?



Prepared by: ECOSAMBITO C. Ltda.
Location: Parroquia Puerto Bolívar, Machala – El Oro
Date: April 2019

vii. 67% of the interviewees have participated in the social engagement process carried out by the project administration prior to obtaining their environmental permit.

Figure 5-17 Are you aware of the environmental permit granted for the project?



Prepared by: ECOSAMBITO C. Ltda.
Location: Parroquia Puerto Bolívar, Machala – El Oro
Date: April 2019

CHAPTER 6. METHODOLOGY

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6 METHODOLOGY FOR PREPARING THE ENVIRONMENTAL AUDIT

The AAC procedure generally involves following the steps below:

i. Identifying the sources of information.

ii. Selecting the environmental indicators to be assessed.

iii. Analyzing monitoring results.

iv. Describing the overall current state of the audited project and its socio-environmental surroundings.

v. Broadly identifying the activities or sectors showing adverse environmental impacts.

vi. Verifying compliance with the law and the Environmental Management Plan.

vii. Updating the Environmental Management Plan if necessary.

6.1 METHODOLOGY

The environmental compliance auditing process, in accordance with the outlined specific goals, shall be based on ensuring compliance with the Environmental Management Plan, the environmental legislation in force, and obligations in the Environmental Permit; and shall be realized in three phases:

i. Pre-auditing: it entails the documentary inspection prior to the field inspection.

ii. Field inspection: visit and verification of the facilities aboard the available dredging vessels.

iii. Post-auditing: it involves the preparation of reports and recommendations.

These stages are regarded as sequential and involve a series of activities before implementing future actions, and, according to the established legal agreements, they must be unavoidably complied with.

Due to the fact that the sediment disposal site for this dredging project is located under Estero Santa Rosa and Canal de Jambelí waters, it will be impossible to verify the existence of environmental liabilities or other forms of noncompliance, although an inspection of the dredging vessels is advised in order to determine their operating conditions and those of port facilities associated with the project, including pier facilities for emergency assistance and sedimentation basins.

6.1.1 ASSESSMENT CRITERIA

The following are the criteria to be assessed:

i. Compliance with the law – observance of legal regulations.

ii. Compliance with the obligations set forth in the Environmental Permit and other duties stipulated by the authorities.

iii. Compliance with the obligations outlined in the environmental permit. The audit will assess the level of compliance with each sub-plan and/or program that make up the Environmental Management Plan, namely:

- Impact Prevention and Mitigation Plan
- Training and Communication Plan
- Occupational Health and Industrial Safety Plan
- Waste Management Plan: measures aimed at reducing source waste (prevention), waste classification and quantification, recycling, transportation, temporary storage and final disposal; solid, liquid and hazardous waste records through qualified environmental managers.
- Community Relations Plan: records, logs and assessments of performed activities; fulfilled compensations, temporary employment; information and communication activities; record of claims and complaints.
- Tracking and Monitoring Plan
- Closure and Abandonment Plan
- Additional plans or programs: approved in the Environmental Impact Assessment and Environmental Management Plan.

6.1.2 PRE-AUDITING ACTIVITIES OR PLANNING.

For the purpose of achieving a careful and efficient review of the project records and evidences, the auditing team will carry out the activities preceding the field inspection:

a. Planning:

- Review of the auditing goals and specifications based on the project to be audited.

- Allocation of responsibilities and terms among the auditing team members.

- Coordination of logistical details not only internally but also with the audited company.

- Gathering of the essential information to be reviewed, including records, the environmental management plan and assessment applied to the project, communications, endorsements, reports, among others.

b. Information review

The lead auditor will review the project available information in order to prepare the review plan. This work includes the collection of secondary and field information in terms of abiotic, biotic and

socio-economic components.

- Review of the information submitted in the Oversight Reports of the PMA and in the Monitoring and Tracking Reports and Works Oversight Reports.

- Revision of records of detected environmental issues through the inventory and analysis of claims, conflicts and complaints raised by the community, the environmental audit or other relevant authorities during earlier periods by analyzing proposed solutions and pending activities.

- Review of the applicable environmental legislation, as well as the audited company standards.

- The available information will enable the preparation of a series of objective indicators representative of the project's environmental management to assess compliance with said project. Those will be included in the audit findings analysis.

c. Administrative details of the auditing process

Prior to conducting the field inspection, the lead auditor will contact the head of YILPORTECU S.A., the audited company, to arrange the inspection's final administrative details.

d. Generation of additional information

The aspects specified in the Audit Protocol (formats) will be reviewed and the necessary interviews will be conducted on a sampling basis, which will be ntended for local authorities and field personnel—including contractors' personnel, subcontractors, the community settled in the area of direct influence and users.

6.1.3 *IN SITU* INSPECTION

Considering the existing limitations:

i. Dredged sediments were discharged at the sediment disposal area in Estero Santa Rosa.

ii. The Filippo Brunelleschi dredge is currently located at the Panama shipyard for scheduled maintenance.

The proposition to inspect Pedro Albares Cabral dredge–which is still in the country–and the port terminal areas associated with the project, particularly piers and their contingency response capabilities as well as the sedimentation basins areas, are being put forward in order to verify their current operating conditions.

6.1.4 POST-AUDITING ACTIVITIES

The obtained results will be assessed, and the report including all project observations and

recommendations during the operational and maintenance stages will be prepared.

a. Audited phase assessment

The environmental assessment of activities prone to causing alterations in socio-environmental components will basically compare those activities against the environment where they are performed, identify, describe, assess, and quantify effective and potential impacts.

Based on this criterion, all stages and work-specific activities will be analyzed according to elements such as: population, flora, fauna, atmosphere, water quality, landscape, effects on private property, etc., of the marine ecosystem.

The auditing team will assess the collected evidence and determine the level of compliance by following the assessment criteria. Each assessment criterion is granted a standard grade indicating the environmental performance on the audited activities, in accordance with the following outline:

At this stage, and based on the collected evidence, the auditing team will jointly conduct the compliance assessment of:

i. Compliance with applicable legal regulations;

ii. Compliance with agreements in the Environmental Permit; and,

iii. Compliance with the Environmental Management Plan;

iv. Compliance with the Monitoring and Tracking Plan (PMS).

in order to develop logical and sustainable conclusions regarding the achieved compliance level.

Each assessed aspect is granted a standard grade indicating the environmental performance on the audited activities in accordance with the demonstrable level of compliance, which are:

6.1.4.1 Compliances (C)

This grade is granted to every activity, facility, or action performed or found within the restrictions, indicators, or specifications laid down in the Environmental Management Plan and the applicable legislation.

6.1.4.2 Noncompliances

Noncompliances, following the provisions outlined in Ministerial Resolution No. 061 on the amendment of Book VI of the TULSMA issued on Official Record No. 316 on 4 May 2015, can be classified according to their noncompliance degree, into:

Minor noncompliance (NC-). - this grade is granted the first time the following conditions are determined:

a) Noncompliance with the allowable limits or quality criteria in terms of parameter and

sampled source and which has not produced apparent alterations in the environment;

b) Delaying or failing to submit the environmental control and tracking administrative documents in the agreed upon terms;

c) Noncompliance with the technical obligations laid down in the Environmental Assessments, Environmental Management Plan, or other documents of similar nature required by the relevant environmental authorities that could pose or is posing a risk to the environment without actually having caused apparent environmental alterations;

d) Importation, commercial sale and use of hazardous chemical substances by individuals or legal entities not entered in the corresponding record;

e) Noncompliance of preventive cleaner production measures issued by the National Environmental Authority;

f) Inappropriate handling of products and/or elements considered hazardous, pursuant to the applicable environmental legislation;

g) Use, commercial sale, possession and/or importation of forbidden or restricted products pursuant to the corresponding technical list and regulation;

h) The performance of any activity associated with the comprehensive management of waste and/or hazardous chemical substances without permission or compliance with the administrative and technical conditions set forth in the applicable environmental legislation;

i) Partial noncompliance with the remediation, restoration and/or reparation program approved by the relevant environmental authority;

j) Partial noncompliance in the realization of the emerging plan and/or the approved action plan;

k) Special and/or hazardous waste management at any phase, without complying with the technical regulation issued for such purpose and/or without prior authorization by the relevant environmental authority;

l) Performance of activities other than those described in the documents submitted as a means to obtain the environmental permit;

m) Management of hazardous chemical substances at any phase, without complying with the technical regulation issued for such purpose by the environmental authority and/or without prior authorization by the relevant environmental authority;

n) Noncompliance with the specific activities listed in the enabling documents and the environmental legislation, which allow the tracking, monitoring, and control demanded by the relevant environmental authority for environmental management;

o) Generation, storage, transportation, removal, and final disposal of special waste without

complying with the technical regulation issued for such purpose and/or without prior authorization by the relevant environmental authority; and,

p) The formulation, manufacturing and/or packaging of chemical substances by individuals or legal entities which do not abide by the corresponding environmental permit and the legislation in force.

Major noncompliance (NC+): Below are the grading criteria:

1. Repetition during the assessed period of a minor noncompliance of the same infringement determined by the control and tracking mechanisms laid down in this Book.

2. Assessment of the following findings identified and informed by the relevant environmental authority:

a) Consecutive and repetitious noncompliance with the allowable limits in terms of parameter and sampled source;

b) Alterations in natural environmental conditions, which require long-term remediation as a result of technical noncompliances laid down in the applicable environmental legislation;

c) Total noncompliance with the remediation and restoration program approved by the relevant environmental authority;

d) Total noncompliance in the realization of the emerging plan and/or the approved action plan;

e) The abandonment of infrastructure or equipment, or the closure of activities without the approval of the relevant environmental authority;

f) Noncompliance in the realization of the activities included in the contingency plans laid down in the applicable environmental legislation;

g) Performance of additional or different activities from those described in the documents submitted as a means to obtain the environmental permit;

h) Insertion of non-hazardous solid waste into the country for final disposal purposes without the corresponding environmental permit;

i) Insertion of special waste into the country for final disposal purposes without complying with the technical regulation issued for such purpose and/or without prior authorization by the National Environmental Authority;

j) Cross-border movement of non-hazardous solid waste, hazardous and/or special waste either by importation, exportation or transit, including activities associated with their unauthorized traffic, without complying with the technical regulation issued for such purpose and/or without prior authorization by the National Environmental Authority; and,

k) Final or temporary disposal of debris, waste and/or refuse of any kind or class in water bodies, including the marine and coastal areas.

3. Performance of the activities expressly forbidden in this Book;

4. Assessment of environmental damage by way of a final resolution.

In case of findings which do not conform to the above descriptions, they shall be graded as major noncompliances and minor noncompliances by the auditing team, based on the following criteria:

a) Magnitude of the event

b) Effects on human health

c) Alterations on flora and fauna and/or natural resources

d) Type of altered ecosystem

e) Time and cost of remediation

f) Negligence in an accident

All noncompliances will be related to sections or clauses in the applicable environmental legislation, the Environmental Management Plan, contractual obligations of the audited company and others, if any, such as provisions of the supervisory authority using the format described in Table 6-1.

Table 6-1 Compliance assessment matrix

ASSESSMENT OF COMPLIANCE WITH THE ENVIRONMENTAL MANAGEMENT PLAN					
NAME OF PROGRAM					
Activity/measure	**Compliance**			**Findings**	**Verification means (annexes)**
	NC+	**NC-**	**C**		

b. Noncompliances collection

On the basis of the audit report, the auditing team will be responsible for preparing an action plan within the Environmental Management Plan for the operational and maintenance stages of the project so as to correct the encountered deficiencies. The plan will be sent to the audited company and its compliance will be compulsory within the established term, where each required solution will result in activities and duties defined in terms of goals, scope, results and duration. The integration will form this plan in order of priority of the identified and required measures. It will also include environmental quality tracking programs, which are essential to assessing the proposed solutions' efficiency.

c. End-of-audit meeting

Based on the final report's sketch and the action plan, a post-audit meeting will be held between the auditing personnel, the Environmental Management Unit, and the audited company representatives. This meeting aims to be informed of the audit findings and exchange criteria on assessments, observations, and results provided by the audit.

CHAPTER 7. COMPLIANCE ASSESSMENT

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TABLE INDEX

7 COMPLIANCE ASSESSMENT

The required compliance assessment will be conducted below in this chapter once the project has been established as well as its level of progress during its first year of operations (see Chapter V), in addition to the methodology for assessing its environmental compliance level (see Chapter VI).

The following are the criteria to be assessed:

i. Compliance with the obligations set forth in the Environmental Permit and other duties stipulated by the authorities.

ii. Compliance with the law – observance of legal regulations.

iii. Compliance with the obligations outlined in the environmental permit. The audit will assess the level of compliance with each sub-plan and/or program that make up the Environmental Management Plan, namely:

- Impact Prevention and Mitigation Plan
- Training and Communication Plan
- Occupational Health and Industrial Safety Plan
- Waste Management Plan: measures aimed at reducing source waste (prevention), waste classification and quantification, recycling, transportation, temporary storage and final disposal; solid, liquid and hazardous waste records through qualified environmental managers.
- Community Relations Plan: records, logs and assessments of carried out activities; fulfilled compensations, temporary employment; information and communication activities; record of claims and complaints.
- Tracking and Monitoring Plan
- Closure and Abandonment Plan
- Additional plans or programs: approved by the Environmental Impact Assessment and Environmental Management Plan.

iv. Compliance with the requirements and methodologies laid down in the Monitoring and Tracking Plan (PMS).

7.1 ASSESSMENT OF COMPLIANCE WITH THE OBLIGATIONS AND AGREEMENTS IN THE ENVIRONMENTAL PERMIT

Table 7-1 shows the conducted compliance assessment, and Table 7-2 shows the summarized result of the assessment of compliance with the obligations arising from Environmental Permit MAE-RA-2017-297974.

Table 7-1 Assessment of compliance with the obligations and agreements in the environmental permit

No.	Obligations in the environmental permit	ASSESSMENT			Results	Verification means
		NC+	NC-	C		
1.	Closely abide by the provisions in the ExAnte Environmental Assessment and Environmental Management Plan of the Project coded MAE-RA-2017-297974.			X	- Technical Report No. MAE-DNPMC-SGMC-2018-0049-M dated 7 June 2018 prepared by the Technical Committee for the Analysis, Tracking and Monitoring of Puerto Bolívar dredging operation leads to the conclusion that the final sediment disposal and the dredges mentioned in the EIA do not conform to the works carried out in Pier No. 6; and it was observed that the dredge IHC BEAVER 6518C had not performed any dredging operations, while two TSHD dredges were seen performing the dredging works. - By virtue of a resolution adopted on 19 September 2018, El Oro Province Environmental Department commenced Administrative Proceeding No. 007-2018C.A. based on memorandum No. MAE-UCAEO-DPAEO-2018-0657-M dated 13 July 2018, and Technical Report No. 0720-2018-MAE-DPAEO-UCA also dated 13 July 2018; which resolves, as a temporary preventive measure, to issue the TEMPORARY SUSPENSION of the project activities. - At a hearing conducted in Machala on 5 February 2019, the TERMINATION of Penalizing Administrative Proceeding No. 007-2018C.A. was ruled, in defense of the provisions set forth in Sections 213 and 244 of the Organic Administrative Code, thereby revoking all actions in Administrative Proceeding No. 007-2018C.A. and, by virtue thereof and in accordance with the provisions set forth in Section 191, last subsection of the aforementioned legislation, the Temporary Suspension of the Activities ordered in the realization of the project "Dredging of piers 1, 2, 3, 4, 5 and 6, maneuvering area and access canal to Puerto Bolívar" was deemed terminated. - By means of a judicial summons issued on 18 February 2019, the legal representative of Yilport Terminal Operations was served notice of the commencement of Administrative Proceeding No. 002-2019CA, for the alleged noncompliance with the Environmental Management Plan and the obligations set forth in the environmental permit. - By way of Official Action No. YPTO-GG-0055-19, the legal representative of Yilport elicited a reply to the charges brought in Administrative Proceeding No. 002-2019CA.	Anexo 1.4.4 YPTO-GG-0374 Pronunciamiento Ampliación Estudios Anexo 1.4.9 PRJ-R252-MAE_Baja proceso administrativo Anexo 1.4.10 PRJ-R255-MAE_Baja proceso administrativo No. 002-2019CA

No.	Obligations in the environmental permit	ASSESSMENT			Results	Verification means
		NC+	NC-	C		
					- At the Administrative Proceeding Hearing conducted in Machala on 18 March 2019, the Environmental Authority deems REVOKED all actions as of the initial ruling with which Penalizing Administrative Proceeding No. 002-2019C.A. was commenced. - - By way of Official Action No. YPTO-GG-0374-18, YILPORTECU S.A. notifies the Ministry of Environment of its decision to invoke Section 19 of Ministerial Resolution No. 061 concerning the performance of a Complementary Assessment to the project EIA, and Section 18 of the same resolution concerning the performance of a new environmental regularization process for the additional dredging area (changes to the routing of the access canal).	

No.	Obligations in the environmental permit	ASSESSMENT			Results	Verification means
		NC+	NC-	C		
2.	Keeping a continuous environmental monitoring and tracking program for the measures laid down in the Environmental Management Plan, whose results must be submitted to the Ministry of Environment in accordance with the regularity and frequency set forth in said plan.			X	- An environmental consultant is kept serving the purpose of overseeing PMA implementation, and has submitted a monthly oversight report from January to December 2018 and from January and February 2019 to YILPORTECU Managing Department. The results of this report and copy thereof have been delivered to MAE as part of the Monitoring and tracking plan report, as follows: - From January to April 2018, the Environmental Oversight Report was entered in El Oro Province Environmental Department by way of Official Action No. YPTO-GG- 0170-18 on 5 June 2018. From May 2018 onwards up until today, this report is included in the monthly report of the monitoring and tracking plan - March 2018, entered by way of Official Action No. YPTO-GG-0110-18 on 04/24/2018; - April 2018, entered by way of Official Action No. YPTO-GG-0157-18 on 05/29/2018; -May 2018, entered by way of Official Action No. YPTO-GG-0183-18 on 06/15/2018; - June 2018, entered by way of Official Action No. YPTO-GG-0237-18 on 07/31/2018; -July 2018, entered by way of Official Action No. YPTO-GG-0270-18 on 08/23/2018; - August 2018, entered by way of Official Action No. YPTO-GG-0303-18 on 09/28/2018; - September 2018, entered by way of Official Action No. YPTO-GG-0329-18 on 10/30/2018; - October 2018, entered by way of Official Action No. YPTO-GG-0360-18 on 11/28/2018; - November 2018, entered by way of Official Action No. YPTO-GG-0382-18 on 12/26/2018; - December 2018, entered by way of Official Action No. YPTO-GG-0053-19 on 02/26/2019; - January 2019, entered by way of Official Action No. YPTO-GG.0060-18 on 03/14/2019; - February 2019, entered by way of Official Action No. YPTO-GG-0077-19 on 04/11/2019.	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento

No.	Obligations in the environmental permit	ASSESSMENT			Results	Verification means
		NC+	NC -	C		
3.	During the performance of the project, processes, and activities, use technologies and methods that mitigate and, where possible, prevent adverse environmental impacts.			X	TSDH dredges employed in the dredging operation have overflow funnels (vertical tubes inside the hopper used to drain—through the keel—water excess in the said hopper to maximize load) equipped with an anti-turbidity valve or "green valve", a hydraulic valve inside the overflow which drastically reduces turbidity caused by drained water excess through the overflow funnels, by means of containing mixture flow ingress through the funnel. The height from where the water falls is thereby reduced, as is the amount of air that mixes in the overflow so that flow suspension is not attempted	Anexo 2.4.2 Ficha Técnica de Draga Filippo_Brunelleschi Anexo 2.5.2 Ficha Técnica Draga Pedro_Alvares_Cabral Anexo 3.1.1 Metodología de operaciones de dragado_FDC1819.MES.81.01.e.01 Method Statement Dredging Operations
4.	Be solely responsible for the activities carried out by their contractors or subcontractors.			X	YILPORTECU S.A. is the holder of and responsible for Environmental Permit MAE-RA- 2017-297974 and has hired the company's consultancy and oversight services ROYAL HASKONING DHV for the technical oversight of the dredging activities conducted by contractor FLANDERS DREDGING CORPORATION NV and the environmental consulting companies ECOSFERA Cía. Ltda. and ECOSAMBITO C. Ltda. for overseeing its Environmental Management Plan.	Anexo 1.1.13 Ficha Técnica Contratistas Anexo 2.4.1 Registro de Contrato - Draga FB Anexo 2.5.1 Registro de Contrato - Draga PAC
5.	Submitting the AAC in accordance with the provisions in Section 269, Book VI of TULSMA, issued by means of Ministerial Resolution No. 061 on 7 April 2015.		X		TDRs for the AAC have been entered in El Oro Province Environmental Department of the MAE on 12/19/2018 and approved by way of Official Action No. MAE-DPAEO-2019-1003-O received on 16 April 2019.	Anexo 1.1.5 MAE-DPAEO-2019-1003-O_Aprobación TDR's AAC Dragado Anexo 1.4.5 Oficios de entrega de Términos de Referencia AAC

