Chapter 16
Forms, Tables and Charts to facilitate inspection
EIA Espejo de Tarapacá

Region of Tarapacá, Chile

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16. FICHAS, TABLES AND CHARTS TO FACILITATE AUDITING

EN E(I) This chapter Is includes The Content Summary tabs for the project "EIA Espejo de Tarapacá".

The Chapter of chips, tables and charts to facilitate the auditing presents the set of contents Described throughout the EIA based on the indicated by DS N ° 40/2012, in its article 18 literal N) which includes the following chapters:

i) **Project description:** Identifies, for each phase of the project or activity, the works or actions that are envisaged to execute; The form, place and opportunity of its execution; And the reference of the EIA page where the work or action is described in detail.

ii) **Prediction and evaluation of the environmental impactf the project or activity:** Identifies, describes, evaluates and hierarchies for each phase of the project or activity, the environmental impacts generated by the project.

iii) **Detailed description of the effects, characteristics or circumstances of article 11 of the law that give rise to the need to develop an environmental impact study:** It describes the effects, characteristics or circumstances that give rise to the elaboration of an EIA, based on both the characteristics of the project, and the provisions of article 11 of law N ° 19.300 and articles 5 to 10 of DS N ° 40/2012.

iv) **Mitigation, repair and/or compensation measures Plan:** Identifies, for each phase of the project or activity, the works or actions that are envisaged to be executed; The environmental component involved; The associated environmental impact; The description of the corresponding measure, whether for mitigation, repair and/or compensation, or for risk prevention or accident control; The form of implementation; The indicator to quantify, if applicable, compliance with the measure; The opportunity and place of its implementation; and the EIA page reference where the measurement is described in detail.

v) **Contingency and emergency prevention Plan:** associated with possible risk or contingency situations identified: identifies, for each Phase of the project or activity, the functions associated to the different organisms, such as emergency brigade, surveillance, operations and maintenance personnel, to achieve the control of an emergency with the least possible impact, to the people, to the teams and to the Environment.

vi) **Monitoring Plan of the relevant environmental variables:** Identifies that will generate effects or present features that necessitate the implementation of various monitoring or environmental monitoring measures.

vii) **Compliance Plan for applicable environmental legislation and sectoral environmental permits:** Identifies, for each phase of the project or activity, the applicable environmental regulations, including sectoral environmental permits; The environmental component involved; The manner in which the obligations contained in those rules will be complied with, and the body of the administration of the competent state in its control, if it is established.

viii) **Volunteer environmental Commitments.** It indicates those commitments that the owner of a project voluntarily acquires in order to minimize, repair or compensate those impacts associated with its implementation.

16.1.1. Transcription of Proejct

Table 1. Chapter Description of Proejct.

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
Identification Holder	Espejo de Tarapacá SpA	Construction, operation and closure	1.1.1.
Project name	"Espejo de Tarapacá"	Construction, operation and closure	1.2.1.
Brief description of the project	Espejo de Tarapacá SpA., hereinafter the headline, aims to carry out the project "Espejo de Tarapacá", which consists of a Reversible hydraulic plant, pump-generation, in the coastal sector of Caleta San Marcos, about 100 kilometers south of the city of Iquique, Next to their respective electric transmission line. An installed power pump of 300 MW and an installed power of up to 300 MW is estimated. In the pumping scheme, the plant will consume 2.28 GWh/day, average yearly, pumping on average a flow of 45 m3/s for 8 hours, and in generation scheme will produce 1.75 GWh/day, average yearly, discharging an average flow rate of 28 m3/s. The energy will be injected into the interconnected system of the Grande Norte (SING), in the Lagunas substation, by means of a 65 km long high-voltage electrical transmission Line (LTE).	Construction, operation and closure	1.2.2.
Objective of the project	The main goal of the project is to store energy on a large scale. One of the attributes Most important of this Central is its capacity to viable the entry on a large scale of non-conventional renewable energies (NCRE) such as solar and wind, by means of its capacity to transform, through the accumulation of water, energy of intermittent nature, in Continuous energy 24 hours a day, 7 days a week.	Construction, operation and closure	1.2.3.
Typology of the project	In accordance with article 3 of DS no 40/2012: The project corresponds to the typology referred to in the letters: High-voltage electrical transmission lines and their substations B. 1. High-voltage electrical transmission lines are those lines that conduct electrical power with a voltage greater than twenty-three kv (KV) B. 2. Substations of high-voltage electrical transmission lines are defined as those relating to one or more lines of electric power transport and which are intended to maintain the voltage at transport level. Energy-generating power plants greater than 3 MW	Construction, operation and closure	1.2.4.