No.	Obligations in the environmental permit	ASSESSMENT			Results	Verification means
		NC+	NC-	C		
6.	Ensure strict compliance with the provisions in Subchapter II, Chapter VI of TULSMA, issued by means of Ministerial Resolution No. 061 on 7 April 2015, for hazardous and/or special waste management.			X	YILPORTECU S.A. Bears Hazardous Waste Generator Record No. SUIA-10-2018-MAE-DPAE0-00440. Hazardous waste has been submitted to the authorized manager SERVIDASA directly from the storage tanks of dredging vessels to the tank truck approved by SERVIDASA, within YILPORT TERMINAL OPERATIONS (YILPORTECU) S.A. Facilities, without using their hazardous waste storage facilities. SERVIDASA is currently awaiting the renewal of its Environmental Permit with the Ministry of Environment (through application MAE-SOL-ART-2018-2167), and as of now has the APPROVAL OF TECHNICAL REQUIREMENTS through Technical Report No. MAE-2018-DPAEO-000671. Thus far, the company operates under its current environmental license No. 152-003-SGA- GPAO, duly registered in the Ministry of Environment (Registration certificate No. 152 dated 6 July 2010).	Anexo 1.1.6 Registro de Generador de Desechos Peligrosos. Anexo 1.1.7 YPTO-GG-0383-18 Declaración Anual Desechos Peligrosos 2018
7.	Obtain a record of hazardous chemical substances, hazardous and special waste following the procedures laid down by the Ministry of Environment, pursuant to Section 88, subsection b) and related to Temporary Provision IV, Book VI of TULSMA issued by way of Ministerial Resolution No. 061 on 7 April 2015.			X	YILPORTECU S.A. Bears Hazardous Waste Generator Record No. SUIA-10-2018-MAE-DPAE0-00440. The 60-day term laid down in Temporary Provision IV, of Ministerial Resolution No. 061 was not met. Project activities do not demand the use of chemical substances.	Anexo 1.1.6 Registro de Generador de Desechos Peligrosos

No.	Obligations in the environmental permit	ASSESSMENT			Results	Verification means
		NC+	NC-	C		
8.	Provide the technical personnel of the Ministry of Environment with all the assistance to carry out the monitoring, control, tracking and compliance processes of the Environmental Management Plan during the project realization, which are necessary for granting this license.			X	In its Technical Report No. MAE-DNPMC-SGMC-2018-0049-M dated 7 June 2018, the Technical Committee assigned to the project relays that during its Technical Visit to Pedro Alvares Cabral dredge, YILPORTECU technical personnel and its contractor Flanders Dredging Corporation provided their full assistance, and that the presence of CONSULSUA S.A. technicians as part of the Oversight team was confirmed. The Environmental Authority has not provided any additional inspections and/or access requests.	Anexo 1.4.6 Informe Comisión Técnica_MAE-DNPMC-SGMC- 2018-0049-M
9.	Pay for administrative services associated with Environmental Management and Quality during the project term, in order to track and control compliance with the approved Environmental Management Plan, pursuant to the provisions in Ministerial Resolution No. 083 B, published in Official Record No. 387 dated 4 November 2015.			X	The Environmental Permit establishes that YILPORTECU made bank transfers through an Interbank Payment System (SPI by its Spanish acronym) for the amounts of $960.00 as payment for control and tracking, and $26.438.00 pertaining to 0.001 of the total project cost.	Anexo 1.1.3 ASPECT MAE-RA-2017-297974

No.	Obligations in the environmental permit	ASSESSMENT			Results	Verification means
		NC+	NC-	C		
10.	Observe the provisions in Section 38, Book VI of TULSMA, issued by means of Ministerial Resolution No. 061 on 7 April 2015, the same which establishes that "No warranty or policy shall be required when the performers of the project, work or activity are public entities. However, The performing entity shall be liable, both at administrative and civil law, for the full and timely compliance with the Environmental Management Plan of the licensed project, work or activity and the contingencies upon which environmental or third party damages may be caused, pursuant to the provisions in the applicable legislation".			X	YILPORT TERMINAL OPERATIONS (YILPORTECU) S.A. is a privately owned company carrying out a Public-Private Partnership project.	Anexo 1.1.11 Adjudicación de la empresa
11.	Keep the performance bond in effect during the project life cycle.			X	On December 1 2017, through the Single System of Environmental Information (SUIA by its Spanish acronym), YILPORTECU enters Bank Performance Bond No. B225916 for the amount of $214,830.00, expiring on 12/05/2018; and renewed on 30 November 2018 for the same amount, through BANK GUARANTEE No. S220217, valid until 5 December 2019. MAE is notified of this matter by way of Official Action No. YPTO-GG-0361-18, delivered on 3 December 2018.	Anexo 1.1.8 YPTO-GG-0361-18 Renovación de Garantía 2018

No.	Obligations in the environmental permit	ASSESSMENT			Results	Verification means
		NC+	NC-	C		
12.	Abide by the national and local environmental legislation in force.			X	The project meets the national and local legislation reflected in the environmental management plan.	The assessment of compliance with the environmental legislation results in 100% compliance.

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Table 7-2 Results of the assessment of compliance with the agreements and obligations in the environmental permit

Results	Number	%
TOTAL MEASURES	12	
COMPLIANCES	11	92%
MINOR NONCOMPLIANCES	1	8%
MAJOR NON-COMPLIANCES	0	0%
TOTAL NOT APPLICABLE (N/A)	0	--

Prepared by: *ECOSAMBITO Cía. Ltda.*

7.2 ASSESSMENT OF COMPLIANCE WITH THE ENVIRONMENTAL LEGISLATION

Table 7-3 shows the conducted compliance assessment, and Table 7-4 shows the summarized result of the assessment of compliance with the applicable environmental legislation.

Table 7-3 Assessment of compliance with the environmental legislation

Assessed criteria	Description	Assessment			Results	Verification means
		NC+	NC-	C		
Regulation on ambient air quality. Criteria ambient air pollutant concentration Paragraph 4.1.2.1 of Annex 4, Book VI of the Unified Text on Subsidiary legislation of the Ministry of Environment.	For criteria air pollutants, which are identified as settleable particles, particulate matter (PM10, PM2.5), nitrogen dioxide, sulfur dioxide, carbon monoxide and ozone, the following concentrations are established: Particulate Matter PM10: 100 µg/m3 (24 hours); Particulate Matter PM2.5: 50 µg/m3 (24 hours); Sulfur dioxide: 125 µg/m3 (24 hours); Carbon monoxide: 1000 µg/m3 (8 hours); Nitrogen dioxide: 200 µg/m3 (1 hour).			X	Air quality monitoring procedures were conducted following the stipulated schedule (quarterly), with the exception of the January-March quarter of 2018, and the results were submitted to the Ministry of Environment, as follows: - May 2018, entered by way of Official Action No. YPTO-GG-0183-18 on 15 June 2018; - May 2018, entered by way of Official Action No. YPTO-GG-0237-18 on 31 July 2018; - September 2018, entered by way of Official Action No. YPTO- GG-0329-18 on 30 October 2018; and, - September 2018, entered by way of Official Action No. YPTO- GG-0053-19 on 26 February 2018. A laboratory duly accredited by SAE conducted all monitoring procedures. 100% of the monitored parameters meet the MALs laid down in Environmental Resolution No. 097A, Annex 4: Regulation on Air Quality or Immission Level, Subparagraph 4.1.2 on General standards for criteria ambient air pollutant concentrations. The subsequently conducted monitoring procedure pertains to March 2019, and it was performed on 26 March 2019.	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento Anexo 3.3.12 Registro de resultados de monitoreos de calidad de aire

Ministerial Resolution No. 097-A, Annex 5: Maximum Noise Emission Levels and Methodology for measuring stationary sources and moving sources, Table 1: Maximum Noise Emission Levels (LKeq) for stationary noise sources. Occupational Health and Safety Regulation, and Improvement of the Work Environment, Section 55 Noise and Vibrations.	Table 1: Maximum Noise Emission Levels (LKeq) for stationary noise sources. Regulation on Occupational Health and Safety and Improvement of the Work Environment, Section 55 Noise and Vibrations.			X	Noise monitoring procedures were conducted in accordance with the stipulated schedule (quarterly), with the exception of the January-March quarter of 2018, and the results were submitted to the Ministry of Environment, as follows: - May 2018, entered by way of Official Action No. YPTO-GG-0183-18 on 15 June 2018; - June 2018, entered by way of Official Action No. YPTO-GG-0237-18 on 31 July 2018; - September 2018, entered by way of Official Action No. YPTO-GG-0329-18 on 30 October 2018; and, - December 2018, entered by way of Official Action No. YPTO-GG-0053-19 on 26 February 2018. A laboratory duly accredited by SAE conducted all monitoring procedures. 68.8% of the monitored parameters, among all monitoring sites, meet the MALs laid down in Ministerial Resolution No. 097-A, Annex 5: Maximum Noise Emission Levels and Methodology for measuring stationary sources and moving sources, Table 1: Maximum Noise Emission Levels (LKeq) for stationary noise sources; although 100% of the measurements comply with the Regulation on Occupational Health and Safety and Improvement of the Work Environment, Section 55 Noise and Vibrations. However, it is worth noting that 2 of the 5 submitted noncompliances are located outside of the Port Terminal (P4. Coastal Shipping Pier), and pertain to an area with huge transit of people and intensive use of speakers at very loud volumes. The subsequently conducted monitoring procedure pertains to March 2019, and it was performed on 26 March 2019.	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento Anexo 3.3.13 Registro de resultados de monitoreos de ruido

Assessed criteria	Description	Assessment			Results	Verification means
		NC+	NC-	C		
Ministerial Resolution No. 097A, Annex 1: Regulation on Environmental Quality and Effluent Discharges into the water resource, Table 2: Allowable Quality Criteria for aquatic and wildlife conservation in Fresh, Marine and Estuarine Waters	Table 2: Allowable Quality Criteria for aquatic and wildlife conservation in Fresh, Marine and Estuarine Waters.			X	Water quality monitoring procedures were conducted in accordance with the stipulated schedule (monthly during dredging operations, quarterly when no dredging operations are being performed), and the results were submitted to the Ministry of Environment, as follows: - March 2018, entered by way of Official Action No. YPTO-GG-0110-18 on 24 April 2018; - April 2018, entered by way of Official Action No. YPTO-GG-0157-18 on 29 May 2018; - May 2018, entered by way of Official Action No. YPTO-GG-0183-18 on 15 June 2018; - August 2018, entered by way of Official Action No. YPTO-GG-0303-18 on 28 September 2018; - November 2018, entered by way of Official Action No. YPTO-GG-0382-18 on 26 December 2018; - December 2018, entered by way of Official Action No. YPTO-GG-0053-19 on 26 February 2018; and, - February 2019, entered by way of Official Action No. YPTO- GG- 0077- 19 on 04/11/2019. A laboratory duly accredited by SAE conducted all monitoring procedures. Each conducted monitoring procedure covers a total of 86 parameters: 5 field parameters, 1 physico-chemical, 2 anions and non-metals, 5 organic, 1 microbiological, 6 total metals, 27 organochlorine compounds, 15 organophosphorus compounds, 18 organonitrogen compounds, and 6 carbamates. Considering the 6 monitoring sites, and the fact that 6 monitoring procedures have been conducted in the assessed period (pertaining to March, April, May, August and November of 2018, and February of 2019), the total number of conducted measurements amounts to 3,096. Of the	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento Anexo 3.3.14 Registro de resultados de monitoreos de calidad de agua

Assessed criteria	Description	Assessment			Results	Verification means
		NC+	NC-	C		
					above, only 36 results (1.16% of the total) do not meet the MALs laid down in Table 2 from Annex 1, Book VI of the Unified Text on Subsidiary Legislation of the Ministry of Environment, issued by means of Ministerial Resolution 097-A, whereas 98.84% meet the MALs or do not present defined MALs in the above regulation. Overall, the parameters found outside the allowable limits are: iron, copper, and oils and greases. Worth to note is that these elements have not been "discharged" by the project activities, but are rather part of the body of water.	

Assessed criteria	Description	Assessment			Results	Verification means
		NC+	NC-	C		
Ministerial Resolution No. 097-A, Annex 2: Regulation on Soils Environmental Quality and Remediation Criteria for polluted soils. Prevention of soil pollution by activities that generate non-hazardous solid waste, Paragraph 4.2.1 from Annex 2, Book VI of the Unified Text on Subsidiary Legislation of the Ministry of Environment.	Any productive activity that generates non-hazardous solid waste must implement a policy for recycling or reusing that waste. If recycling or reusing is not viable, waste must be disposed of in an environmentally acceptable way. Industries and service providers must keep a record of generated waste, indicating their volume and designated disposal site. Under no circumstances must waste be disposed of in areas not approved for such purpose by the relevant environmental authority.			X	The non-hazardous solid waste generated by dredging vessels activity are managed by environmental managers, who must ensure their delivery to recyclers and final disposal at the local landfill.	Anexo 2.4.10 Manifiestos Únicos - FB Anexo 2.5.10 Manifiestos Únicos - PAC

Ministerial Resolution No. 097-A, Annex 2: Regulation on Environmental Quality of the Soil Resource and Remediation Criteria for polluted soils. Prevention of soil pollution by activities that generate hazardous and special waste, Paragraph 4.2.2 from Annex 2, Book VI of the Unified Text on Subsidiary Legislation of the Ministry of Environment.	Hazardous and special waste generated by various industrial, commercial, agricultural or service activities must be returned to their suppliers or delivered to an environmental manager qualified by the relevant environmental authority... Management, storage, transportation and disposal of hazardous and special waste must be conducted in accordance with the provisions set forth in the corresponding environmental legislation and the Environmental Management Plan, which shall be informed in the appropriate periodic report.			X	YILPORTECU S.A. Bears Hazardous Waste Generator Record No. SUIA-10-2018-MAE-DPAE0-00440. Hazardous waste has been submitted to the authorized manager SERVIDASA directly from the storage tanks of dredging vessels to the tank truck approved by SERVIDASA, within YILPORT TERMINAL OPERATIONS (YILPORTECU) S.A. facilities, without using their hazardous waste storage facilities. SERVIDASA is currently awaiting the renewal of its Environmental Permit with the Ministry of Environment (through application MAE-SOL-ART- 2018-2167), and as of now has the APPROVAL OF TECHNICAL REQUIREMENTS through Technical Report No. MAE-2018-DPAEO- 000671. Thus far, the company operates under its current environmental license No. 152-003-SGA-GPAO, duly registered in the Ministry of Environment (Registration certificate No. 152 dated 6 July 2010).	Anexo 1.1.6 Registro de Generador de Desechos Peligrosos. Anexo 1.1.7 YPTO- GG-0383-18 Declaración Anual Desechos Peligrosos 2018

Assessed criteria	Description	Assessment			Results	Verification means
		NC+	NC-	C		
Ministerial Resolution No. 097-A, Annex 2: Regulation on Soil Environmental Quality and Remediation Criteria for polluted soils, Table 1: Soil Quality Criteria	Table 1: Soil Quality Criteria			X	Soil quality monitoring procedures were conducted in accordance with the stipulated schedule (monthly during dredging operations, quarterly when no dredging operations are being performed), and the results were submitted to the Ministry of Environment, as follows: - March 2018, entered by way of Official Action No. YPTO-GG-0110-18 on 24 April 2018; - April 2018, entered by way of Official Action No. YPTO-GG-0157-18 on 29 May 2018; - May 2018, entered by way of Official Action No. YPTO-GG-0183-18 on 15 June 2018; - August 2018, entered by way of Official Action No. YPTO-GG-0303-18 on 28 September 2018; - November 2018, entered by way of Official Action No. YPTO-GG-0382-18 on 26 December 2018; - December 2018, entered by way of Official Action No. YPTO-GG-0053-19 on 26 February 2018; although it is not in the schedule, and; - February 2019, entered by way of Official Action No. YPTO- GG- 0077- 19 on 04/11/2019. All monitoring procedures were conducted by a laboratory duly accredited by SAE. Each conducted monitoring procedure covers a total of 73 parameters: 1 parameter for aqueous extraction, 7 for dry-weight metal compounds, 1 for dry-weight organic compounds, 26 for wet-weight organochlorine compounds, 16 for wet-weight organophosphorus compounds, 16 for wet-weight organonitrogen compounds and 6 for carbamates. Considering the 7 monitoring sites, and the fact that 6 monitoring procedures have been conducted in the assessed period (pertaining to March, April, May, August and November of 2018, and February of 2019), he total	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento Anexo 3.3.15 Registro de resultados de monitoreos de sedimentos

Assessed criteria	Description	Assessment			Results	Verification means
		NC+	NC-	C		
					number of conducted measurements amounts to 3,066. Of the above, only 54 results (1.76% of the total) do not meet the maximum allowable limits (MALs) laid down in Table 1. Soil Quality Criteria from Annex 2. of the Unified Text on Subsidiary Legislation of the Ministry of Environment issued by means of Ministerial Resolution 097-A.; and 30 results (0.98% of the total) do not meet the MALs laid down in the Canadian Environmental Quality Guidelines (guiding values for Canadian Environmental Quality); whereas 2,982 results (97.26%) meet the MALs or do not present a defined MAL in the above regulations.	

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Table 7-4 Result of the assessment of compliance with the environmental legislation

Results	Number	%
TOTAL NUMBER OF ASSESSED CRITERIA	6	100%
COMPLIANCES	6	100%
MINOR NON-COMPLIANCES	0	0%
MAJOR NON-COMPLIANCES	0	0%
TOTAL NOT APPLICABLE (N/A)	0	--

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7.3 ASSESSMENT OF COMPLIANCE WITH THE ENVIRONMENTAL MANAGEMENT PLAN

Table 7-5 shows the conducted compliance assessment, and Table 7-6 shows the summarized result of the assessment of compliance with the plans, programs, and measures laid down in the current Environmental Management Plan.

Table 7-5 Matrix of assessment of compliance with the Environmental Management Plan

Plans/Programs/Measures	ASSESSMENT			Results	Verification means
	NC+	NC-	C		
PREVENTION AND MITIGATION PLAN (PPM)					
PPM-01 NOISE, VIBRATION AND GAS EMISSION CONTROL PROGRAM					
To conduct preventive and corrective maintenance of equipment and machinery so that they are kept in proper operating conditions.			X	Flanders Dredging Corporation (FDC) has an inspection plan for dredging vessels that lists system inspection requirements. The dredge maintenance plan is controlled through the AMOS-W software (aboard the dredges), indicating what type of maintenance needs to be performed based on the operating hours of each piece of equipment and the manufacturer's instructions. Each conducted maintenance activity is directly recorded in the software.	Anexo 2.2.9 Registro de mantenimiento en buques-draga
USE OF HEARING PROTECTION					
Workers must wear PPE (hearing protection) to mitigate the noise generated by the dredge.			X	PPE has been delivered to the dredging vessels crew members, including hearing protection. Dredging vessels are equipped with earplugs dispensers at specific operating areas.	Anexo 2.1.6 Manual de uso EPP Anexo 2.5.9 Registro Fotográfico - Pedro Alvares Cabral/Registro Fotográfico 3
RESTRICTIONS ON BOAT TRAFFIC					

Plans/Programs/Measures	ASSESSMENT			Results	Verification means
	NC+	NC-	C		
Boat traffic will be restricted during dredging operations and only the necessary equipment will be manned so as to reduce sources of noise.			X	Dredging activities were scheduled according to port operations weekly planning, thus avoiding the concurrence of dredging and port operating activities.	Anexo 3.1.4 Programación semanal PBO-Berth del período de dragado.
PPM-02 MITIGATION PROGRAM FOR IMPACTS ON MARSH WATER QUALITY					
Dredging operations must not be carried out during periods of strong winds, waves, and currents to reduce sediment suspension.			X	It was revealed during the audit that FDC manages a summary of wind currents to contemplate their influence on dredging operations and adopt appropriate measures and restrictions. The employed weather forecast was provided by BMT ARGOSS, a service that supplies a forecast data module containing information that can be useful for the work location of each individual client. The above information includes, among other forecasts, the last issued operating weather forecast and actual weather warnings for work places, in addition to further information such as tidal measurements and sunrise and sunset times. Module data is	Anexo 2.2.8 Bolivar_2018061311

Plans/Programs/Measures	ASSESSMENT			Results	Verification means
	NC+	NC-	C		
				routinely updated as each new piece of information is made available.	
A specific area must be defined for placing excess material from dredging operations, in addition to installing containment berms to prevent sediments from flowing into the marsh.			X	During the project's set up stage, two specific sites were defined for sediment disposal: sedimentation basins (area near the port terminal), and the disposal tank in Canal de Jambelí. However, once into the performance stage, the disposal tank in Canal de Jambelí was selected as the sole sediment discharging site.	Anexo 3.1.3 Plano de División Depósito en Canal de Jambelí_FDC1819-SUR-RQ0012-0002-0 Dump Area Anexo 2.2.6 Marcas de posición diaria _Filippo Brunelleschi Anexo 2.2.7 Marcas de posición diaria _Pedro Alvares Cabral Anexo 3.5 Mapa de recorrido de dragas (Total Tracks)
Fuels, lubricants and chemical products will be stored in safe containers and kept in containment trays to avoid leaks on vessels that can reach the marsh's surface.			X	Dredging vessels are equipped with a proper lubricants and fuel storage system, including containment tanks and leak equipment. Moreover, the dredging vessel deck itself is regarded as a leak container, for it has a 5 cm height perimeter edge.	Anexo 2.5.9 Registro Fotográfico - Pedro Alvares Cabral/ Registro Fotográfico 6

Plans/Programs/Measures	ASSESSMENT			Results	Verification means
	NC+	NC-	C		
A leak control kit must be available.			X	Dredging vessels are equipped with leak recovery kits arranged in different areas where they are needed. They also have a hold where replacement products for leak containment are stored.	Anexo 2.5.9 Registro Fotográfico - Pedro Alvares Cabral/ Registro Fotográfico 6
PPM-03 PREVENTIVE MEASURES PROGRAM FOR OPERATING DREDGES					
Dredges to be used in the project shall meet all required safety and environmental measures. The following actions must be taken: - Perform verification procedures on dredge features on a regular basis. - Examine storage conditions of bilge water tanks and state of the control system for gas emissions into the atmosphere.			X	During the performance of dredging activities, 2 supervisors from the Royal Haskoning company conducted regular inspections aboard the dredging vessel. Each dredging vessel bears a nitrogen oxide emissions measurement certificate, an energy efficiency assessment, and an International Certificate of Pollution Prevention from its corresponding launching year.	Anexo 2.4.4 Medición de emisiones NOx - FB Anexo 2.4.5 Eficiencia energética - FB Anexo 2.4.6 Cert. Intl. Prevención de la Contaminación - FB Anexo 2.5.4 Medición de emisiones NOx - PAC Anexo 2.5.5 Cert. Eficiencia energética - PAC Anexo 2.5.6 Cert. Intl. Prevención de la Contaminación - PAC Anexo 3.4.1 Informe Mensual de Fiscalización - Abril_Rev.03 Anexo 3.4.2 Informe Mensual de Fiscalización - Mayo_Rev.06

Plans/Programs/Measures	ASSESSMENT			Results	Verification means
	NC+	NC-	C		
Dredges must keep a record of weekly hours worked and extracted sediment volume.			X	The maintenance management program (AMOS-W) keeps a record of equipment operation time. The dredging contractor company (FDC) prepared daily reports which stated, among other details, the number of work hours and the amount of removed and disposed of sediments.	Anexo 2.3.1 FDC1819_DailyReport_Filippo Brunelleschi_Compilado Anexo 2.3.2 FDC1819_DailyReport_Pedro Alvares Cabral_Compilado
- Optimal performance of contingency plans and control systems shall be verified twice per month.			X	Contingency plans and control systems are verified during routine and scheduled inspections.	Anexo 2.4.8 Inspecciones de Seguridad - FB Anexo 2.5.8 Inspecciones de Seguridad - PAC
- Confirm that pipe couplings are completely sealed and in good order to avoid leaks.			X	During the in situ auditing phase, couplings and pipes were confirmed to be completely sealed and in full operating condition. All dredging vessel systems and subsystems are verified during routine and scheduled inspections.	Anexo 2.4.8 Inspecciones de Seguridad - FB Anexo 2.5.8 Inspecciones de Seguridad - PAC Anexo 2.5.9 Registro Fotográfico - Pedro Alvares Cabral/ Registro Fotográfico 6
- Verify that there are no cracks in perimeter walls.			X	Prior to the commencement of dredging activities (Phase 1), the technical assessment of Basin 2 was conducted, which concluded that it could not be used due to existing risks (filtrations); instead, sediments were placed	Anexo 3.1.5 PRJ-R133-SURCONSUL_Informe Condiciones Estabilidad - Piscina 2

Plans/Programs/Measures	ASSESSMENT			Results	Verification means
	NC+	NC-	C		
				at the offshore sediment disposal site.	
-All technical and working personnel must wear the appropriate clothing and protection equipment to their work area.			X	It was revealed during the audit that both Pedro Alvares Cabral dredging vessel crew and the YILPORTECU personnel assigned to the project have the appropriate PPE.	Anexo 1.3.2 Registro de entrega EPP's Anexo 2.2.5 ECU-1819-YIL-Confirmation Of Receipt PPE
- Regularly examine the equipment and basic tools so as to deal with emergencies.			X	Basic safety equipment and tools—both aboard the dredging vessels and at the port terminal—are subject to periodic inspections.	Anexo 2.4.7 Certificado Equipo Médico - FB Anexo 2.4.8 Inspecciones de Seguridad - FB Anexo 2.5.7 Cert. Inspección Equipos Contra incendios - PAC Anexo 2.5.8 Inspecciones de Seguridad - PAC Anexo 1.3.5 Reporte Inspección Equipos Contra Incendios_V1_Extintores
- Users of the access canal to Estero Santa Rosa (to-be-dredged area) must be informed of the activity schedule to avoid conflicts.		X		On 19 April 2018, upon commencement of dredging Phase 1, a socialization process of activities to be performed was conducted with representatives of associations and fishermen guilds, although they do not encompass all area users.	Anexo 1.3.18 Registro de socialización
PPM-04 PIPELINE PLANIMETRY PROGRAM					

Plans/Programs/Measures	ASSESSMENT			Results	Verification means
	NC+	NC-	C		
Carry out the planimetry of ground pipelines located as far as the sediment disposal site, where vehicle passage sites are revealed.			N/A	This measure was proposed so that sediments extracted from the piers site be moved through pipelines. In spite of this, sediments extracted during dredging activities were disposed of at the approved offshore discharge site. A general drawing for pipeline insertion purposes is available	Anexo 1.3.10 Planos Piscinas de sedimentos
PPM-05 PREVENTION AND SAFETY PROGRAM FOR TSHD DREDGE					
When the dredge arrives from overseas, the following will be required: Dredging work plan - Industrial safety plan - Contingency plan - Vessel maintenance plan			X	Prior to the commencement of dredging activities, the contractor company delivered the mandatory documents (plans) to the contracting party, with the exception of the maintenance plan, which was broadly explained in the dredging operations methodology due to its extent and level of detail.	Anexo 2.1.2 Planes de Contingencias - FDCAnexo 2.1.3 Planes de Contingencia - Derrames_SOPEPAnexo 3.1.1 Metodología de operaciones de dragado_FDC1819.MES.81.01.e.01 Method Statement Dredging OperationsAnexo 3.1.2 Plan de Trabajo_FDC1819.PPR.81.01.e.01 Program of Works Phase 1 Stage 1
PPM-06 VISUAL IMPACT PREVENTION PROGRAM					

Plans/Programs/Measures	ASSESSMENT			Results	Verification means
	NC+	NC-	C		
Installing a physical barrier in the sediment disposal site perimeter adjacent to the walled enclosure of former ISSFA plots of land facing Ave. Bolívar Madero Vargas.			**N/A**	Sedimentation basins were not employed during Phase 1 dredging activities since it was determined through technical assessments and engineering studies that there are imminent risks associated with their infrastructure. Sediments were placed at the offshore sediment disposal site.	Anexo 3.1.5 PRJ-R133-SURCONSUL_Informe Condiciones Estabilidad - Piscina 2 Anexo 3.4.1 Informe Mensual de Fiscalización - Abril_Rev.03 Anexo 3.4.2 Informe Mensual de Fiscalización - Mayo_Rev.06
PPM-07 OFFSHORE SEDIMENT DISPOSAL SITE PROGRAM					
The offshore sediment disposal site must be controlled and the following measures must be taken: · Sediments will be discharged via the dredge lower gates…			**X**	As per oversight reports conducted by the Royal Haskoning contractor company in April and May of 2018, sediments were discharged via the dredging vessel discharge lower gates according to the provisions in document FDC1819.MES.81.01.e.01 *Method* FDC1819.MES.81.01.e.01 *Method* Statement Dredging Operations, which describes the methodologies to be followed during dredging operations.	Anexo 3.1.1 Metodología de operaciones de dragado_FDC1819.MES.81.01.e.01 Method Statement Dredging Operations Anexo 3.4.1 Informe Mensual de Fiscalización - Abril_Rev.03 Anexo 3.4.2 Informe Mensual de Fiscalización - Mayo_Rev.06

Plans/Programs/Measures	ASSESSMENT			Results	Verification means
	NC+	NC-	C		
· The dredge must be examined in order to assess its mechanical condition, and it must be verified that excess flue gases are not being emitted.			X	The mechanical conditions of dredging vessels are inspected according to the maintenance plans managed by the AMOS-W system. Dredging vessels bear an energy efficiency and nitrogen oxide emissions certificate of their launching year.	Anexo 2.2.9 Registro de mantenimiento en buques-draga Anexo 2.4.4 Medición de emisiones NOx - FB Anexo 2.4.5 Eficiencia energética - FB Anexo 2.5.4 Medición de emisiones NOx - PAC Anexo 2.5.5 Cert. Eficiencia energética - PAC
· Disposal shall not be performed at offshore locations from June to October due to humpback whale (*Megaptera novaeangliae*) transit during those months as part of their reproductive cycle.			X	Offshore sediment discharges were not performed from June to October since the dredging activities of the assessed period commenced on 29 March 2018 and concluded on 31 May 2018.	Anexo 1.4.1 YPTO-GG-0084 Notificación de Inicio de DragadoAnexo 1.4.2 YPTO-GG-0178 Notificación de Fin de Dragado
· All waste discharges are forbidden, as is any hydrocarbon effluent resulting from washing tanks, bilge water, and generally any other action capable of causing pollution.			X	Environmental managers conducted waste and/or effluent discharge and management.	Anexo 2.4.10 Manifiestos Únicos - FB Anexo 2.5.10 Manifiestos Únicos - PAC
· A leak control kit must be available			X	Dredging vessels are equipped with leak containment (tanks) and control (kits) systems.	Anexo 2.4.9 Registro Fotográfico - Filippo Brunelleschi/ Registro Fotográfico 1 Anexo 2.5.9 Registro Fotográfico - Pedro Alvares Cabral/ Registro Fotográfico 6

Plans/Programs/Measures	ASSESSMENT			Results	Verification means
	NC+	NC-	C		
· Dredges must keep a record of weekly hours worked on sediment disposal			X	Work hours are reported on a daily basis. Dredging vessels are equipped with the AMOS-W maintenance system that records work hours by team.	Anexo 2.3.1 FDC1819_DailyReport_Filippo Brunelleschi_Compilado Anexo 2.3.2 FDC1819_DailyReport_Pedro Alvares Cabral_Compilado
· Discharges must be uniform at different areas within the disposal site. A high-tech monitoring and directing system (GPS device, other) are required to transmit real-time dredge locations, thus avoiding the formation of a bump at the bottom that could change currents.			X	In order to discharge sediments at Canal de Jambelí disposal tank, the disposal site was divided into 100 quadrants of 200 m per side, and the areas for each dredging vessel were assigned based on the available bathymetry.	Anexo 3.1.3 Plano de División Depósito en Canal de Jambelí_FDC1819-SUR-RQ0012-0002-0 Dump Area Anexo 3.5 Mapa de recorrido de dragas (Total Tracks) Anexo 2.3.1 FDC1819_DailyReport_Filippo Brunelleschi_Compilado Anexo 2.3.2 FDC1819_DailyReport_Pedro Alvares Cabral_Compilado
Mark the offshore sediment disposal site			N/A	It was not carried out as it was deemed scarcely viable from a technical and financial perspective (given its 8 linear-kilometer stretch), and due to the minimal impact its performance would achieve. Additionally, it was concluded that implementing signs would endanger the site integrity.	--

Plans/Programs/Measures	ASSESSMENT			Results	Verification means
	NC+	NC-	C		
· Keep a record of the volume disposed of at the offshore site			X	The volume dredged and disposed of in each dredging vessel trip was monitored by means of the daily work report.	Anexo 2.3.1 FDC1819_DailyReport_Filippo Brunelleschi_CompiladoAnexo 2.3.2 FDC1819_DailyReport_Pedro Alvares Cabral_Compilado
· The monitoring programs laid down for offshore locations, water quality, sediments, benthic and planktonic flora, and fauna, mammals, and ichthyology must be complied with as described in the monitoring and tracking plan on this Environmental Management Plan.			X	The monitoring procedures stipulated in the PMA have been conducted and sent to MAE in the Monitoring and Tracking Plan monthly report. No bioassays on shrimp mortality rate (LC-96) were done on December 2018. All other relevant monitoring procedures and analysis were conducted in a timely manner.	Refer to the assessment of compliance with the Monitoring and Tracking Plan
Contingency program for animal rescue It is important to devise a Contingency Plan in case marine animals inadvertently get injured or suffer an accident with the dredge during dredging works or at the disposal site.			X	A plan (defined in this PMA measure) is available, although no incident involving injured marine animals as a result of dredging activities was reported during their performance.	Current Environmental Management Plan
WASTE MANAGEMENT PLAN (PMD)					
PMD -01 DREDGING WASTE MANAGEMENT PROGRAM					

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
Project must identify and properly dispose of waste solids generated. Dredging waste will be disposed of as follows: - Docks 1, 2, 3, 4, 5 and 6 dredging process will be disposed in the sediment deposit area near the Naval Academy specifically in the land arranged. - Dredging sediments from the maneuvering zone and access channel to Puerto Bolívar will be disposed of offshore.		X		All material resulting from the Dredging activities were arranged at the offshore sediment deposit site. These actions were decided because the engineering studies determined, in the preparatory phase, that the deposit site on land presented a risk for the settlements located in the lands surrounding the pool deposit.	Anexo 3.1.5 PRJ-R133-SURCONSUL_Informe Condiciones Estabilidad - Piscina 2Anexo 2.3.1 FDC1819_DailyReport_Filippo Brunelleschi_CompiladoAnexo 2.3.2 FDC1819_DailyReport_Pedro Alvares Cabral_CompiladoAnexo 3.5 Mapa de recorrido de dragas (Total Tracks)
Sediment removal and disposal process will be carried out as described in Project Activities, Chapter 7 of this study.		X		Two TSHD type daggers carried out all dredging activity, and dumping sediment was taken to the deposit basin in the Jambelí Channel. These actions were decided because the engineering studies determined, in the preparatory phase, that the deposit site on land presented a risk for the settlements located in the lands surrounding the pool deposit.	Anexo 3.1.5 PRJ-R133-SURCONSUL_Informe Condiciones Estabilidad - Piscina 2 Anexo 2.3.1 FDC1819_DailyReport_Filippo Brunelleschi_Compilado Anexo 2.3.2 FDC1819_DailyReport_Pedro Alvares Cabral_Compilado Anexo 3.5 Mapa de recorrido de dragas (Total Tracks)

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
Management of common waste product of operating activities of workers will be classified according to provisions of standard NTE INEN 2841: 2014-03. Separation at waste source should be used in containers to facilitate their identification, for later final separation. Separation guarantees the quality of usable waste and its classification; therefore, containers must be differentiated.			X	Dredging vessels have containers for segregation at the source of the waste generated during dredging activities execution, duly identified with a color code.	Anexo 1.3.11 Informe OPERLIMP - Desechos comunes Anexo 2.4.9 Registro Fotográfico - Filippo Brunelleschi/ Registro fotográfico 2 Anexo 2.5.9 Registro Fotográfico - Pedro Alvares Cabral/ Registro Fotográfico 8
Collection procedures must be carried out safely, avoiding waste spillage as much as possible and must not affect loss of separation previously made; waste must be packed in a way that avoids contact with the environment and people in charge of the collection. Containers for collection at the source of generation can be returnable or disposable and must be placed in established collection sites.			X	Dredging vessels have containers for the segregation at the source of the waste generated during dredging activities execution. Subsequently, the wastes is placed in big bags on the roof, until delivered to the environmental manager.	Anexo 2.4.9 Registro Fotográfico - Filippo Brunelleschi/ Registro fotográfico 2Anexo 2.5.9 Registro Fotográfico - Pedro Alvares Cabral/ Registro Fotográfico 8
Infrastructure in the collection and storage areas must be duly signposted, evacuation and internal transport systems will be taken into account. Once the waste has been separated, in its respective containers, these must be stored according to its real feasibility of use and its compatibility, to facilitate its collection and transport.			X	Dredging vessels have a waste classification system that includes properly labeled containers and classification points.	Anexo 2.4.9 Registro Fotográfico - Filippo Brunelleschi/ Registro Fotográfico 2 Anexo 2.5.9 Registro Fotográfico - Pedro Alvares Cabral/ Registro Fotográfico 8
Colored containers must comply with their labeling in a visible place, according to the color code, as described below: (see Chart)			X	Dredging vessels have a waste classification system that includes properly labeled containers and classification points.	Anexo 2.4.9 Registro Fotográfico - Filippo Brunelleschi/ Registro Fotográfico 2 Anexo 2.5.9 Registro Fotográfico - Pedro Alvares Cabral/ Registro Fotográfico 8

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
Common waste will be collected by the municipal collector of the city of Machala and will be transferred to the city's sanitary landfill.			X	Generating common waste from Port Terminal will be delivered to cleaning operators at the Port Terminal (OPERLIMP), and transport to the Municipal Sanitary Landfill. Common garbage generated in the dredging vessels, will also be managed by environmental managers.	Anexo 1.3.11 Informe OPERLIMP - Desechos comunes Anexo 2.4.10 Manifiestos Únicos - FB Anexo 2.5.10 Manifiestos Únicos - PAC
PMD-02 HAZARDOUS AND SPECIAL WASTE MANAGEMENT PROGRAM					
Solid waste from machinery inputs, such as rags impregnated with oil and used fuel, plastic containers and oil filters, will be temporarily accumulated in containers according to the color code described above. - Special Waste (yellow) - Hazardous Waste (red) These will be transferred to the Temporary Storage Area for Hazardous Waste, which will comply with the Ecuadorian Standardization Service (INEN) NTE Standard 2266 Transport, storage and handling of Hazardous Materials. A monthly log must be kept on the generation of hazardous and special waste, all characteristics of waste, volume, origin and final disposal must and will be included. All the hazardous liquid waste generated must be collected in properly labeled hermetic containers and taken to the temporary storage area of hazardous waste for subsequent delivery to a qualified manager. Certificates delivered by the managers must be kept in a specific file that will be prepared and implemented for this type of waste. In addition, Hazardous Waste Generator Registry must be obtained from the National Environmental Authority, as established in Ministerial Agreement 026, 061 and 142.			X	Main hazardous wastes generated (bilge waters, oily waters, sludge) are stored in tanks within the infrastructure of the dredging vessels. Delivery of the declared hazardous wastes to the authorized manager (SERVIDASA) was carried out directly from the tanks of the dredging vessels to the environmental manager authorized tank car, within the Port Terminal, without using its hazardous waste storage facilities SERVIDASA company is in the process of updating its Environmental License with	Anexo 1.1.6 Registro de Generador de Desechos PeligrososAnexo 1.1.7 YPTO-GG-0383-18 Declaración Anual Desechos Peligrosos 2018Anexo 2.4.10 Manifiestos Únicos - FBAnexo 2.5.10 Manifiestos Únicos - PACAnexo 1.3.16 Registro Fotográfico - YILPORTECU/ Registros Fotográficos 5 y 6Anexo 1.3.12 Bitácora de Gestión de Desechos Peligrosos

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
				Ministry of Environment (request MAE-SOL-ART-2018-2167), at moment has the TECHNICAL APPROVAL REQUIREMENTS through Technical Report No. MAE-2018- DPAEO-000671. The company operates with its current Environmental License No. 152-003-SGA-GPAO, duly registered with the Ministry of the Environment (Registration Certificate No. 152 of July 6, 2010) YILPORTECU has a Hazardous Waste Collection Center, although it does not have the necessary signs and facilities During the dredging operations, certain objects on the seabed - mainly metal scrap, tires and rubber buoys - deposited in the beach area adjacent to Pier 5 (SENESCYT property) due to their quantity and / or size, must be managed as special waste	
PMD-03 LIQUID WASTE MANAGEMENT PROGRAM					

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
In the discharge area (Sedimentation Pools), located near the Naval Academy, product of dredging docks 1, 2, 3, 4, 5 and 6, will be deposited, the land is currently vacant. An adequate water drainage system must be established. In addition, the drainage system must consider winter, so that rainwater is properly managed.			X	Pools 1, 2, and 3 have a drainage gate that discharges into the natural channel that in turn empties into the Santa Rosa estuary. However, the pools were not used in the evaluated period.	Anexo 1.3.10 Planos Piscinas de sedimentos
COMMUNICATION AND TRAINING PLAN (PCC)					
PCC-01 TRAINING PROGRAM					
INTRODUCTORY TALK: Talks will be dictated to new workers starting in the project, machinery operators and technical team integrated into the project. Introductory talk will last no longer than 30 minutes, topics to disclose are: - Legislation in force and applicable to the project activities - Importance of the use of personal protective equipment - Waste management - Emergency response - Signaling - Good environmental practices.			X	Crew of dredging vessels receive induction training upon entering the company and / or project. YILPORTECU employees receive an induction upon their entry, however, there has been no new staff assigned to the project.	Anexo 1.3.6 Capacitaciones y simulacros (YILPORTECU) Anexo 2.2.2 Registro de Inducción y material empleado (Flanders Dredging Corporation)
QUARTERLY TALKS: Talks will be directed to all personnel involved in the project activities. Talks will not last more than 60 minutes using didactic material (videos, diagrams, brochures). The main topics to be taught will be: - Safe working conditions - Proper use of tools - Waste management - Fire control - First aid - Procedure in case of accidental spillage of pollutants - Current legislation and applicable to the project activities - Response to labor and natural emergencies			X	During the audited period, talks and training were given to YILPORTECU staff on the following topics: - Practice of oil spills - ISPS code Induction (protection of ships and port facilities) - Emergency plan, procedure and evacuation routes	Anexo 1.3.3 Registro de capacitación_Primeros AuxiliosAnexo 1.3.6 Capacitaciones y simulacros (YILPORTECU)2.2.3 Registro de Charlas de seguridad_compilado - FDC

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
				- Environmental regulations and recycling - First Aid, CPR, handling of fire extinguishers - Casualty transfer practice. Dredging vessels crew received the following talks: - Launch of the Puerto Bolívar Project - Control risks and measures for hydrogen sulfide - Conditions for sawing- Work Hazard Analysis- Cleaning - Socialization of the Contingency and Emergency Plan- Protection of hands and fingers - Safe transfer of personnel - Subcontractor management as on February 2019, a Program of Pre-operational Talks of 15 minutes duration and weekly frequency as positive reinforcement for YILPORTECU staff.	