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
Project or activity modification	It is noted that this project does not modify any project or activity previously submitted to the environmental impact assessment system.	Construction, operation and closure	1.2.4.1.
Development of the project in stages	Since the project "Espejo de Tarapacá" foresees within its execution, the execution of a possible stage of generation of energy through a photovoltaic park, in the present section contains the information required by the regulation of the SEIA. **Objective of the stage** The objective of this stage is the development of an electricity generation project based on large-scale non-conventional renewable energy from a photovoltaic solar plant with a capacity of 600 MW, in addition to the construction and operation of a A high voltage line that will transport the energy to the existing Laguna substation. This stage is of interest for the development of the project Espejo de Tarapacá, since this project would take advantage of the possibility of pumping and storing part of this energy to satisfy its energetic requirements. To its location, it should be noted that this stage will have its location in the commune of Pozo Almonte, province of Tamarugal, Región de Tarapacá. Finally, it is stated that the development of this stage will enter opportunely the environmental impact assessment system, in compliance with art. 3 letters B) and C) of the regulation of SEIA and art. 10 letters B) and C) of law 19,300, which states that they must Pre-SEIA the high-voltage electrical transmission lines and their substations, as well as the power generating plants greater than 3 MW, respectively. The form of entry of this stage will be through an environmental impact study, which will contain a plan of environmental measures appropriate to makeIt takes care of the possible significant impacts that are generated in this stage. **Reasons or circumstances that depend on the stage** The dependence on the implementation of this stage lies in technical and economic considerations that are currently unpredictable and of which their development depends in the future, such as: 1. Do not have technical problems for the feasibility of connecting a solar park of great power in the lagoons (level of shorts, etc.), 2. Sufficient radiation levels to be able to produce a cost per reduced solar MWh (for example, radiation in lagoons is significantly lower than in Maria Elena, 150 kilometres south) and 3. Connection point of the customer (s) for a power supply contract. If they are too far away from the lagoon connection point, it is preferable to locate the solar plant at another node closest to the system. In this way, in the event that the infeasibility of this stage of the project is finally determined, Espejo de Tarapacá A timely process the purchase of electricity with any project present or future, which allows to supply the energy requirements that it deserves. **Actions and associated works for the stage**	Construction, operation and closure	1.2.4.2.

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	The activities envisaged for the construction phase of this stage are as follows: • Habilitation of facilities of slaughter. • Transport of machinery and materials to the project area. • Assembly of panels. • Construction of underground gutters. • Substation construction. • Construction of control room and operations. • Connection and start-up. For its part, the operation phase considers the following activities: • Solar Park operation. • Maintenance of modules and equipment.		
Project Lifetime	The lifespan of the project is indefinite.	Construction, operation and closure	1.2.6.
Location of the project according to political-administrative division	The project will be located administratively in the communes of Iquique and Pozo Almonte, province of Iquique, Región de Tarapacá, approximately 100 km south of the city of Iquique. The nearest towns are the Caleta San Marcos and the Caleta Rio Seco.	Construction, operation and closure	1.3.1.
Justification of location	The location of the project is due to the joint existence of the following natural conditions: • A coastal cliff that provides the differential of COTA. • A natural depression of the terrain that allows the materialization of a reservoir. • Proximity to the sea that allows the water resources to be taken and discharged.	Construction, operation and closure	1.3.5.
Main permanent Works	The project consists of the following main permanent works: Submarine Sector: • Underwater Take and unload Underground Sector: • Lower Tunnel • Cavern of Machines • Pique in pressure	Construction and operation	1.4.1., 1.4.2., 1.4.3., 1.4.4.1.4.5.