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
In each talk and training, records will be made, all will include topics covered, trainer data, date and number of hours dictated, and signature of participants, registration format use has been proposed: - Date / Responsible / Topic / Duration / Attendees (name, ID number and signature).			X	Record of attendance at talks and trainings evidence, as well as the material used has been found.	Anexo 1.3.3 Registro de capacitación_Primeros AuxiliosAnexo 1.3.6 Capacitaciones y simulacros (YILPORTECU)2.2.3 Registro de Charlas de seguridad_compilado - FDC
COMMUNITY RELATIONS PLAN (PRC)					
PRC-01 COMMUNITY RELATIONS PROGRAM					
Person in charge of YILPORTECU S.A. project will manage "Community Relations", meetings will be held with the main actors of the project: - Local authorities - Social organizations and communities in the project areas of influence. Approaches should be made with the main authorities of the sector in order to report concerns of the inhabitants and establish communication links between the projects - community - authorities.		X		On April 19, 2018, once Dredging Phase 1 had started, a socialization of the future activities was carried out with representatives of Fishermen's Associations and unions.	Anexo 1.3.18 Registro de socialización
PRC-02 SOCIAL PARTICIPATION PROGRAM					
The Environmental Consultant ECOSFERA CIA. LTDA and the YILPORTECU company will coordinate along Ministry of the Environment, dissemination mechanisms and informative talks to social actors involved and surrounding community about the project, in accordance with provisions of Executive Decree 1040 and Ministerial Agreement 103. At the public exhibition hearing of the project, in addition to the Environmental Impact Study, activities to be executed and the benefits of the project will be exposed.			X	Done as part of the Project's Environmental Regularization procedure, in June 2017, prior to obtaining the Environmental License.	Anexo 1.3.4 Acta y registro de asistencia_Reunión informativa-Participación Social
PRC-03 FILLING MATERIAL DONATION PROGRAM					

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
YILPORTECU company, within its Environmental Management Plan, commits to respond to requests for donation of material (sediments extracted from dredging), to fill in urban and rural areas of the province, as well as irregular settlements where required. Companies, educational units, communities and people who require this collaboration may direct their request to the offices of YILPORTECU S.A., where they will be processed; the material delivery due to its characteristics and its physical composition is suitable, as filling material will be planned.			**N/A**	During the audited period, no institution, community or person requested donations of material resulting from dredging activities, all the material was disposed of at the offshore deposit site.	Anexo 2.3.1 FDC1819_DailyReport_Filippo Brunelleschi_Compilado Anexo 2.3.2 FDC1819_DailyReport_Pedro Alvares Cabral_Compilado
CONTINGENCY PLAN (PDC)					
PDC-01 EMERGENCY AND CONTINGENCY RESPONSE PROGRAM					
The company YILPORTECU S.A., must establish a security mechanism in response to any emergency that may arise during project activities. This mechanism must establish responsibilities to respond immediately to possible events (natural disasters, work accidents, etc.) that may occur.			**X**	Both YILPORTECU and the contractor Flanders Dredging Corporation have their respective Emergency and contingency plans.	Anexo 1.2.5 Procedimiento de EmergenciasAnexo 2.1.2 Planes de Contingencias - FDCAnexo 2.1.3 Planes de Contingencia - Derrames_SOPEP
A responsible person must be designated at the work front and will be in charge of applying the CONTINGENCY PLAN, directing the actions in the event of an emergency. This in turn may designate responsibilities to other workers.			**X**	Both YILPORTECU SA and the contractor Flanders Dredging Corporation have their respective Security Managers, and have delegates who lead the care of contingencies. The functional managers are established in the respective emergency procedures.	1.2.1 Reglamento Interno de Seguridad y Política HSE - SUT Anexo 1.2.5 Procedimiento de Emergencias Anexo 2.1.2 Planes de Contingencias - FDC Anexo 2.1.3 Planes de Contingencia - Derrames_SOPEP

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
The workforce must know these instructions to follow in case of Emergency: • Notify the person in charge of contingencies and emergencies • The person in charge must determine the degree and type of emergency: fire, accident (report alert or alarm) • Report the emergency to ECU 911 • Keep bystanders away, if necessary make a human cordon • Prohibit the entry of people to the site where the event took place; all signs or barriers such as danger tapes, cones, etc. will be placed • Make the personnel aware of the places of risk of fire, falls, etc., placing the necessary informative or preventive signage in key places to avoid work accidents • Familiarize staff with safety information, placing ECU 911 telephone number, in visible places.			X	YILPORTECU and contractor Flanders Dredging Corporation personnel has been trained in case of contingencies.	1.3.3 Registro de capacitación_Primeros AuxiliosAnexo 1.3.6 Capacitaciones y simulacros (YILPORTECU)2.2.3 Registro de Charlas de seguridad_compilado - FDC
Personnel should be trained in first aid issues.			X	First aid talks have been given to YILPORTECU personnel and a joint practice has been carried out (with the contractor Flanders Dredging Corporation) in the care and transfer of the injured.	1.3.3 Registro de capacitación_Primeros Auxilios 1.3.14 Reporte práctica de traslado de herido_YILPORTECU-FDC
It is necessary to keep an updated registry of aid institutions with addresses and telephone numbers (Red Cross, Fire Department, National Police, Emergencies, Risk Management, Hospitals and Clinics).			X	An updated record of emergency telephone numbers is kept, and described in the respective contingency plans.	Anexo 1.2.5 Procedimiento de Emergencias Anexo 2.1.2 Planes de Contingencias - FDC Anexo 1.2.5 Procedimiento de Emergencias (extracto).

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
It will also be the responsibility of the company Industrial Safety Manager, to develop the following plans: • Fuel maneuvering plan • Firefighting plan • Man overboard plan • Ship abandonment plan • Fuel spill control plan • Collision and boarding plan • Operational analysis of plans • Risk Management Plan.			X	YILPORTECU includes in its Emergency and Contingency Plan: - Explosions in temporary cargo holds - Surface spills of fuel from vessels - Fires in port facilities - Accumulation of solid and hazardous waste - Failure in the transformer system - Theft and assaults on port facilities - Strikes and traps due to falls of suspended objects - Falls inside the commercial cargo ship type loose cargo and containers. Within the Incident / Accident Reports, an Operational Analysis is included. Flanders Dredging Corporation have the following: - Emergency response in case of accidents (marine injuries) - Response in case of emergencies (marine emergencies): fire, collision, breach of security, oil spills, and natural disasters.	Anexo 1.2.5 Procedimiento de EmergenciasAnexo 2.1.2 Planes de Contingencias - FDCPlan de Contingencias de YILPORTECU S.A.

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
PDC-02 FUEL MANAGEMENT PROGRAM					
Condition of dredgers, couplings and hoses should be checked to verify that their engines do not spill oil, it is also necessary to verify that emergency equipment is complete and operational.			**X**	Dredging vessels have procedures for loading and unloading of fuels, and for dealing with spills, which include permanent control of the elements of the conduction and storage systems. Dredging vessels crew performs routine inspections of fuel supply systems and oil and lubricant flow. Dredging vessels have a pipeline leak detection system.	Anexo 2.2.9 Registro de mantenimiento en buques-draga Anexo 2.1.4 Procedimiento de carga de combustible - FDC Anexo 2.1.3 Planes de Contingencia - Derrames_SOPEP Anexo 2.1.5 Plan de Inspecciones de Seguridad_General overviewlist ISM-ISPS Jobs - FDC
WORKPLACE SAFETY AND HEALTH PLAN (PSS)					
PSS-01 INDUSTRIAL SAFETY PROGRAM					

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
YILPORTECU S.A. company must have the Internal Health and Safety Regulations at Work aligned with what is established with the Ministry of Labor, complying with Executive Decree 2393 and other legal bodies that govern Ecuador. Health and Safety policies will be applied in all activities, in such a way that works are carried out free of risks and accidents and, if there are any, these are communicated for evaluation and subsequent adoption of mechanisms so that in the future these are minimized. To achieve objectives and policies referred to above, the plan contains the following basic components: Statement of corporate policy and management commitment to health, safety and environmental programs, training and safety program, communication procedures, reporting and investigation for incidents and accidents presentation procedures.			X	The company has Internal Safety Regulations and Integrated Safety, Health and Environment Policy, duly registered in the SUT, and has been shared with the staff.	Anexo 1.2.1 Reglamento Interno de Seguridad y Política HSE - SUTAnexo 1.3.1 Registro entrega de RIS y Política HSE
HEALTH AND SAFETY POLICY. The company's Health and Safety policy applies to all its operations and projects. In order for the institution to achieve its objective of protecting the health and safety of workers, it will communicate its policy to all its employees and dependent workers and use it as the basis for its health and safety program. The policy sets forth the institution's desire to achieve an accident-free workplace by meeting all regulatory requirements, communicating potential hazards to its employees and other stakeholders, and providing appropriate training and equipment to its employees. The policy also defines the institution's expectations with respect to its employees and contractors holding them responsible for protecting the health and safety of themselves and their colleagues.			X	The company has Internal Safety Regulations, an integrated Safety, Health and Environment Policy, duly registered in the SUT and has been socialized with the staff.	Anexo 1.2.1 Reglamento Interno de Seguridad y Política HSE - SUTAnexo 1.3.1 Registro entrega de RIS y Política HSE
SAFETY TRAINING					

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
YILPORTECU S.A., will ensure that all workers comply with the Program of Comprehensive safety training including the following main aspects: • Institution safety environmental policies and standards • Worker responsibilities for work clothing • Specific job hazards • Safety precautions • Job responsibilities • Regulatory requirements • Policies of normative observance of the institution.			X	There have been events of training and training in topics such as safety regulations, work risks, oil spill, emergency plan, evacuation procedures and routes, first aid, among others.	Anexo 1.3.1 Registro entrega de RIS y Política HSEAnexo 1.3.3 Registro de capacitación_Primeros AuxiliosAnexo 1.3.6 Capacitaciones y simulacros
SAFETY MEETINGS					
The person in charge of Industrial Safety will prepare a series regular safety meetings to verify compliance with environmental and operational safety procedures. Assistance will be taken in these meetings.			X	A planning meeting was held prior to the start of dredging operations, between the occupational health and safety representatives of YILPORTECU and FLANDERS DREDGING CORPORATION. Subsequently, there was a joint practice of transferring the wounded (04/25/18); and contact was maintained between the parties until the completion of the dredging activities in Phase 1. During the execution of dredging activities, constant communication and coordination were	Anexo 1.3.14 Reporte práctica de traslado de herido_YILPORTECU- FDC Anexo 1.3.15 Comunicaciones Seguridad YILPORTECU-FDC Anexo 1.3.16 Registro Fotográfico - YILPORTECU/ Registro fotográfico 8
INCIDENT AND ACCIDENT REPORTS					

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
Industrial Safety Officer will report security incidents and accidents and should complete an accident report as soon as possible. Industrial Safety Officer should create a reporting system for: - Occupational injuries or illnesses - Injuries that can be treated on site (medical aid) - Property losses (fire, explosion, spills, vehicular accidents).			X	There were no incidents or accidents to report during the execution of the dredging. A simulation of transport of injuries was carried out between YILPORTECU SA and the dredging contractor Flanders Dredging Corporation	1.3.13 Formato_Ecuador KPI Table_EHS_2018 Anexo 1.3.14 Reporte práctica de traslado de herido_YILPORTECU-FDC
INCIDENTS AND ACCIDENTS REPORTING AND INVESTIGATION					
Workers will immediately notify the Industrial Safety Technician about safety incidents and, in turn, Technician must create a reporting system for: - Fatalities. - Occupational injuries or illnesses. - Wounds that can be treated on site (medical aid). - Loss or damage to property (fire, explosion, spillage, accident vehicles). - All incidents			X	There were no incidents or accidents to report during the execution of the dredging activities.	1.3.13 Formato_Ecuador KPI Table_EHS_2018
PSS-02 OCCUPATIONAL HEALTH PROGRAM					
MEDICAL EXAMS					
Starting, a file must be kept with the medical records of workers with their respective pre-occupational tests. Files will be doctor-patient character confidential.			X	All new personnel must receive a medical examination as requirement. YILPORTECU is in the process of selecting an operator of medical services on Port Terminal.	Anexo 1.3.7 Proceso de Contratación de Servicios Médicos
First aid kits					

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
Inspection and maintenance records of medicine cabinets in the operational area of the Project must be available. In addition, medications replacement if necessary will be made. The status and availability of the first aid kit must be checked frequently.			X	In the Port Terminal, there is an inventory of first-aid kits and their endowment. Replacement is carried out annually or whenever it is requested by the person in charge of the first aid kit in the area. Now there are 6 first aid kits of 12 points, installed where first aid medications are provided. The PAC dredging vessel has first aid kits in different work areas.	Anexo 1.3.9 YECU-EHS-02-01_Informe Botiquines 2019_1 W 09Anexo 2.5.9 Registro Fotográfico - Pedro Alvares Cabral/ Registro Fotográfico 2
PSS-03 PERSONAL PROTECTIVE EQUIPMENT PROVISION PROGRAM					

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
The workforce must have safety implements. Following measures must be considering when it is required to acquire new PPE or to restore damaged. General Provisions. YILPORT ECU SA, must require workers to use PPE within the project activities. The use of personal protection equipment will be mandatory. Without prejudice to its effectiveness, the PPE will allow, as far as possible, performance of work without unnecessary inconvenience for the workers and without reducing their performance ... The employer will be obliged to provide the proper personal protective equipment and will consist of the following elements: • Work clothes, reflective vests, helmets, steel toe boots, gloves, masks, safety glasses, hearing protectors, safety harness for work heights, and other PPE Safety technician determines necessary.			X	Staff have been provided with clothing of work and PPE's as established in the document 'Procedure for the use of YILPORTECU uniforms' Cod. YECU-EHS-03-044, and determined according to the document 'Analysis of Occupational Risks by job position.' The crew of the dredging vessels are provided with high visibility work clothes, non-slip steel-toed boots, helmets and safety glasses, respiratory protection in specific areas, mechanical traction gloves, and other specialized equipment such as harnesses and lifelines, and life jackets. In every work area where it is required, there are earplug dispensers.	Anexo 1.3.2 Registro de entrega EPP'sAnexo 2.1.6 Manual de uso EPP y factura de compraAnexo 2.2.5 ECU-1819-YIL-Confirmation Of Receipt PPE
PSS-04 SIGNALING PROGRAM					

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
Both preventive and restrictive signage should be implemented in the project areas of intervention Signage design (colors, symbols, measurements, etc.) must be carried out in accordance with the INEN ISO - 3864-1: 2013 standard. DESIGN FOR SAFETY SIGNS Safety colors, contrasting colors and geometric figures, should only be used in the following combinations to obtain the five types of safety signs: - PROHIBITION SIGNS - MANDATORY ACTION SIGNS - CAUTION SIGNS - SAFE CONDITION - FIRE EQUIPMENT SIGNS.			X	The dredging vessels participating in dredging activities have adequate safety signs for their needs and facilities.	Anexo 2.5.9 Registro Fotográfico - Pedro Alvares Cabral/ registro Fotográfico 5
PSS-05 EXTINGUISHING AGENTS INSTALLATION PROGRAM					
Within the project areas, extinguishing agents must be installed according to the characteristics of the areas and the recommendations of the Safety technician. The extinguishers must be installed in places of easy access and clear identification, free from any obstacle, and must be in maximum operating conditions permanently. Technician in charge of Occupational Health and Safety of YILPORECU SA company must check and recharge fire extinguishers. To do this, an inspection sheet must be made, where extinguisher number, location, type of extinguishing agent, date of last recharge, responsible and state in which the extinguisher is located, should be included. In addition, the staff must be trained in the handling and use of fire extinguishers, as well as being informed of the measures that must be complied with to prevent the occurrence of fires. Signs, which must be placed in the area where the fire extinguishers are located, are as follows: SQUARE from the wall, above the equipment, high enough to be seen over the surrounding obstacles and from proper distance. STRIP: 0.05 m wide over the floor, around equipment, leaving 0.20 m free on each side and 0.50 m free to the front.			X	Dredging vessels have a fire-fighting system that includes a wet network, a network of manual extinguishers, sprinkler system, and foam. In the Port Terminal, there are extinguishing agents in office areas, and a wet network that covers the exterior of buildings, warehouses and container yards. However, the wet network does not have a pressure pump. Now, YILPORTECU is working on the design for the re-empowerment of the wet network against fires.	Anexo Anexo 2.5.9 Registro Fotográfico - Pedro Alvares Cabral/ registro Fotográfico 4Anexo 1.2.7 Plan de Mantenimientos del Sistema ContraincendiosAnexo 1.2.9 Plano de ExtintoresAnexo 1.3.16 Registro Fotográfico - YILPORTECU/ Registro Fotográfico 7
MONITORING AND MONITORING PLAN (PMS)					
PMS-01 ENVIRONMENTAL QUALITY CONTROL PROGRAM					
AIR QUALITY MONITORING					

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
Ambient air quality and noise levels quarterly monitoring in the area of operation should be performed to determine if negative impacts have been generated to the environment. Monitoring points are detailed below: Point 1. Piers APPB (610951, 9639819). Monitoring must be carried out with calibrated equipment and following the monitoring methodology established in Annex 4 of Book VI of the Unified Text of Secondary Legislation of the Ministry of the Environment issued by Ministerial Agreement 097 - A.			X	Air quality monitoring was carried out according to schedule defined (quarterly), except for January-March 2018 quarter; results were presented to the Ministry of the Environment: - Monitoring corresponding to the first quarter January-March 2018 was not carried out, but the monitoring was carried out in the month of May 2018, entered through Official Letter No. YPTO-GG-0183-18 on June 15, 2018; - June 2018, entered by Official Letter No. YPTO-GG- 0237-18 on July 31, 2018; - September 2018, entered through Official Letter No. YPTO-GG- 0329-18 on October 30, 2018; - December 2018, entered through Official Letter No. YPTO-GG- 0053-19 on February 26, 2018. All monitoring was performed by a laboratory duly accredited to the SAE, 100% of monitored parameters.	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento Anexo 3.3.12 Registro de resultados de monitoreos de calidad de aire

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
				Comply with the LP's established in Ministerial Agreement 097A, Annex 4: Air Quality Standard or Emission Level, Section 4.1.2 General standards for pollutants concentrations, criteria in ambient air. Next monitoring was carried out on March 26, 2019, and corresponded to the month of March 2019.	
NOISE MONITORING					

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
Noise monitoring must be done following the standards of the Ecuadorian Accreditation Service - SAE. Following these points: Point 1. Pier # 1 (610941, 9639369). Point 2. APPB Administrative Area (611136, 9639401) Point 3. Pier # 5 (611014, 9640135) Point 4. Puerto Bolívar Cabotage Pier (610892, 9639050). When measurement are made, the following must be taken into account: - Identification of the source, name or company name, responsible party and address. - Location of the source. - Approximate location of the measurement points. - Type of measurement performed. - Description of measurement equipment used.- Names of the technical personnel who carried out the measurement.- Date and time the measurement was carried out. - Detected observations - Applicable corrections - Noise emission level monitoring value must be carried out with calibrated equipment and following the monitoring methodology established in Annex 5 of Book VI of the Unified Text of Secondary Legislation of the Ministry of the Environment issued by Ministerial Agreement 097 - A.			X	Noise monitoring was performed according to defined schedule (quarterly), except for January-March 2018 quarter, the results were sent to the Ministry of Environment, following these points: - Monitoring corresponding to the first quarter January-March 2018 was not carried out, but later in the month of May 2018, entered through Official Letter No. YPTO-GG-0183-18 on June 2018; - June 2018, entered through Official Letter No. YPTO-GG-0237-18 on July 31, 2018; - September 2018, entered through Official Letter No. YPTO-GG-0329-18 on October 2018; and, - December 2018, entered by Official Letter No. YPTO-GG-0053-19 on February 2018 All monitoring was carried out by a laboratory duly accredited by SAE. 68.8% of the monitored parameters, among all the monitoring points, comply with the LMP's	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y SeguimientoAnexo 3.3.13 Registro de resultados de monitoreos de ruido