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	• Upper Tunnel Sector Costa: • Area of operations • Desalination plant • Portals Costa • Collection areas • Access roads • Power lines Plateau Sector: • Reservoir • Intake and discharge Reservoir • Portals Reservoir • Area Control and Communication reservoir • Power lines • Access roads • Areas of stockpiles Pampa Sector: • High voltage power line (LAT) • Service path high voltage electric transmission line		
Permanent works major submarine Sector	The work of underwater taking and unloading is located Approximately at Cota-15.5 M.a.s.l. The intake that will surface to the underwater bottom from the lower tunnel, is located to 340 m of the coast and has a diameter of 5 m, approximately. From this work the water is taken to be uploaded to the reservoir in pumping mode and from this work water is discharged into the sea in generation mode.	Construction and operation	1.4.1.
Permanent works main underground Sector	**Lower tunnel.** Lower tunnel. Once water is captured from the sea, from the work of Toma, the water passes to the lower tunnel which develops between the sea and the Cave of machines. Because it is located in an area of low internal pressures and that the quality of the rock allows it, in general it is envisaged not to cover this tunnel with molded concrete. The lower tunnel is approximately 1830 m long and consists of 7 sections. 2. Lower tunnel floodgates. It has as function to allow the closing of the Stoplog type floodgates that are They open and close to control the passage of water through this tunnel.	Construction and operation	1.4.2.

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	3. Lower tunnel gate Access window. For the execution of the construction, it is envisaged the development of an Access window, from the surface to reach the tunnel Inferior to the east of the floodgates. 4. Lower-equilibrium chimney. It will be of hydro-pneumatic type, with a design volume of 300 m3 useful, and is designed to absorb the phenomena transcientes of the operation of the plants (shots and rejects of load). **Cavern of Machines** 1. Cavern of Machines. It has as function to contain in its interior the equipment of generation (or pumping) corresponding to the turbines and generators; adduction shutoff valves and all auxiliary equipment. 2. Trifurcaciones. It has as function to divide in three the runoff that comes from the lower tunnel, then to continue towards the cave of machines in three branches. Upstream of the cavern of machines There is also a trifurcación that rejoins the flow to move to a single armoured tunnel that is already part of the upper tunnel. 3. Transformers Cavern. Three (3) main transformers are contemplated, located inside a cavern separated from the main cavern. 4. Electrical substation. An underground GIS-type compact SSEE located at the top of the Transformers cavern is planned 5. Tunnel access to the cavern of machines. It constitutes the means of entrance to the cave of machines and to the other underground works where the equipment of the plant will be installed. 6. High Voltage line (underground section). From the Transformers cavern outside the first kilometer of the LAT considered by the project. **Pique in pressure** 1. Chop in pressure. Corresponds to an underground vertical work where water circulates under Pressure. Have Around 502 m long and 4.9 m diameter connecting the upper tunnel to the shielded tunnel. **Upper Tunnel** 1. Armoured tunnel. It is located immediately after the cave of machines towards the pressure sting, has an approximate length of 180 m, with 13% inclination. 2. Upper-equilibrium chimney. It is intended to absorb the phenomena transcientes of the operation of the plants (outlets and rejects of load), has a vertical stretch of about 103 M that part in the upper tunnel and then Continues for approximately 535 M to Its surface outcrop and a diameter of 4.9 m. 3. Upper Tunnel. It corresponds to the tunnel that connects the reservoir with the pressure bite with an approximate inclination of 13% and a length of about 886 m.		
Permanent works Main Coast Sector	**Area of operations.** 1. Administration and Control building. Its main function is the operation of the plant and is located adjacent to the portal of the tunnel access to the central in the coastal sector near the Caleta San Marcos. 2. Workshop building, Bodega and diesel group. Located next to the administration and Control building, it will contain	Construction and Operation	1.4.3.