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
				Maximum Emission Levels of Noise and Measurement Methodology for Fixed Sources and Mobile Sources, Chart 1: Maximum Noise Emission Levels (LKeq) for Fixed Noise Sources; although 100% of the measurements comply with the Regulation of Health and Safety of Workers and Improvement of the Work Environment, Art. 55 Noise and Vibration. However, it is important to emphasize that 2 of the 5 breaches presented are located outside the Port Terminal (P4. Cabotage Pier), corresponding to an area with very high traffic of people and intensive use of speakers at very high volume made by bars and restaurants. The following monitoring to be performed, corresponds to the month of March 2019, and was carried out on March 26, 2019.	
Registration and analysis:					

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
A registration system should be established for all the monitoring executed. Also, evaluations of results obtained. Establish new control measures, in the event that the results do not comply with the permissible limits established by current environmental regulations.			X	There is a record of results of the monitored parameters as an Excel database, allowing monitoring and analysis.	Anexo 3.3.12 Registro de resultados de monitoreos de calidad de aireAnexo Anexo 3.3.13 Registro de resultados de monitoreos de ruido
PMS-02 WATER RESOURCE ENVIRONMENTAL QUALITY CONTROL PROGRAM					
WATER QUALITY MONITORING					
Monthly monitoring of control points established in the environmental baseline will be performed; these will be compared with the permissible limits of Chart 2. Admissible Quality Criteria for the preservation of aquatic and wild life in fresh, marine and water waters estuaries from Annex 1, Book VI of the Unified Text of Secondary Legislation of Ministry of the Environment, issued by Ministerial Agreement 097 - A. Monitoring will be carried out according to the location of dredging works on activity, otherwise monitoring will not be performed. Monitoring points are located in the Santa Rosa Swamp at different points described below: Point 1. In front of APPB (610680, 9639902, 0.6) Point 2. In front of Naval Academy (610682, 9640521, 0.6). Point 3. Island of Love (610505, 9641879, 0.6). Point 4. El Coco entrance (611365, 9645418, 0.6). Point 5. Punta El Faro (608302, 9646721, 0.6). Point 6. Jambelí entrance (609094, 9642541, 0.6). **Parameters to be monitored are the following**: • Arsenic • Cadmium • Total chromium • • Copper • Iron • Mercury • Fecal Coliforms • Detergent Surfactants • Oils and Fats • Biochemical Oxygen Demand • Chemical Oxygen Demand • Total Petroleum Hydrocarbons • Dissolved Oxygen in situ • Ammonia • Total Suspended Solids. • Organophosphate, organochlorine, Organonitrogen, and carbamate pesticides. All water quality analyzes will be executed in laboratories SAE accredited. **Sampling**: Water samples will be simple and punctual. A sampling record sheet must be filled and will include the following information: - Responsible party.- Date, time and place.- Number of samples taken.- Preservation method used for samples.- Name of the laboratory that will analyze samples and name of the person responsible or in charge of the analyzes and results delivery			X	Water quality monitoring was carried out according to the defined schedule (monthly during dredging activities, and quarterly when no dredging activities), the results were presented to the Ministry of the Environment, according to: - March 2018, entered through Official Letter No. YPTO-GG-0110-18 on April 24, 2018; - April 2018, entered through Note No. YPTO-GG- 0157-18 on May 29, 2018; - May 2018, entered through Note No. YPTO- GG-0183-18 on June 15, 2018; - August 2018, entered through Official Letter No. YPTO-GG-0303-18 on September 2018; - November 2018, entered through Official Letter No. YPTO-GG-0382-18 on December 2018; -	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y SeguimientoAnexo 3.3.14 Registro de resultados de monitoreos de calidad de agua

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
- Name and signature of the person responsible for transportation - Notes or observations.- Date and signature of samples received in the laboratory. In addition, the use of suitable containers for taking samples will be verified. For most parameters, samples can be collected in hermetically sealed plastic containers, however the quantification of COD (Chemical Oxygen Demand) and TPH (Total Hydrocarbons), requires the use of dark glass containers.				entered by Official Letter No. YPTO-GG-0053-19 on 26 of February 2019; carried out outside schedule, and; - February 2019, entered by official letter No. YPTO-GG-0077-19, on 04/11/2019 All monitoring was carried out by a laboratory duly accredited by the SAE. 98.84 % of monitored parameters among all evaluated points of monitoring comply with established LMP´s of Ministerial Agreement 097A, Annex 1: Environmental Quality Standard and Effluent Discharge to Water Resources, Chart 2: Admissible Quality Criteria for the preservation of aquatic and wild life in Fresh Waters, Marinas and Estuaries.	
Registration and analysis:					
A registration system must be established for all the monitoring carried out. Performing evaluations of results obtained and establishing new control measures, in case the results do not comply with the permissible limits established by current environmental regulations. Samples will be carried out every two months as long as the company performs operations on the project.			X	There is a record of results of the monitored parameters as an Excel database, allowing monitoring and analysis of the results.	Anexo 3.3.14 Registro de resultados de monitoreos de calidad de agua

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
PMS-03 SEDIMENTS IN SOIL ENVIRONMENTAL QUALITY CONTROL PROGRAM					
Monitoring Points: Sediment monitoring will be carried out according to information gathered to establish project baseline. Sediment monitoring points are detailed below Point 1. In front of APPB (610680, 9639902, -2). Point 2. In front of Naval Academy (610682, 9640521, -4). Point 3. Island of Love (610505, 9641879, -6). Point 4. El Coco entrance (611365, 9645418, -2.5). Point 5. Punta El Faro (608302, 9646721, -7). Point 6. Jambelí entrance (609094, 9642541, -8). Point 7. Sediment pools (611860, 9640136). The monitored parameters will be carried out according to directions in Chart 1. Soil Quality Criteria of Annex 2 of the Unified Text of Secondary Legislation of Ministry of the Environment issued by Ministerial Agreement 097-A. Following parameters will be monitored: - Arsenic - Chromium - Cadmium - Copper - Iron - Mercury - Lead - Total Petroleum Hydrocarbons - Hydrogen Potential - Organochlorine, organophosphate, Organonitrogenized, and carbamate pesticides. **Sampling:** YILPORECU or the consulting company hired must have experience in taking samples, as well as follows protocols of the accredited laboratory that performs the analysis of the samples and will be responsible for coordinating sediment monitoring. Analyses must be carried out by a Laboratory Accredited to Ecuadorian Accreditation Services. The results obtained from sediment analysis laboratory will be compared with the Canadian standard: Canadian Environmental Quality Guidelines.			**X**	Soil quality monitoring was performed according to schedule defined (monthly during dredging operations, quarterly when no dredging operations), and the results were presented to Ministry of the Environment, according to - March 2018, entered by Official Letter No. YPTO-GG-0110-18 on April 24, 2018 - April 2018, entered through Official Letter No. YPTO-GG-0157-18 on May 29, 2018 - May 2018, entered through Official Letter No. YPTO-GG-0183-18 on June 15, 2018 - August 2018, entered through Official Letter No. YPTO-GG-0303-18 on September 2018 - November 2018, entered through Official Letter No. YPTO-GG-0382-18 on December 2018 - December 2018, entered through Official Letter No. YPTO-GG-0053-19 on February 2018; outside schedule, and; - February 2019, entered by official letter No. YPTO-GG- 0077-19, on 04/11/2019.	Anexo Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y SeguimientoAnexo 3.3.15 Registro de resultados de monitoreos de sedimentos

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
				All the monitoring were executed by a duly SAE accredited laboratory. Out of the total measurements performed, 97.26% comply with the LMP's or do not have a defined LMP, while 1.76% of the total do not comply with the LMP's established in Chart 1. Soil Quality Criteria of Annex 2 of the Unified Text of Secondary Legislation of Ministry of the Environment issued by Ministerial Agreement 097-A and 30 results (0.98% of the total) do not comply with the LMP's established in the Canadian Environmental Quality Guidelines.	
PMS-04 SHRIMP MORTALITY BIOASSAYS PROGRAM					

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
Mortality of shrimp postlarvae Litopenaeus vannamei will be determined through Bioassays, produced by exposure of suspended sediments in concentrations of 10%, 50% and 100%, in laboratory conditions with dredging simulation. Monitoring Points: Sediment monitoring will be carried out according to information gathered to establish line project basis. Sediment monitoring points are detailed below: Point 1. In front of APPB (610680, 9639902, -2). Point 2. In front of Naval Academy (610682, 9640521, -4). Point 3. Island of Love (610505, 9641879, -6). Point 4. El Coco entrance (611365, 9645418, -2.5). Point 5. Point El Faro (608302, 9646721, -7). Point 6. Jambelí entrance (609094, 9642541, -8).			X	Bioassays of shrimp mortality according to schedule defined, and results, were presented to Ministry of the Environment: - March 2018, entered by Official Letter No. YPTO-GG-0110-18 on April 2018; - April 2018, entered through Official Letter No. YPTO-GG-0157-18 on May 29, 2018; - May 2018, entered through Official Letter No. YPTO-GG- 0183-18 on June 15, 2018; - June 2018, entered through Official Letter No. YPTO-GG-0237-18 on July 31, 2018; - July 2018, entered through Official Letter No. YPTO-GG-0270-18 on July 23, August 2018; - August 2018, entered through Official Letter No. YPTO-GG-0303-18 on September 2018; - September 2018, entered through Official Letter No. YPTO-GG- 0329-18 on October 30, 2018; - October 2018, entered by Official Letter No. YPTO-GG- 0360-18 on November 28, 2018; - November 2018, entered	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
				- Monitoring was performed in December 2018 - January 2019, entered through official letter YPTO- GG.0060-19 on March 14, 2019; and - February 2019, entered by official letter No. YPTO-GG-0077-19, on 04/11/2019. February 2019, entered by official letter No. YPTO-GG-0077-19, on 04/11/2019.	
PMS-05 OFFSHORE SEDIMENT DEPOSIT SATELLITE MONITORING PROGRAM					
Dredging product from maneuvering zone and Access Channel to Puerto Bolívar will be taken to an area in the high seas. Vessels must have a satellite tracking system, in order to monitor the site of substrate arrangement.			X	There is a geo-referenced database by means of a DGPS device of the respective dredging vessels, where minute-by-minute movements are recorded during the dredging activities carried out between March 29 and May 31, 2018. Reports were also made Dredging logs for each of the dredging vessels where the specific dumping area is established.	3.5 Mapa de recorrido de dragas (Total Tracks)Anexo 2.2.6 Marcas de posición diaria _Filippo Brunelleschi (solo en copia digital) Anexo 2.2.7 Marcas de posición diaria _Pedro Alvares Cabral (solo en copia digital)Anexo 2.3.1 FDC1819_DailyReport_Filippo Brunelleschi_CompiladoAnexo 2.3.2 FDC1819_DailyReport_Pedro Alvares Cabral_Compilado
PMS-06 PHYTOPLANKTON AND ZOOPLANKTON SPECIES MONITORING PROGRAM					

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
Control performing of phytoplankton and zooplankton amounts in the area of marine influence by taking samples. Periodic evaluation of this resource will be carried out preferably quarterly. Measurement records will be kept and will be compared with values obtained in the project's environmental baseline.				Biotic monitoring was executed according to defined schedule, and the results were presented to Ministry of the Environment: - April 2018, entered through Official Letter No. YPTO-GG-0157-18 on May 29, 2018; - June 2018, entered through Official Letter No. YPTO-GG- 0237-18 on July 31, 2018; - July 2018, entered through Official Letter No. YPTO-GG-0270-18 on August 23, 2018; - August 2018, entered through Official Letter No. YPTO-GG- 0303-18 on September 28, 2018; - October 2018, entered by Official Letter No. YPTO-GG-0360-18 on November 28, 2018; Y, - December 2018, entered through Official Letter No. YPTO-GG- 0053-19 on February 26, 2018; Y, - February 2019, entered by official letter No. YPTO-GG-0077-19, on 04/11/2019.	Anexo 3.3.0 Oficios de ingreso_Informes de Monitoreo y Seguimiento
PMS-07 BIOAQUATIC SPECIES MONITORING PROGRAM					

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
Bi-monthly monitoring of mollusks and crustaceans, in custody areas of mangrove swamps located within the project's area of influence: - Artisanal Fisheries Production Cooperative - Vikingos del Mar - Estero Porteño Artisan Women Association - La Playita Tourist Services Community Organization.			X	Biotic monitoring was executed according to schedule defined, and the results were presented to Ministry of the Environment: - April 2018, entered through Official Letter No. YPTO-GG-0157-18 on 29 May 2018; - June 2018, entered through Official Letter No. YPTO-GG-0237-18 on July 31, 2018; - July 2018, entered through Official Letter No. YPTO-GG-0270-18 on August 23, 2018; - August 2018, entered by Official Letter No. YPTO-GG- 0303-18 on September 28, 2018; - October 2018, entered through Official Letter No. YPTO-GG- 0360-18 on November 28, 2018; - December 2018, entered through Official Letter No. YPTO-GG-0053-19 on February 2018; and -	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento
PMS-08 FLORA AND FAUNA MONITORING PROGRAM					

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
A monitoring of Planktonic and Benthic Flora and Fauna will be made, sighting of marine mammals and ichthyofauna in the high seas deposit area reports, including a monitoring point at the limit of the Isla Santa Clara Marine Reserve.			X	Biotic monitoring was performed according to schedule defined, results were presented to Ministry of the Environment: - April 2018, entered through Official Letter No. YPTO-GG-0157-18 on 29 May 2018; - June 2018, entered through Official Letter No. YPTO-GG-0237-18 on July 31, 2018; - July 2018, entered through Official Letter No. YPTO-GG-0270-18 on August 23, 2018; - August 2018, entered by Official Letter No. YPTO-GG- 0303-18 on September 28, 2018; - October 2018, entered through Official Letter No. YPTO-GG- 0360-18 on November 28, 2018; - December 2018, entered by Official Letter No. YPTO-GG-0053-19 on December 26 February 2018; and, - February 2019, entered by	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento
PMS-09 ENVIRONMENTAL MONITORING AND MONITORING PROGRAM					

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
The environmental Supervision and Inspection as piece of the actions to reach fulfillment of the Environmental Management Plan constitutes a system of evaluation, follow-up and monitoring of the environmental measures and programs contemplated in the EMP, in order to provide feedback and optimize the environmental control and management processes. A monitoring matrix will be applied to monitor the occurrence, remediation and control of environmental impacts as well as the execution of the proposed measures. This plan will allow obtaining records that facilitate correcting and optimizing measures of efficiency, implemented to identify impacts involved, as well as allowing control in the application of environmental measures and programs. YIPORTECU SA company must consider hiring a qualified consulting company and inspector of the Environmental Management Plan, which will be in charge of monitoring and controlling environmental measures applied by the executing company.			**X**	Inspection reports have been made on a monthly basis in the period between April and December 2018, and January to March 2019.	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento
ABANDONMENT PLAN AND DELIVERY OF THE AREA (PAE)					
PAE-01 CLOSING PROGRAM, ABANDONMENT AND DELIVERY OF THE AREA					
Once the Dredging and operation of the Project has been completed, machinery removal, equipment and solid waste and cleaning of the docks will be verified. The correct disposition of material in the sediment deposit area (sedimentation pools) will be verified. In addition, for the removal of the facilities, responsible for the project, should consider carrying out an Inventory of the metallic structures and equipment. Once the dredging tasks are completed, an Environmental Report will be issued on the Execution of Dredging of SPRINGS 1, 2, 3, 4, 5 AND 6, MANEUVERING ZONE AND ACCESS CHANNEL OF PUERTO BOLÍVAR. In summary, the Abandonment Plan should consider two main stages: 1. The first stage will be associated with the completion of all use activities and will contain the following components: - Dismantling of machinery, facilities and structures - Removal of debris - Treatment of waste based on its classification			**N/A**	The Project and its environmental license are in force. Dredging operations will restart on April 1, 2019.	Anexo 1.4.9 PRJ-R252-MAE_Baja proceso administrativo

Plans / Programs / Measures	EVALUATION			Results	Means of verification
	NC+	NC-	C		
During disassembly, measures must be taken to prevent Generation/propagation of noise and dust, and properly disposing of liquid and solid waste generated as well as the prevention of accidents. 2. The next stage is related to the recovery of sites that were intervened and includes the following activities: - Leveling and reshaping of the ground. - Adaptations to allow a new use of the area prior to the start of the abandonment activities of the place. A schedule must be elaborated containing all activities that must be implemented in the Abandonment Plan and maintain coordination with competent authorities for the correct execution of the planned activities. **STAGES OF PREPARATION OF THE ABANDONMENT AND CLOSURE PLAN** Environmental Inspection In the execution of the Environmental Inspection, the following must be identified: - Signs of contamination in soil by solid waste; - State of the infrastructure; - Land use and topography - - Determine demolition and dismantling requirements, and perform an environmental sensitivity assessment and identification of sources of pollutants.					

Prepared by: *ECOSAMBITO Cía. Ltda.*

Chart 7-6 Evaluation results of compliance with Environmental Management Plan

Results	Quantity	%
TOTAL MEASURES	75	
COMPLIANCE	66	94%
NON-CONFORMITY MINOR	4	6%
NON-CONFORMITY GREATER	0	0%
DOES NOT APPLY (N/A)	5	--

Prepared by: *ECOSAMBITO Cía. Ltda.*

7.4 COMPLIANCE EVALUATION OF THE MONITORING AND FOLLOW-UP PLAN

Chart 7-7 shows compliance evaluation on criteria and measures established in the plan performed. Chart 7-8 shows the summary of the result of compliance evaluation according to obligations derived from Environmental License MAE-RA -2017-297974.

Chart 7-7 Compliance Evaluation of the Environmental Monitoring and Follow-up Plan

Environmental Management Measures	Evaluation NC+	NC-	C	Findings	Means of Verification
MONITORING AND MONITORING PLAN (PMS)					
PMS-01 AIR QUALITY CONTROL PROGRAM					
Air quality monitoring					
Has the established frequency for air quality monitoring been met?			**X**	Air quality monitoring was performed according to the schedule defined (quarterly), except for January-March 2018 quarter, and results were presented to Ministry of the Environment, according to: - The monitoring corresponding to the first quarter January-March 2018 was not carried out, but on May 2018, entered through Official Letter No. YPTO-GG-0183-18 on June 15, 2018; - June 2018, entered through Official Letter No. YPTO-GG-0237-18 on July 31, 2018; - September 2018, entered by Official Letter No. YPTO-GG-0329-18 on October 30, 2018; Y, - December 2018, entered through Official Letter No. YPTO-GG-0053-19 on February 26, 2018.	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento
Monitoring has been carried out at the point defined in the coordinate Point 1. Springs APPB (610951, 9639819)?			**X**	All monitoring was carried out in the coordinate defined in the PMA (610951, 9639819).	Informes de resultados adjuntos al Informe del Plan de

Environmental Management	Evaluation			Findings	Means of Verification
Measure	NC+	NC-	C		
Monitoring must be carried out with calibrated equipment and following the methodology established in Annex 4 of Book VI of the Unified Text of Secondary Legislation of Ministry of the Environment issued by Ministerial Agreement 097 - A. Taking as reference Chart 2. Measurement methods of pollutants concentrations, criteria in the air, according to each parameter evaluated, we have: - Settling particles: Gravimetric method, by capturing particles in open containers. - Particulate Material (PM10): Gravimetric method, using a high or low flow sampler. - Particulate Material (PM2.5): Gravimetric Method, using a low flow sampler. - Sulfur dioxide (SO2): Pararosaniline method. Absorption in liquid medium and subsequent colorimetric analysis. - Carbon monoxide (CO): Non-dispersive infrared analyzer (NDIR). - Ozone (O3): chemiluminescence, ultraviolet photometer.			X	All monitoring was performed with duly calibrated equipment, and the analysis methods established in the aforementioned regulations were used.	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento
Do air quality monitoring were performed by an Accredited Laboratory before the Ecuadorian Accreditation Service - SAE?			X	All monitoring was carried out by the GRÜNTEC laboratory, duly accredited by SAE.	Anexo 3.3.16 Alcance-acreditacion GRÜENTEC

Environmental Management Measure	Evaluation NC+	NC-	C	Findings	Means of Verification
Noise monitoring					
Has the frequency established for noise monitoring been met?			X	Noise monitoring was performed according to schedule defined (quarterly), except for the January-March 2018 quarter, and the results were presented to Ministry of the Environment, according to: - The monitoring corresponding to the first quarter January-March 2018 was not performed, but in the month of May 2018, entered through Official Letter No. YPTO-GG-0183-18 on June 15, 2018; - June 2018, entered through Official Letter No. YPTO-GG-0237-18 on July 31, 2018; - September 2018, entered by Official Letter No. YPTO-GG-0329-18 on October 30, 2018; and, - December 2018, entered by Official Letter No. YPTO-GG-0053-19 on February 26, 2019	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento
Has monitoring been carried out at the defined? Point 1. Pier #1 (610941, 9639369). Point 2. Administrative area APPB (611136, 9639401) Point 3. Pier #5 (611014, 9640135) Point 4. Cabotage Pier Puerto Bolívar (610892, 9639050).			X	All monitoring was carried out at the points established in the results reports attached to respective measure of the Environmental Management Plan.	Informes de resultados adjuntos Informe del Plan de Monitoreo y Seguimiento entregados al Anexo 3.3.0 Oficios de ingreso_Informes de Monitoreo y Seguimiento

Environmental Management Measure	Evaluation NC+	NC-	C	Findings	Means of Verification
5.2.6 Measurement Equipment Requirements: Evaluations must be performed using class 1 or class 2 integrating sound level meters, in accordance with the International Electrotechnical Commission Standard IEC 61672-1: 2002 or whatever substitutes it. To verify the correct operation of the sound level meter during measurements, use an acoustic calibrator appropriate for the sound level meter. The SPL of the calibrator will be measured with the sound level meter before and after the measurement, these SPLs must be included in the measurement report. The sound level meter may be used for the measurement only if the NPS measured with the calibrator has a maximum deviation according to Ecuadorian Accreditation Service criteria or the one that replaces it. Noise measurement equipment and its components must be in optimal operating conditions and possess the proper			**X**	All monitoring was performed with duly calibrated equipment, and the analysis methods established in the applicable regulations were used.	
Do noise monitoring was carried out by an Accredited Laboratory before the Ecuadorian Accreditation Service - SAE?			**X**	All monitoring was carried out by the GRÜNTEC laboratory, duly accredited by the SAE.	Anexo 3.3.16 Alcance-acreditacion GRÜENTEC

Environmental Management Measures	Evaluation NC+	NC-	C	Findings	Means of Verification
PMS-02 WATER QUALITY CONTROL PROGRAM					
Do established frequency for water quality monitoring has been met?			X	Water quality monitoring was carried out according to schedule defined (monthly during dredging activities, and quarterly when dredging activities are not performed), the results were presented to Ministry of the Environment, according to: - March 2018, entered through Official Letter No. YPTO-GG-0110-18 on April 24, 2018; - April 2018, entered through Official Letter No. YPTO-GG-0157-18 on May 29, 2018; - May 2018, entered through Official Letter No. YPTO-GG-0183-18 on June 15, 2018; - August 2018, entered through Official Letter No. YPTO-GG-0303-18 on September 28, 2018; - November 2018, entered through Official Letter No. YPTO-GG-0382-18 on December 26, 2018; - December 2018, entered by Official Letter No. YPTO-GG-0053-19 on February 26, 2019; carried out even if it was off schedule, and; - February 2019, entered by official letter No. YPTO-GG-0077-19, on 04/11/2019.	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento
Have all the parameters established in the PMA been evaluated (Arsenic, Cadmium, Total Chromium, Copper, Iron, Mercury, Fecal Coliforms, Detergent Surfactants, Oils and Fats, Biochemical Oxygen Demand, Chemical Oxygen Demand, Total Petroleum Hydrocarbons, In situ Dissolved Oxygen, Ammonia, Total Suspended Solids, Organophosphate, Organochlorine, Organonitrogen, and Carbamate Pesticides)?			X	In each monitoring performed, all the parameters established in the current Environmental Management Plan were evaluated.	Informes de resultados adjuntos al Informe del Plan de Monitoreo y Seguimiento entregados al MAE. Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento

Environmental Management Measures	Evaluation NC+	NC-	C	Findings	Means of Verification
Do monitoring have been performed at defined points? Point 1. Front of APPB (610680, 9639902, 0.6). Point 2. Front of Naval Academy (610682, 9640521, 0.6). Point 3. Island of Love (610505, 9641879, Point 4. El Coco entrance (611365, 0.6). Point 5. Punta El Faro (608302, 9646721, Point 6. Jambelí entrance (609094, 0.6).			X	All monitoring was performed at the points established in the respective measure of the Environmental Management Plan.	
Taking of water samples will be simple and punctual. A sampling record sheet should be completed and must include the following information: - Person in charge - Date, time and place - Number of samples taken - Method of preservation of samples used - Name of the laboratory that will analyze the samples and name of the person in charge or in charge of the analysis and delivery of results - Name and signature of the person in charge for their transportation - Notes or observations - Date and signature of receipt of the samples in the laboratory. In addition, the use of suitable containers for taking samples will be verified. For most parameters, samples can be collected in hermetically sealed plastic containers, however the			X	All monitoring was performed by taking simple and punctual samples, with their respective Chain of Custody and field records, where the required information is detailed.	

Environmental Management Measure	Evaluation NC+	NC-	C	Findings	Means of Verification
(Total Hydrocarbons), requires the use of dark glass containers.					
Do water monitoring was performed by an Accredited Laboratory before the Ecuadorian Accreditation Service - SAE?			X	All monitoring was performed by GRÜNTEC laboratory, duly accredited by SAE.	Anexo 3.3.16 Alcance-acreditacion GRÜENTEC
PMS-03 SEDIMENT QUALITY CONTROL PROGRAM					
Do the established frequency for sediment monitoring had been met?			X	Sediment monitoring was carried out according to schedule defined(monthly during dredging activities, and quarterly when no dredging activities), and the results were presented to Ministry of the Environment, according to: - March 2018, entered through Official Letter No. YPTO-GG-0110-18 on April 24, 2018; - April 2018, entered through Official Letter No. YPTO-GG-0157-18 on May 29, 2018; - May 2018, entered through Official Letter No. YPTO-GG-0183-18 on June 15, 2018; - August 2018, entered through Official Letter No. YPTO-GG-0303-18 on September 28, 2018; - November 2018, entered through Official Letter No. YPTO-GG-0382-18 on December 26, 2018; - December 2018, entered through Official Letter No. YPTO-GG-0053-19 on February 26, 2019; performed off schedule, and; - February 2019, entered by official letter No. YPTO-GG-0077-19, the 04/11/2019.	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento

Environmental Management Plan	Evaluation			Findings	Means of Verification
Measures	N	NC-	C		
Do all parameters established in the PMA (Arsenic, Chromium, Cadmium, Copper, Iron, Mercury, Lead, Total Petroleum Hydrocarbons, Hydrogen Potential, Organochlorine, Organophosphate, Organonitrogenized, and Carbamates) had been evaluated?			X	In each monitoring performed, all the parameters established in the current Environmental Management Plan were evaluated.	Informes de resultados adjuntos al Informe del Plan de Monitoreo y Seguimiento entregados al MAE. Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento
Do monitoring have been performed at Points? Point 1. In front of APPB (610680, 9639902, - Point 2. In front of Naval Academy (610682, 9640521, -4). Point 3. Isla del Amor (610505, 9641879, -6). Point 4. El Coco entrance (611365, 9645418, 2.5). Point 5. Punta El Faro (608302, 9646721, -7). Point 6. Jambelí entrance (609094, 9642541, -8). Point 7. Sediment pools (611860, 9640136).					
Will the results obtained from the sediment analysis laboratory be compared to the Canadian standard: Canadian Environmental Quality Guidelines?			X	Although all reports on the results of sediment monitoring performed, have the Maximum Permitted Limit established in Chart 1. Soil Quality Criteria of Annex 2 of the Unified Text of Secondary Legislation of Ministry of the Environment issued by Ministerial Agreement 097-A. The AM 097-A, in the Monitoring and Follow-up Plan Reports delivered to Ministry of the Environment, in the respective compliance analysis, the assessment of compliance with respect to the values established in Canadian regulations is included: Canadian Environmental Quality Guidelines.	

Environmental Management Measure	Evaluation NC+	NC-	C	Findings	Means of Verification
Do sediment monitoring was performed by an Accredited Laboratory before the Ecuadorian Accreditation Service - SAE?			X	All monitors were performed by GRÜNTEC laboratory, duly accredited by the SAE.	Anexo 3.3.16 Alcance-acreditacion GRÜENTEC
PMS-04 SHRIMP MORTALITY BIOASSAYS PROGRAM					
Has the established frequency been met?		X		Shrimp mortality bioassays were performed according to the schedule defined, and the results were presented to Ministry of the Environment, according to the following detail: - January 2018, not done. - February 2018, not done. - March 2018, entered with Official Letter No. YPTO-GG-0110-18 on 04/24/18; - April 2018, entered with Official Letter No. YPTO-GG-0157-18 on 05/29/18; - May 2018, entered with Official Letter No. YPTO-GG-0183-18 on 06/15/18; - June 2018, entered with Official Letter No. YPTO-GG-0237-18 on 07/31/18; - July 2018, entered with Official Letter No. YPTO-GG-0270-18 on 08/23/18; - August 2018, entered with Official Letter No. YPTO-GG-0303-18 on 09/28/18; - September 2018, entered with Official Letter No. YPTO-GG-0329-18 on 10/30/18; - October 2018, entered with Official Letter No. YPTO-GG-0360-18 on 11/28/18; - November 2018, entered with Official Letter No. YPTO-GG-0382-18 on 12/26/18; - December 2018, not done; - January 2019, entered with official letter YPTO-GG.0060-19 on 03/14/19; - February 2019, entered with official letter No. YPTO-GG-0077-19 on 04/11/2019. 75 % of the required monitoring was executed in the evaluated period.	Anexo 3.3.0 Oficios de ingreso_Informes de Monitoreo y Seguimiento

Environmental Management Plan	Evaluation			Findings	Means of Verification
Measures	**NC**	**NC-**	**C**		
Bioassays will determine the mortality of Litopenaeus vannamei shrimp postlarvae, produced by exposure of suspended sediments in concentrations of 10%, 50% and 100%, under laboratory conditions with dredging simulation.			**X**	For bioassays execution, the methodology for estimating the Mean Lethal Concentration (LC50-96) was considered, combined with the standards and protocols approved by the Environmental Protection Agency (EPA) of the United States of North America, described in the manual "Evaluation of dredged material proposed for ocean disposal", edited by US Environmental Protection Agency / U.S. Army Corps of Engineering, 1991, EPA / 8-91 / 001, through the Suspended Particulate Phase (SPP), with sediment samples subject to dredging, at concentrations of 10%, 50% and 100% of SPP in each of the two replications considering six sampling points.	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento
Sediment monitoring points are detailed below: Point 1. In front of APPB (610680, 9639902,-2) Point 2. In front of Naval Academy (610682,-9640521,-4). Point 3. Island of Love (610505, 9641879, 6). Point 4. El Coco entrance(611365, 9645418, -2.5). Point 5. Punta El Faro (608302, 9646721, 7). Point 6. Jambelí entrance (609094, 9642541, -8).			**X**	All the tests were performed with sediment samples extracted in points established in respective measure of the Plan of Environmental management.	Anexo 3.3.0 Oficios de ingreso_Informes de Monitoreo y Seguimiento
PMS-05 OFFSHORE SEDIMENT DEPOSIT SATELLITE MONITORING PROGRAM					

Environmental Management	Evaluation			Findings	Means of Verification
Measure	**NC+**	**NC-**	**C**		
Dredging product from maneuvering zone and Access Channel to Puerto Bolívar will be taken to an offshore zone; Vessels must have a satellite tracking system, in order to monitor the site of substrate arrangement.			**X**	There is a geo-referenced database by means of a DGPS device of the respective dredging vessels where minute-by-minute movements are recorded during the dredging activities executed between March 29 and May 31, 2018. Daily dredging reports were also made for each of the dredging vessels where the specific dumping area is established.	3.5 Mapa de recorrido de dragas (Total Tracks) Anexo 2.2.6 Marcas de posición diaria _Filippo Brunelleschi (solo en copia digital) Anexo 2.2.7 Marcas de posición diaria _Pedro Alvares Cabral (solo en copia digital) Anexo 2.3.1 FDC1819_DailyReport_Filippo Brunelleschi_Compilado Anexo 2.3.2 FDC1819_DailyReport_Pedro Alvares
PMS-06 PHYTOPLANKTON AND ZOOPLANKTON SPECIES MONITORING PROGRAM					

Environmental Management	Evaluation			Findings	Means of Verification
Measure	**NC+**	**NC-**	**C**		
Perform control of the amounts of phytoplankton and zooplankton in the area of marine influence by taking samples. Periodic evaluation of this resource will be executed quarterly. Measurement records will be kept and compared with the values obtained in the environmental baseline of the project.			**X**	Biotic monitoring was performed to control the amounts of phytoplankton and zooplankton in the area of marine influence, according to schedule defined, and the results were presented to Ministry of the Environment: - February 2018, not done. - April 2018, entered through Official Letter No. YPTO-GG-0157-18 on 29 May 2018; - June 2018, entered through Official Letter No. YPTO-GG-0237-18 on July 31, 2018; - July 2018, entered by Official Letter No. YPTO-GG-0270-18 on 23 August 2018; - August 2018, entered through Official Letter No. YPTO-GG-0303-18 on September 28, 2018; - October 2018, entered through Official Letter No. YPTO-GG-0360-18 on November 28, 2018; Y, - December 2018, entered through Official Letter No. YPTO-GG-0053-19 on February 26, 2018. - February 2019, entered by official letter No. YPTO-GG-0077-19, on April 11, 2019.	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento
PMS-07 BIOAQUATIC SPECIES MONITORING PROGRAM					

Environmental Management Measures	Evaluation NC+	NC-	C	Findings	Means of Verification
Perform Bi-monthly monitoring of mollusks and crustaceans in mangrove custody areas located within the project's area of influence: - Vikingos del Mar Artisanal Fisheries Production Cooperative - Estero Porteño Artisan Women Association - Community Organization of Tourist Services La Playita.			X	Bimonthly biotic monitoring of mollusks and crustaceans was performed in mangrove custody areas located within the project's area of influence, according to schedule defined, and the results were presented to Ministry of the Environment: - February 2018, not done. - April 2018, entered through Official Letter No. YPTO-GG-0157-18 on 29 May 2018; - June 2018, entered through Official Letter No. YPTO-GG-0237-18 on July 31, 2018; - July 2018, entered by Official Letter No. YPTO-GG-0270-18 on 23 August 2018; - August 2018, entered through Official Letter No. YPTO-GG-0303-18 on September 28, 2018; - October 2018, entered through Official Letter No. YPTO-GG-0360-18 on November 28, 2018; Y, - December 2018, entered through Official Letter No. YPTO-GG-0053-19 on February 26, 2018. - February 2019, entered by official letter No. YPTO-GG-0077-19, on April 11, 2019.	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento
PMS-08 FLORA AND FAUNA MONITORING PROGRAM					

Environmental Management Measures	Evaluation NC+	NC-	C	Findings	Means of Verification
Planktonic and benthic Flora and Fauna will be monitored, reports of sightings of marine mammals and ichthyofauna in the high seas deposit area, including a monitoring point at the limit of the Santa Clara Island Marine Reserve.			X	Perform of Biotic monitoring of planktonic and benthic flora and fauna, reports of sightings of marine mammals and ichthyofauna in the high seas deposit area, including a monitoring point at the limit of the Isla Santa Clara Marine Reserve, according to schedule defined, and the results were presented to Ministry of the Environment: - February 2018, not done. - April 2018, entered through Official Letter No. YPTO-GG-0157-18 on May 29, 2018; - June 2018, entered through Official Letter No. YPTO-GG-0237-18 on July 31, 2018; - July 2018, entered through Official Letter No. YPTO-GG-0270-18 on August 23, 2018; - August 2018, entered through Official Letter No. YPTO-GG-0303-18 on 28, September 2018; - October 2018, entered through Official Letter No. YPTO-GG-0360-18 on November 28, 2018; and, - December 2018, entered by Official Letter No. YPTO-GG-0053-19 on 26, February 2018. - February 2019, entered by official letter No. YPTO-GG-0077-19, on April 11, 2019.	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento
PMS-09 ENVIRONMENTAL MONITORING AND MONITORING PROGRAM					
Do the monthly follow-up for compliance with the Environmental Management Plan have been performed (A monitoring matrix will be applied where each measure and its level of compliance are identified, as well as the means of verification that indicates its compliance)?			X	Environmental Inspection Report has been made monthly, and attached to the Monitoring and Follow-up Plan Report (as of May 2018). Audit Report includes the monitoring matrix of the established measures.	Anexo 3.3.0 Oficios de ingreso_Informes mensuales_Plan de Monitoreo y Seguimiento

Chart 7-8 Evaluation result of compliance with Monitoring and Environmental Follow-up and Plan l

Results	Quantity	%
TOTAL MEASURES	26	100%
COMPLIANCE	25	96%
NON-CONFORMITY MINOR	1	4%
NON-CONFORMITY GREATER	0	0%
DOES NOT APPLY (N/A)	0	--

Prepared by: *ECOSAMBITO Cía. Ltda.*

CHAPTER 8. FINDINGS AND ACTION PLAN

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8 FINDINGS AND ACTION PLAN

8.1 FINDINGS

Given that in the project execution area - that is, piers and maneuvering area in the Santa Rosa estuary and the offshore waste dumping area - no activities were carried out from June 1, 2018, to March 31, 2019, it was not possible to identify findings or non-compliances during on-site inspections.

There were no findings to report from the inspection carried out on the dredging vessel Pedro Alvares Cabral on February 4, 2019.

8.2 ACTION PLAN

Once the compliance level with the criteria for the Project has been established in its first year of validity (see Chapter VII), and since it was not possible to establish Findings (see the previous section), the required Action Plan is elaborated in this chapter for the collection of Non-Conformities detected in the evaluation of compliance with the Environmental Management Plan.

The different corrective measures established as an Action Plan are shown in the tables below:

Table 8-1 Action Plan

Code:	**PA-01**
Criteria:	**PREVENTION AND MITIGATION PLAN (PPM)** **PPM-03 PREVENTIVE MEASURE PROGRAM FOR DREDGING OPERATION** To avoid conflicts, the activities' schedules to be carried out shall be shared with the Access Channel users to Santa Rosa Estuary (the area to be dredged).
Compliance evaluation:	Partial compliance (NC-)
Action plan:	Notify the Santa Rosa estuary users through a public statement: the start date, duration, working hours, main activities to be carried out, and preventive measures to be taken during the dredging period.
Execution indicator:	Timely notice (Yes = 100%, No = 0%)
Verification mean:	Copy of the Letter of entry of notification to the captaincy of Puerto Bolívar with acknowledgment stamp.
Frequency/ Completion time:	Once at the start of each dredging phase.
Responsible:	Project Manager
Estimate (U.S.A. dollars):	$300,00

Code:	PA-02
Criteria:	**WASTE MANAGEMENT PLAN (PMD)** **PMD-01 DREDGING WASTE MANAGEMENT PROGRAM** The Project must identify and properly dispose of solid waste generated by the Project. Dredging waste shall be disposed of as follows: - Dredging Process of Piers 1, 2, 3, 4, 5, and 6 shall be arranged in the sediment deposit area near the Naval Academy in a land arranged for this activity. - The dredging sediments from the maneuvering zone and access channel to Puerto Bolívar shall be disposed of offshore.
Compliance evaluation:	Partial compliance (NC-)
Action plan:	In the following dredging phases, the sediment shall be discharged only in the offshore spill tank.
Execution indicator:	Measure is met = 100%, Measure is not met = 0%
Verification mean:	Daily dredging report
Frequency/ Completion time:	Permanent (during the execution of dredging activities)
Responsible:	Project Manager
Estimate (U.S.A. dollars):	- (Included in the operative cost of the dredging service)

Code:	PA-03
Criteria:	**WASTE MANAGEMENT PLAN (PMD)** **PMD-01 DREDGING WASTE MANAGEMENT PROGRAM** Sediment collecting and disposal processes shall be performed following the project Activities' provisions, Chapter 7 of this Assessment (concerning EIA Project).
Compliance evaluation:	Partial compliance (NC-)
Action plan:	In the following dredging phases, the sediment shall be discharged only in the offshore spill tank.
Execution indicator:	Measure is met = 100%, Measure is not met = 0%
Verification mean:	Daily dredging report
Frequency/ Completion time:	Permanent (during the execution of dredging activities)
Responsible:	Project Manager
Estimate (U.S.A. dollars):	- (Included in the operative cost of the dredging service)

Code:	PA-04
Criteria:	**COMMUNITY RELATION PLAN (PRC)** **PRC-01 COMMUNITY RELATION PROGRAM** The responsible for YILPORTECU S.A. project shall manage the "Community Relations" of the Project, in which meetings will be held with the main actors of the Project: - Local authorities - Social organizations and communities in the Project's areas of influence. Approaches should be made with the main authorities of the sector to report the inhabitants' concerns and establish communication links among the Project - community - authorities.
Compliance evaluation:	Partial compliance (NC-)
Action plan:	Prepare an annual Community Relations Agenda that allows the fulfillment of the objectives established in the measure.
Execution indicator:	Timely execution of the Community Relations Agenda (Yes = 100%, No = 0%)
Verification mean:	Community Relation Plan document
Frequency/ Completion time:	90 days
Responsible:	General Manager
Estimate (U.S.A. dollars):	$3500

Code:	PA-05
Criteria:	**EVALUATION OF COMPLIANCE WITH THE CONTROL AND MONITORING PLAN (PMS)** **PMS-04 PROGRAM OF BIOESSAYS ON THE SHRIMP MORTALITY** Was there compliance with the Frequency established for the bioessays execution?
Compliance evaluation:	Partial compliance (NC-)
Action plan:	Ensure the Bioassays' timely execution on Shrimp Mortality according to the Frequency established in the Updated Environmental Management Plan, through an agreement and/or long-range contract with the service provider.
Execution indicator:	Timely execution of the control (Yes = 100%, No = 0%)
Verification mean:	Community Relation Plan document
Frequency/ Completion time:	90 days
Responsible:	General Manager
Estimate (U.S.A. dollars):	$6000 per control

8.3 COMMENTS TO THE PROPOSED ACTION PLAN

The proposed Action Plan consists of five measures aimed at achieving compliance with the provisions of the PMA, as in the case of plans PA-01, PA-04, and PA-05 where, in addition to the measure to be implemented, people in charge, execution period, and estimated budget are established.

In the case of plans PA-02 and PA-03, these are oriented to reflect the Project's methodological changes concerning the type of dredge and sediment deposit site. The measures initially proposed in the current PMA, which, due to the modifications described, are irrelevant for their continuation, shall be rejected in the Updated Environmental Management Plan proposed in the next chapter.

CHAPTER 9. UPDATE ON THE ENVIRONMENTAL MANAGEMENT PLAN

Content

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9. UPDATE ON THE ENVIRONMENTAL MANAGEMENT PLAN

Considering compliance evaluation results and applicable technical standards, an update on the Management Plan is proposed according to the model shown in Table 9-1. This table includes and establishes the plans, programs, and specific actions or measures for implementing the Management Plan, the person responsible for its execution, compliance indicators, means of verification, and their Frequency of execution.

The following has also been considering for the update of the PMA:

- Eliminate redundant measures between the different plans and/or programs;
- Update or eliminate the measures associated with the use of sediment pools, and align them with the methodological changes established in Chapter V;
- Update measures that have been identified as technically and/or economically unfeasible; in order to adopt a feasible alternative for the Project sponsor;
- Reduce specific measures that have their own legal regulations (e.g., related to health and safety at work);
- Update the Frequency of execution of measures based on the achieved results.
- Optimization of plan content.

Table 9-1 Template for presentation of the updated Environmental Management Plan.

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution:		**PLAN NAME**		**Codification:** **000**	
Environmental Aspect	**Identified Impact**	**Actions**	**Indicators**	**Verification Mean**	**Frequency**
000-01 PROGRAM NAME					
…	…	…	…	…	…

Table 9-2 Update on the Environmental Management Plan

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**PPM**
Environmental Aspect	**Identified Impact**	**Plan, Programs and Measures**	**Indicators**	**Verification Mean**	**Frequency**
PPM-01 NOISE, VIBRATION AND GAS EMISSION CONTROL					
Air.	Generation of noise, vibrations and gaseous emissions.	Verify that the contractor company executes its Preventive and Predictive Maintenance Plan for its dredge vessels in a timely manner, focusing on its power generation and motor system.	Implemented = 1, Not implemented = 0.	Maintenance report carried out, routine maintenance records.	Monthly (during dredging activities).
PPM-02 PREVENTION OF IMPACT ON WATER QUALITY					
Water, social.	Pollution of water quality of Estero Santa Rosa. Social conflict.	Verify that each vessel has its respective International Wastewater Pollution Prevention Certificate (valid during the ongoing dredging phase) issued by a competent body.	Implemented = 1, Not implemented = 0.	Maintenance report carried out, routine maintenance records.	Monthly (during dredging activities).
		Temporarily interrupt dredging operations (including sediment dumping) during periods of strong winds, waves, and currents, or other atmospheric conditions.	Implemented = 1, Not implemented = 0.	- Incident report issued by the contractor (includes a report of environmental factors). - Operations log where the incident is recorded.	When necessary.
PPM-03 FUEL MANAGEMENT PROGRAM					

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**PPM**
Environmental Aspect	**Identified Impact**	**Plan, Programs, and Measures**	**Indicators**	**Verification Mean**	**Frequency**
Water and biotic.	Pollution of water quality of Estero Santa Rosa. Impact on flora and fauna of the estuary.	Verify that each vessel has its respective fuel and lubricant loading station and other chemical products, duly signposted, with adequate containment deposits and anti-spill kit.	Implemented = 1, Not implemented = 0.	Visual inspection report by the Auditor.	Once (prior commencement of operations).
Social and economic.	Pollution of water quality of Estero Santa Rosa. Impact on flora and fauna of the estuary.	Verify that the fuel supplier(s) providing the dredger vessels from the terminal has: - Registration of the Sub-secretariat of Ports. - Valid Environmental Regularization. - Fuel loading procedure. - Spill response procedure. - Verify that the fueling vessel has the necessary implements for the safe supply of fuel and the attention of spills.	Implemented = 1, Not implemented = 0	Qualification of YILPORTECU-S.A.	Once (prior commencement of operations).
PPM-04 PROGRAM FOR TECHNICAL INSPECTION OF DREDGING					
Social and economic.	Social conflict	Have a technical inspection of the dredging execution by hiring an independent company that evaluates compliance with the Project's technical specifications and the applicable technical regulations.	Implemented = 1, Not implemented = 0.	Report on inspection of work execution	Monthly (during the execution of dredging activities).
PPM-05 PROGRAM FOR PREVENTION OF IMPACT ON MARINE FAUNA					

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**PPM**
Environmental Aspect	**Identified Impact**	**Plan, Programs, and Measures**	**Indicators**	**Verification Mean**	**Frequency**
Biotic component.	Impacts on marine fauna.	The deposit shall not be made in the offshore area from June to October or in the area defined by the competent Authority as a transit of humpback whales (Megaptera novaeangliae).	Implemented = 1, Not implemented = 0.	Work Schedule Notification of Interruption of operations to the MAE.	Once in the required period.
		Implement a Contingency Program to rescue marine animals affected by the dredging vessels' operation if this occurs. A report format must be included for each occasion that the measure is executed. This report shall include: Location, species, photographic record, animal status, observations (quantity, context, others), actions carried out, the body receiving the specimen, signatures of responsibility.	Implemented = 1, Not implemented = 0	Plan implementation report with evidence..	When required.

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**Cod: PMD**
Environmental Aspect	**Identified Impact**	**Plan, Programs, and Measures**	**Indicators**	**Verification Mean**	**Frequency**
PMD-01 PROGRAM FOR MANAGEMENT OF COMMON AND VARIOUS WASTE					
Soil, water, landscape, social.	Alteration of water and soil quality. Landscape transformation. Social conflict.	Solid wastes (special and/or dangerous) removed from the seabed must be dislodged and placed on land for their respective identification, classification, and proper management according to current regulations; taking the necessary precautions when suspected it contains hazardous materials.	Implemented = 1, Not implemented = 0.	Hazardous and special waste log updated.	When required.
		Conditioning the Common Waste Collection Center according to the Technical Regulation NTE INEN 2841: 2014-03.	Implemented = 1, Not implemented = 0.	Photographic record and technical specifications of its construction.	Once.
		For the management of common waste (recyclable and non-recyclable) produced, they shall be collected and classified according to the provisions of regulation NTE INEN 2841: 2014-03.	Implemented = 1, Not implemented = 0	Photographic record. Signage purchase invoices.	Permanent.
PMD-02 PROGRAM FOR MANAGEMENT OF HAZARDOUS AND SPECIAL WASTE					
Soil, water, landscape, social.	Alteration of water and soil quality. Landscape transformation. Social conflict.	Maintain compliance with the obligations related to the Hazardous Waste Generator Registry (RGDP): - Waste Minimization Plan - Annual Declaration (until January 10 of each year) - Updating the RGDP when required by the Environmental Authority.	Implemented = 1, Not implemented = 0.	Documentary record..	Yearly.

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**Cod: PMD**
Environmental Aspect	**Identified Impact**	**Plan, Programs, and Measures**	**Indicators**	**Verification Mean**	**Frequency**
		Implement and update the Hazardous and Special Waste Generation Log and Single Manifesto for their management.	Implemented = 1, Not implemented = 0.	Hazardous and special waste log updated.	**Permanent.**
		Conditioning of the Hazardous and Special Waste Collection Center in accordance with the provisions of the A.M. 061, Art. 93 of the places for storing hazardous waste, and technical regulations INEN 2266 and INEN 2841.	Implemented = 1, Not implemented = 0.	Photographic record and technical specifications of its construction.	**Once.**

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**Cod: PCC**
Environmental Aspect	**Identified Impact**	**Plan, Programs, and Measures**	**Indicators**	**Verification Mean**	**Frequency**
PCC-01 TRAINING PROGRAM					
Economic and social.	Work risks due to lack of knowledge regarding plans and	Update and implement the basic topics established in Annex 1 of this PMA in the Training Plan for employees (according to their skills).	Implemented = 1, Not implemented = 0.	Documentary record.	Yearly.

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**Cod: PCC**
Environmental Aspect	**Identified Impact**	**Plan, Programs, and Measures**	**Indicators**	**Verification Mean**	**Frequency**
	Procedures. Impact on health and safety of workers.	Implement and maintain frequent and short-term talks, emphasizing conflictive topics, as a positive reinforcement of the Training Plan.	Implemented = 1, Not implemented = 0.	Training attendance log.	Quarterly.
		Include the environmental commitments of this PMA in the Induction Plans for new personnel.	Implemented = 1, Not implemented = 0.	Documentary record.	When required.
PCC-02 COMMUNICATION PROGRAM					
Social and economic.	Impact on the Health and Safety of the users of the estuary and the general population.	The activities to be carried out, the working hours, and restrictions, if any, must be communicated to the public bodies with competence in the Access Channel to Estero Santa Rosa (the area to be dredged), at least 1 week in advance, before the start of the dredging activities.	Implemented = 1, Not implemented = 0.	Documentary record.	Once, before the commencement of the dredging activities.
		Communicate to the interested parties any modification made to the Project, its Inspection, or any other relevant issue.	Implemented = 1, Not implemented = 0.	Documentary record.	Permanent.

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**Cod: PRC**
Environmental Aspect	**Identified Impact**	**Plan, Programs, and Measures**	**Indicators**	**Verification Mean**	**Frequency**
PRC-01 COMMUNITY RELATION PROGRAM					
Social.	Social conflict. The synergy between company and community where the Project is being developed.	**Implement Communication Protocol:** Keep a record of inquiries, complaints, and requests for information. Include the monitoring record, resolutions issued, and response to the interested party.	Implemented = 1, Not implemented = 0.	Communication log and follow-up.	Yearly.
		Invite the community to participate in environmental pollution prevention workshops, company-specific initiatives (involving the community), and contingency plans.	Implemented = 1, Not implemented = 0.	Event report performed.	Yearly.
		Participate in environmental education, disaster prevention, and social integration events, together with the Environmental Authority or other public bodies.	Implemented = 1, Not implemented = 0.	Event report performed.	Yearly.
PRC-02 COMPENSATION AND REIMBURSEMENT PROGRAM					
Social and economic.	Social conflict due to impacts on the resources of the inhabitants in the area of influence of the Project.	In the event that the operation of the Project generates an impact on the environment, health, or property of third parties, the Compensation Protocol must be executed (see Annex 2 of this PMA)	Implemented = 1, Not implemented = 0.	Reports on the execution of the Compensation Protocol with case findings.	When required.

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**Cod: PEC**
Environmental Aspect	**Identified Impact**	**Plan, Programs and Measures**	**Indicators**	**Verification Mean**	**Frequency**
PEC-01 EMERGENCY AND CONTINGENCY RESPONSE PROGRAM					
Water, air, soil, biotic, social and economic.	Impacts on environmental aspects. Social conflict.	Review and/or update of the Contingency Plan including: - Collisions between vessels - Spill of hydrocarbons and chemical products - Natural events - Fire and explosion	Implemented = 1, Not implemented = 0.	Documentary record.	Biannual (or whenever there is a change in the work methodology or infrastructure requiring it).
		Implementation/update of the Evacuation Map.	Implemented = 1, Not implemented = 0.	Documentary record.	Biannual (or whenever there is a change in the work methodology or infrastructure requiring it).
		Planning and execution of Emergency Drills of: - Spill of hydrocarbons and chemical products - Natural events - Fire and explosion	Implemented = 1, Not implemented = 0.	Documentary record.	Yearly.
		Repowering and/or maintenance of wet system (includes hydrostatic tests).	Implemented = 1, Not implemented = 0.	Documentary record.	When required.
		Implementation and maintenance of fire extinguishers and elements of the fire system (lighting, signage, others).	Implemented = 1, Not implemented = 0.	Documentary record.	Yearly.

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**Cod: PSS**
Environmental Aspect	**Identified Impact**	**Plan, Programs, and Measures**	**Indicators**	**Verification Mean**	**Frequency**
PSS-01 INDUSTRIAL SAFETY PROGRAM					
Water, air, soil, biotic, social, and economic.	Risk of accidents. Impact on the Safety and Health of the workers. Risk of damage to machinery and facilities.	YILPORTECU S.A. must keep updated its Internal Regulations for Safety and Health at Work as established in Executive Decree 2393 and other legal bodies that govern Ecuador and its Health and Safety Policy duly signed by the Legal representative and placed in visible places within the Port Terminal.	Implemented = 1, Not implemented = 0.	Documentary and photographic record.	Biannual (or whenever there is a change in the work methodology or infrastructure requiring it).
		Appointment of the Head of Health and Safety at work.	Implemented = 1, Not implemented = 0.	Documentary record.	Permanent.
		Keep its Safety, Health at Work and Comprehensive Risk Management Indicators of the Unified Labor System (SUT) updated	Implemented = 1, Not implemented = 0.	Documentary record.	Yearly.
PSS-02 PERSONAL PROTECTIVE EQUIPMENT PROVISION PROGRAM					
Water, air, soil, biotic, social, and economic.	Risk of accidents. Impact on the Safety and Health of the workers. Risk of damage to machinery and facilities.	YILPORTECU S.A. shall supply the necessary personal protective equipment (PPE) to its collaborators who are part of the Project, according to the current risk matrix per job position.	Implemented = 1, Not implemented = 0.	Documentary record.	Yearly, or When required.
PSS-03 SIGNAGE PROGRAM					

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**Cod: PSS**
Environmental Aspect	**Identified Impact**	**Plan, Programs, and Measures**	**Indicators**	**Verification Mean**	**Frequency**
Water, air, soil, biotic, social, and economic.	Risk of accidents. Impact on the Safety and Health of the workers. Risk of damage to machinery and facilities.	In the Project, both preventive and restrictive signage (PROHIBITION/ MANDATORY ACTION/CAUTION/SAFE CONDITION/FIRE-FIGHTING EQUIPMENT) must be implemented in the intervention areas at the Port Terminal. Signage design (colors, symbols, measurements, etc.) must be carried out in accordance with the regulation INEN ISO-3864-1:2013. DESIGN FOR SAFETY SIGNAGE.	Implemented = 1, Not implemented = 0.	Photographic record. Signage specifications or drawings.	Yearly.

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**Cod: PMS**
Environmental Aspect	**Identified Impact**	**Plan, Programs and Measures**	**Indicators**	**Verification Mean**	**Frequency**
PMS-01 PROGRAM FOR ENVIRONMENTAL AIR QUALITY CONTROL					
Air.	Impact on air quality.	Carry out control of ambient air quality at the monitoring point: Point 1. Piers APPB (610951, 9639819). Sampling and analysis must be carried out by laboratories accredited to the SAE and following the methodology established in Annex 4 of Book VI of TULSMA (AM 097 - A).	Number of monitoring carried out within the term/total monitoring scheduled per year.	Result report.	Quarterly.

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**Cod: PMS**
Environmental Aspect	**Identified Impact**	**Plan, Programs, and Measures**	**Indicators**	**Verification Mean**	**Frequency**
Noise and vibrations.	Elevation of sound pressure levels.	Carry out ambient noise monitoring in the area of a direct influence of the Project. The monitoring points are: Point 1. Pier # 1 (610941, 9639369). Point 2. APPB Administrative Area (611136, 9639401) Point 3. Pier # 5 (611014, 9640135) Point 4. Puerto Bolívar Cabotage Pier (610892, 9639050). Monitoring must be carried out by a Laboratory Accredited by the SAE, with calibrated equipment and following the monitoring methodology established in Annex 5 of TULSMA Book VI (AM 097 - A).	Number of monitoring carried out within the term/total monitoring scheduled per year.	Result report.	Quarterly.
PMS-02 PROGRAM FOR ENVIRONMENTAL QUALITY CONTROL OF WATER RESOURCE					

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**Cod: PMS**
Environmental Aspect	**Identified Impact**	**Plan, Programs, and Measures**	**Indicators**	**Verification Mean**	**Frequency**
Water, biotic, economic, and social.	Impacts on water quality. Impacts on marine flora and fauna. Social conflict.	Carry out water quality monitoring at the control points established in the environmental baseline, and evaluate them according to Table 2. Acceptable Quality Criteria for preserving aquatic and wild life in fresh, marine and estuarine waters, of the Annex 1 of Book VI of TULSMA (A.M. 097 - A). The monitoring points are: Point 1. In front of APPB (610680, 9639902, 0.6). Point 2. in front of Naval Academy (610682, 9640521, 0.6). Point 3. Isla del Amor (610505, 9641879, 0.6). Point 4. Entrance to El Coco (611365, 9645418, 0.6). Point 5. Punta El Faro (608302, 9646721, 0.6). Point 6. Entrance to Jambelí (609094, 9642541, 0.6). The parameters to be monitored are: Arsenic, Cadmium, Total Chromium, Copper, Iron, Mercury, Fecal Coliforms, Detergent Surfactants, Oils and Fats, Biochemical Oxygen Demand, Chemical Oxygen Demand, Total Petroleum Hydrocarbons, Dissolved Oxygen in situ, Ammonia, Total Suspended Solids, Organophosphates, and Organochlorines. Laboratories accredited by the SAE must carry out sampling and analysis.	Number of monitoring carried out within the term/total monitoring scheduled per year.	Result report.	Monthly (during dredging activities) and Quarterly (without dredging activity).
PMS-03 PROGRAM FOR ENVIRONMENTAL QUALITY CONTROL OF SOIL FROM SEDIMENTS					

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**Cod: PMS**
Environmental Aspect	**Identified Impact**	**Plan, Programs, and Measures**	**Indicators**	**Verification Mean**	**Frequency**
Water, biotic, economic, and social.	Impacts on water quality. Impacts on marine flora and fauna. Social conflict.	Carry out **soil quality monitoring from sediments.** The monitoring points are: Point 1. In front of APPB (610680, 9639902, -2). Point 2. In front of Naval Academy (610682, 9640521, -4). Point 3. Isla del Amor (610505, 9641879, -6). Point 4. Entrance to El Coco (611365, 9645418, -2.5). Point 5. Punta El Faro (608302, 9646721, -7). Point 6. Entrance to Jambelí (609094, 9642541, -8). Point 7. Sediment pools (611860, 9640136). The monitored parameters shall be evaluated according to Table 1. Soil Quality Criteria of Annex 2 of TULSMA (A.M. 097 - A), and the Canadian Enviromental Quality Guidelines. The parameters to be monitored are: Arsenic, Chromium, Cadmium, Copper, Iron, Mercury, Lead, Total Petroleum Hydrocarbons, Hydrogen Potential, Organochlorines, and Organophosphates. Sampling and analysis must be performed by an SAE Accredited Laboratory..	The number of monitoring carried out within the term/total monitoring scheduled per year.	Result report.	Monthly (during dredging activities) and Quarterly (without dredging activity).
PMS-04 PROGRAM FOR BIOESSAYS ON SHRIMP MORTALITY					

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**Cod: PMS**
Environmental Aspect	**Identified Impact**	**Plan, Programs, and Measures**	**Indicators**	**Verification Mean**	**Frequency**
Economic.	Impacts on industrial production of shrimp.	Carry out an Eco-toxicological Study to determine the Mean Lethal Concentration in shrimp larvae (Litopenaeus vannamei) with suspended sediments (LC50-96) combined with the standards and protocols approved by the Environmental Protection Agency (EPA) of the United States of North America, described in the manual "Evaluation of dregded material proposed for ocean disporal" edited by the U.S. Environmental Protection Agency/U.S. Army Corps of Engineering, 1991, EPA/8-91/001, through the Suspended Particulate Phase (SPP), with sediment samples subject to dredging, at concentrations of 10%, 50% and 100% of SPP in each of the two replicas, in six sampling points that are: Point 1. In front of APPB (610680, 9639902, -2). Point 2. In front of Naval Academy (610682, 9640521, -4). Point 3. Isla del Amor (610505, 9641879, -6). Point 4. Entrance to El Coco (611365, 9645418, -2.5). Point 5. Punta El Faro (608302, 9646721, -7). Point 6. Entrance to Jambelí (609094, 9642541, -8).	The number of monitoring carried out within the term/total monitoring scheduled per year.	Result report.	Monthly (during dredging activities) and Quarterly (without dredging activity).
PMS-05 PROGRAM FOR THE RECORD OF MONITORING RESULTS					

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**Cod: PMS**
Environmental Aspect	**Identified Impact**	**Plan, Programs, and Measures**	**Indicators**	**Verification Mean**	**Frequency**
Water, air, soil, biotic, social, and economic.	Impacts on the quality of environmental components.	Establish and update a system for recording the results of the parameters assessed in the monitoring carried out (air quality, noise, water quality, and sediments), which allows observing their evolution over time for analysis and decision-making.	Implemented = 1, Not implemented = 0.	The historical record of monitoring results.	Permanent.
PMS-06 PROGRAM FOR MONITORING PHYTOPLANKTON AND ZOOPLANKTON SPECIES					
Biotic, social, and economic.	Impacts on the biotic component of the estuary and the sources of community resources in the area of influence.	Carry out the control of the amounts of phytoplankton and zooplankton in the area of marine influence by taking samples. The periodic evaluation of this resource shall be carried out preferably quarterly. Measurement records shall be kept and compared with the values obtained in the environmental baseline of the Project.	The number of monitoring carried out within the term/total monitoring scheduled per year.	Result report.	Quarterly.
PMS-07 PROGRAM FOR MONITORING BIO-AQUATIC SPECIES					
Biotic, social, and economic.	Impacts on the biotic component of the estuary and the sources of community resources in the area of influence.	Carry out monitoring of mollusks and crustaceans in mangrove areas located within the Project's area of influence: - Vikingos del Mar Artisanal Fisheries Production Cooperative - Estero Porteño Artisan Women Association - Community Organization of Tourist Services La Playita	The number of monitoring carried out within the term/total monitoring scheduled per year.	Result report.	Quarterly.
PMS-08 PROGRAM FOR MONITORING FLORA AND FAUNA					

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**Cod: PMS**
Environmental Aspect	**Identified Impact**	**Plan, Programs and Measures**	**Indicators**	**Verification Mean**	**Frequency**
Biotic, social, and economic.	Impacts on the biotic component of the estuary and the sources of community resources in the area of influence.	Planktonic and benthic Flora and Fauna shall be monitored, and there shall be reports of sightings of marine mammals and ichthyofauna in the offshore deposit area, including a monitoring point at the limit of the Marine Reserve Isla Santa Clara.	Implemented = 1, Not implemented = 0.	Result report.	Quarterly.
PMS-09 PROGRAM FOR MONITORING OF DREDGING OPERATION					
Social and economic.	Social conflict. Impacts on port operations.	Require the dredging contractor a daily report of the dredging vessel routes, in digital format, including the movement coordinates (*tracks*) obtained from the DGPS system on each vessel.	Implemented = 1, Not implemented = 0.	Daily report on dredging vessel routes (digital).	Monthly (during dredging activities).
Social and economic.	Social conflict. Impacts on port operations.	Require the dredging contractor a daily report of the volumes of sediments transported, the quadrants of the deposit area used, and the number of hours worked of each dredge vessel participating in the dredging tasks.	The number of monitoring carried out within the term/total monitoring scheduled per year.	Result report.	

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**Cod: PAE**
Environmental Aspect	**Identified Impact**	**Plan, Programs, and Measures**	**Indicators**	**Verification Mean**	**Frequency**
PAE-01 CLOSURE, DEPARTURE, AND DELIVERY OF THE AREA					
Soil, landscape, economic and social.	Impacts on the quality of the soil and landscape and the valuation of private property. Social conflict.	In the event that the Project Management determines its definitive closure, the Protocol of Abandonment and Delivery of the Area must be implemented (see Annex 3 of this PMA).	Implemented = 1, Not implemented = 0.	Declaration of commencement of the Departure Plan by the Project Administration.	When required.
		Implement and keep updated the Execution Record of the Protocol of Departure and Delivery of the Area.	Implemented = 1, Not implemented = 0.	Departure Plan execution report includes evidence.	Permanent.

ENVIRONMENTAL MANAGEMENT PLAN					
Responsible for the execution: HSQE Manager		**PREVENTION AND MITIGATION PLAN**			**Cod: PRA**
Environmental Aspect	**Identified Impact**	**Plan, Programs, and Measures**	**Indicators**	**Verification Mean**	**Frequency**
PRA-01 RECOVERY PROGRAM FOR AFFECTED AREAS					
Water, air, soil, economic and social.	Impacts on the quality of the environmental components.	In the event of different situations affecting the infrastructure or the area of implementation of the Project, and/or the area of direct influence, execute the Protocol to recover affected areas (see Annex 4 of this PMA).	Implemented = 1, Not implemented = 0.	Declaration of commencement of Recovery Program for Affected Areas by the Project Administration.	When required.
		Implement and update the Registry of events requiring the Protocol's application for the recovery of affected areas.	Implemented = 1, Not implemented = 0.	Execution report of the Area Recovery Protocol includes evidence.	Permanent.

9.1 ENVIRONMENTAL MANAGEMENT PLAN ANNEXES

9.1.1 Annex 1. Base training syllabus

Area	Topics to be developed
Environment	Environmental regulation Environmental management plan Pollution mitigation and prevention
Work Health and Safety	Work Health and Safety Contingency Plan Brigade Member Training Evacuation Plan
Dangerous wastes	Dangerous waste management
Communication to third parties	Mitigation and protection measures for sensitive elements located in the direct area of influence of the Project, and commitments and/or measures related to the company's environmental performance.

9.1.2 Annex 2. Compensation and Reimbursement Protocol

In the event that the operation of the Project generates an impact on the environment, health or property of third parties, the company shall use the following general procedure:

i. Evaluate the damage or impact, through a mechanism coordinated with the Environmental Authority that may consist of: technical visits to the affected area, identification of those affected, hiring an evaluating expert, economic valuation of the damage.
ii. If the company's responsibility is established, the repair or compensation to be carried out shall be scheduled, depending on the case. Deadlines and mechanisms approved by the Competent Environmental Authority shall be established.
iii. Once the compensation or repair has been made, delivery certificates must be drawn up, with the signatures of those affected, the Environmental Authority, and the Project's sponsor.
iv. A report of the actions carried out shall be sent to the Environmental Authority as a means of verifying the actions taken.

9.1.3 Annex 3. Affected Area Recovery Protocol

In the event of different situations that may affect the infrastructure or the project implementation area, the following is recommended:

SITUATION	ACTIONS
Fire:	With the support of the fire department and experts: i. Inspect the infrastructure and determine if it is safe to enter. ii. Carry out the cleaning of the place, considering: - Use full personal protective equipment (overalls, gloves, glasses, boots and a mask). - Avoid the raising and dispersion of ashes. If vacuum cleaners are used, they should have filters for small particles. Collect the ash in bags. - Materials and/or elements (machinery or equipment, others) contaminated with dangerous substances must be arranged with environmental managers. - Other items can be taken to the landfill.
Spill:	Do not dilute the spill. i. Stop, collect and clean with absorbent material. ii. Replace contaminated soil with clean soil. iii. Contaminated soil and impregnated collection implements shall be disposed of as hazardous waste.
Collapse:	i. Review the infrastructure and determine if it is safe to enter. ii. In case of determining structural risks, a technical assessment must be performed to establish the actions to be followed, including: reinforcement of structures or their definitive demolition.
Demolition:	i. Implement dust control and debris removal techniques (moistening and/or confinement of the area.) ii. Dispose of the rubble in the place allowed by the local Municipality within the sanitary landfill. iii. Clean up off-site areas that have been affected by the landslide.
Departure from the installations:	Apply the plan for revegetation and habitat restoration in the directly affected areas whose natural alteration has been as a result of the project activities.

9.1.4 Annex 4. Area departure and delivery protocol

Once the Project Administration establishes the need for closure and delivery of the area, the following actions must be carried out:

i. Establish a schedule for the dismantling of the facilities, considering:

- The equipment and machinery used in the productive activity must be uninstalled and removed, the obsolete equipment shall be used for recycling or scrapping.

- Dismantle the infrastructure trying to minimize damage to elements that can be reused.

- Compacted soils must be removed.

- The soil must be improved with a contribution of organic matter to allow the growth of vegetation.

ii. Implement a revegetation program, in order to restore the cover of the affected area. Reforestation shall be done with natural species from the area.

iii. Carry out water and soil analysis in places where activities that could be a cause of contamination were carried out, such as in fuel storage and waste disposal areas, in order to identify possible contaminated areas.

iv. If contamination is found, the corresponding corrective measures shall be taken and the applicable environmental legislation shall be met.

9.2 ASSESSED SCHEDULE

The following (see Table 9-3) describes the execution schedule of plans, programs, and measures established in the PMA, updated for the first year as of this report's date of entry.

The following symbols have been used to identify the timing of the application of the plans and programs:

Timely or permanent execution
If the execution depends on the start date and duration of the Project and/or if it is required under specific conditions (e.g., remediation plan)

The total value of the updated PMA has been estimated at one hundred and eighty thousand four hundred and five US dollars (00/100). For this assessment, costs associated with construction projects considered part of its budget has not been included.

Table 9-1 Template for presentation of the updated Environmental Management Plan

ENVIRONMENTAL MANAGEMENT PLAN		SCHEDULE												ESTIMATED COST (USD Dollars)
		Year 2019							Year 2020					
Plans and programs:		**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	
PREVENTION AND MITIGATION PLAN	**PPM**													
PPM-01 NOISE, VIBRATIONS, AND GAS EMISSION CONTROL											…			4.800,0
PPM-02 PREVENTION OF IMPACT ON WATER QUALITY											…			1.200,0
PPM-03 FUEL MANAGEMENT PROGRAM											…			
PPM-04 PROGRAM FOR TECHNICAL INSPECTION OF DREDGING											…			48.000,0
PPM-05 PROGRAM FOR PREVENTION OF IMPACT ON MARINE FAUNA											…			2.000,0
WASTE MANAGEMENT PLAN	**PMD**													
PMD-01 PROGRAM FOR MANAGEMENT OF COMMON AND VARIOUS WASTE											…			4.980,0
PMD-02 PROGRAM FOR MANAGEMENT OF HAZARDOUS AND SPECIAL WASTE											…			2.000,0
COMMUNICATION AND TRAINING PLAN	**PCC**													
PCC-01 TRAINING PROGRAM														500,00
PCC-02 COMMUNICATION PROGRAM							…	…	…	…	…			2.500,0
COMMUNITY RELATION PLAN	**PRC**													
PRC-01 COMMUNITY RELATION PROGRAM														2.000,0
PRC-02 COMPENSATION AND REIMBURSEMENT PROGRAM		…	…	…	…	…	…	…	…	…	…	…	…	1.500,0
EMERGENCY AND CONTINGENCY PLAN	**PEC**													
PEC-01 EMERGENCY AND CONTINGENCY RESPONSE PROGRAM														10.000,0
WORK HEALTH AND SAFETY PLAN	**PSS**													
PSS-01 INDUSTRIAL SAFETY PROGRAM														1.000,00
PSS-02 PERSONAL PROTECTIVE EQUIPMENT PROVISION PROGRAM														3.500,00
PSS-03 SIGNAGE PROGRAM														4.500,00
CONTROL AND MONITORING PLAN	**PMS**													
PMS-01 PROGRAM FOR ENVIRONMENTAL AIR QUALITY CONTROL														6.000,00

ENVIRONMENTAL MANAGEMENT PLAN		SCHEDULE												ESTIMATED COST (USD Dollars)
		Year 2019							Year 2020					
Plans and programs:		**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	
PMS-02 PROGRAM FOR ENVIRONMENTAL QUALITY CONTROL OF WATER RESOURCE											…	…	…	19.352,5
PMS-03 PROGRAM FOR ENVIRONMENTAL QUALITY CONTROL OF SOIL FROM SEDIMENTS											…	…	…	19.352,5
PMS-04 PROGRAM FOR BIOESSAYS ON SHRIMP MORTALITY											…	…	…	6.720,0
PMS-05 PROGRAM FOR THE RECORD OF MONITORING RESULTS														1.500,0
PMS-06 PROGRAM FOR MONITORING PHYTOPLANKTON AND ZOOPLANKTON SPECIES												…		12.000,0
PMS-07 PROGRAM FOR MONITORING BIO-AQUATIC SPECIES												…		12.000,0
PMS-08 PROGRAM FOR MONITORING FLORA AND FAUNA												…		12.000,0
PMS-09 PROGRAM FOR MONITORING OF DREDGING OPERATION											…	…	…	500,0
AREA DEPARTURE AND DELIVERY PLAN	**PAE**													
PAE-01 PROGRAM FOR CLOSURE, DEPARTURE, AND DELIVERY OF THE AREA														1.500,0
RECOVERY PLAN FOR AFFECTED AREAS	**PRA**													
PRA-01 RECOVERY PROGRAM FOR AFFECTED AREAS		…	…	…	…	…	…	…	…	…	…	…	…	1.000,0
												TOTAL:		**180.405,0**

CHAPTER 10. CONCLUSIONS AND RECOMMENDATIONS

Content

10. CONCLUSIONS AND RECOMMENDATIONS

10.1 CONCLUSIONS

The compliance evaluations carried out provide an average of 95.5% of Conformities or Compliance (C) and 4.5% of minor Non-Conformities (NC-). The lowest result (92% Compliance) corresponds to the Evaluation of Compliance with the obligations established in the Environmental License, where the Non-Conformities are given explicitly for late delivery of the Terms of Reference of this audit, in breach of what is established in Article 269 of Book VI of TULSMA, issued by M.A. No. 061 of April 7, 2015.

Based on the results of the different compliance evaluations carried out within the framework of this Environmental Audit, we can conclude that YILPORTECU carries out adequate management of its obligations and responsibilities in environmental matters, in compliance with the provisions of its Environmental License and Plan of Management, as well as the applicable environmental regulations.

Although they become objectives to be met through the execution of the proposed Action Plan, the established Non-Conformities are mainly linked to a change made in the dredging methodology - and which shall henceforth be the established way of work; therefore, the non-compliance is justified from a logic of relevance and pertinence. To address these observations, the measures associated with the area of sediment pools have been rejected and/or updated in the Plan of Proposed Environmental Management.

10.2 RECOMMENDATIONS

It is recommended that the implementation of the Updated Environmental Management Plan be carried out under the provisions regarding the scope of the measures, and their Frequency and/or execution period, mainly with those limited in time to the months of execution of dredging activities, since a future breach or omission in these shall not be possibly addressed.

Project administration must avoid falling into non-compliance and/or changes in the Project's approach that has an Environmental License - and recidivism in administrative processes submitted by the Environmental Authority - to be able to execute the activities programmed according to its work schedule.

Finally, a clear communication mechanism must be established with interested parties in the Project's area of influence, which allows a clear flow of information of interest to the parties and, at the same time, channel any doubt, observation and/or claim made from social actors perceiving negative impacts on their environment from the execution of the Project.

CHAPTER 11. BIBLIOGRAPHY

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BIBLIOGRAPHY

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CHAPTER 12. ANNEXES

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12. ANNEXES

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1.1.2 Nombramiento Alfredo Jurado y CI

1.1.3 Licencia Ambiental MAE-RA-2017-297974

1.1.4 Certificado de Intersección del Proyecto de Dragado

1.1.5 MAE-DPAEO-2019-1003-O_Aprobación TDR's AAC Dragado

1.1.6 Registro de Generador de Desechos Peligrosos

1.1.7 YPTO-GG-0383-18 Declaración Anual Desechos Peligrosos 2018

1.1.8 YPTO-GG-0361-18 Renovación de Garantía 2018

1.1.9 Autorización de Investigación Científica 2019

1.1.10 Autorización de Investigación Científica 2018

1.1.11 Adjudicación de la empresa

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1.2.4 Plan Integral de Prevención de Riesgos Laborales – SUT

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1.3.3 1.3.3 Registro de capacitación_Primeros Auxilios

1.3.4 1.3.4 Acta y registro de asistencia_Reunión informativa-Participación Social

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1.3.6 Capacitaciones y simulacros

1.3.7 Proceso de Contratación de Servicios Médicos

1.3.8 Informes trimestrales de Gestión Ambiental - Desechos YILPORTECU

1.3.9 YECU-EHS-02-01_Informe Botiquines 2019_1 W 09

1.3.10 Planos Piscinas de sedimentos

1.3.11 Informe OPERLIMP - Desechos comunes

1.3.12 Bitácora de Gestión de Desechos Peligrosos

1.3.13 Formato_Ecuador KPI Table_EHS_2018

1.3.14 Reporte práctica de traslado de herido_YILPORTECU-FDC

1.3.15 Comunicaciones Seguridad YILPORTECU-FDC

1.3.16 Registro Fotográfico – YILPORTECU

1.3.17 Formatos entrevista actores sociales

1.4 Comunicaciones institucionales

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1.4.2 YPTO-GG-0178 Notificación de Fin de Dragado

1.4.3 YPTO-GG-0158-18 Informe Tecnico de Ampliacion del EsIA -28052018

1.4.4 YPTO-GG-0374 Pronunciamiento Ampliación Estudios

1.4.5 Oficios de entrega de Términos de Referencia AAC

1.4.6 Informe Comisión Técnica_MAE-DNPMC-SGMC-2018-0049-M

1.4.7 Justificación del uso de dragas

1.4.8 Comunicación con Capitanía de Pto.Bolívar

1.4.9 PRJ-R252-MAE_Baja proceso administrativo No. 007-2018CA

1.4.10 PRJ-R255-MAE_Baja proceso administrativo No. 002-2019CA

2. Flanders Dredging Corporation

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2.1.2 Planes de Contingencias – FDC

2.1.3 Planes de Contingencia - Derrames_SOPEP

2.1.4 Procedimiento de carga de combustible – FDC

2.1.5 Plan de Inspecciones de Seguridad_General overviewlist ISM-ISPS Jobs – FDC

2.1.6 Manual de uso EPP y factura de compra

2.2 Registros – FDC

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2.2.2 Registro de Inducción y material empleado

2.2.3 Registro de Charlas de seguridad_compilado – FDC

2.2.4 Registro de Reuniones de Seguridad – FDC

2.2.5 ECU-1819-YIL-Confirmation Of Receipt PPE

2.2.6 Marcas de posición diaria _Filippo Brunelleschi (solo en versión digital)

2.2.7 Marcas de posición diaria _Pedro Alvares Cabral (solo en versión digital)

2.2.8 Forecast_Puerto-Bolivar_2018061311

2.2.9 Registro de mantenimiento en buques-draga

2.3 Reportes diarios de avance de obra

2.3.1 FDC1819_DailyReport_Filippo Brunelleschi_Compilado

2.3.2 FDC1819_DailyReport_Pedro Alvares Cabral_Compilado

2.4 Draga Filippo Brunelleschi

2.4.1 Registro de Contrato - Draga FB

2.4.2 Ficha Técnica de Draga Filippo_Brunelleschi

2.4.3 Reporte de nivel de ruido durante pruebas en mar_2003 09 25

2.4.4 Medición de emisiones NOx – FB

2.4.5 Eficiencia energética – FB

2.4.6 Cert. Intl. Prevención de la Contaminación – FB

2.4.7 Certificado Equipo Médico – FB

2.4.8 Inspecciones de Seguridad – FB

2.4.9 Registro Fotográfico - Filippo Brunelleschi

2.4.10 Manifiestos Únicos - FB

2.5 Draga Pedro Alvares Cabral

2.5.1 Registro de Contrato - Draga PAC

2.5.2 Ficha Técnica Draga Pedro_Alvares_Cabral

2.5.3 Reporte de nivel de ruido dutante pruebas en mar_2012 10 01 – PAC

2.5.4 Medición de emisiones NOx – PAC

2.5.5 Cert. Eficiencia energética – PAC

2.5.6 Cert. Intl. Prevención de la Contaminación – PAC

2.5.7 Cert. Inspección Equipos Contra incendios – PAC

2.5.8 Inspecciones de Seguridad – PAC

2.5.9 Registro Fotográfico - Pedro Alvares Cabral

2.5.10 Manifiestos Únicos – PAC

3. Documentos técnicos del Dragado

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Dredging Operations

3.1.2 Plan de Trabajo_FDC1819.PPR.81.01.e.01 Programme of Works Phase 1 Stage 1

3.1.3 Plano de División Depósito en Canal de Jambelí_FDC1819-SUR-RQ0012-0002-0 Dump Area

3.1.4 Planificación semanal PBO_Berth

3.1.5 PRJ-R133-SURCONSUL_Informe Condiciones Estabilidad - Piscina 2

3.1.6 Mediciones FDC1819.MES.61.01.e.02 Survey Method Statement

3.1.7 1819-RQ0153_Outsurvey Volumes to Overdredge Design_rev 1

3.2 Informes de Fiscalización Ambiental (solo en copia digital)

3.2.1 Informe de Fiscalización - marzo 2018

3.2.2 Informe de Fiscalización - abril 2018

3.2.3 Informe de Fiscalización - mayo 2018

3.2.4 Informe de Fiscalización - junio 2018

3.2.5 Informe de Fiscalización - julio 2018

3.2.6 Informe de Fiscalización - agostoo 2018

3.2.7 Informe de Fiscalización - septiembre 2018

3.2.8 Informe de Fiscalización - octubre 2018

3.2.9 Informe de Fiscalización - noviembre 2018

3.2.10 Informe de Fiscalización - diciembre 2018

3.2.11 Informe de Fiscalización - enero 2019

3.3 Informes del Plan de Monitoreo y Seguimiento

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3.3.2 Informe de Monitoreos - abril 2018 (solo en copia digital)

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