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	warehouses for spare parts, tool storage, general electrical equipment, 500 KVA diesel equipment. Equipment required for a "black" game, in cases of black Out (service drop). 3. Parking lots. Located on the side of the administration and Control building. They will be designed for light vehicles and to a lesser extent for heavy vehicles. 4. Industrial waste yard and warehouse for temporary collection of hazardous wastes. During the operation stage following minor maintenance works, low amounts of industrial and/or hazardous waste could be generated. To manage them you will have an industrial waste yard of 2 x 3 m fenced and a warehouse of temporary collection of hazardous waste of 2 x 2 M. Both will be close to the workshop building, bodega and diesel group described above. No treatment will be made and your withdrawal and disposition will be contracted with a duly authorized third party. 5. Wastewater Treatment Plant (PTAS). It is considered the habilitation of a modular treatment plant type Ecojet or similar with sufficient capacity, which will treat the water served by means of a biological process of activated sludges. It will operate 24 hours a day, all the days of the year during the required period, and the treated water shall comply with the microbiological parameters of the water quality standard for irrigation (NCh 1,333). As for the sludge generated, these will comply with the provisions of the DS N ° 4 of sludge, and be removed by a clean pit company authorizesA to be taken to final disposition. 6. Medium Voltage electric transmission lines (LMT) and transformer. It aims to feed the area of operations. It will be located in the coastal area of works, near the Caleta San Marcos. It will have a length of 1 Km starting from its connection to the existing network (parallel to the route CH-1). **Desalination plant** It constitutes the potable water supply system for the project. It will deliver water in a growing manner depending on the requirements of the construction site and the camp, reaching a maximum of 5 L/S. During the operation phase it is estimated that the average production will be 2, 75 L/s, during this phase the intake and discharge of seawater will be carried out from the lower tunnel and will be done through the work of taking and unloading. **Portals Costa.** considers access to works arranged in the underground sector. 1. Scuttle of floodgates. It consists of a work designed to store, place and extract the maintenance floodgates of the sliding type (Stop-log), which will be operated by a crane truck, which will arrive in the path of access to this work. It will be located in the coastal Sector, between the Cave of machines and the work of taking and unloading, and allow to isolate the cavern of Machines of the sea, in the lower tunnel 2. Portal of the Access window to the gate. It consists of a structural support of the ground located at the Entrance of the window of access to the gate, which will allow the entry of machinery, equipment and work materials, as well as vehicles and workers to the underground works of that sector. 3. Portal tunnel access to the cavern of machines. It corresponds to the concrete work that begins the tunnel of access to the cavern of machines. It includes works that will allow the installation of high voltage electrical cables ranging from the		

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	underground electrical substation (S/E) to the surface and to the high voltage towers. **Collection areas** In the coastal sector, two billets are considered, one corresponding to the material extracted for the construction of the new section of North access road in the sector of Río Seco, and another in the sector of the administration and Control building. The first one considers a surface of 2 ha and the second a surface of 6 Has. It is envisaged to deposit the material in terraces of 5 m of height with steps of 2 m. **Access roads** The development of the project requires the implementation of various accesses to the Dobras contemplated, which corresponds mostly to short sections that splice with the CH-1. The paths contemplated correspond to: 1. North Access road (Sector Costa section). This route will connect the route CH-1 with the route A-750, which starting from the coast has an approximate length of 15.3 Km in total, is composed by 5 km of New road (projected) and the rest will be an improvement of an existing road. This route will be double carriageway with granular material and a width of approximately 8 m, considering slopes of 3 m and berms of 1 m. 2. Splice way to Camp. Access road connecting the route CH-1 with the camp for construction. 3. Splicing to administration and Control building sector. Access road to the administration and Control building from Route CH-1. 4. Route of service to the area and installation of operations of the Dry River area and in the San Marcos sector. A path that allows access to the area of operations and installation of the Dry River area, from the new North access road. 5. Service path for the hatchery area in San Marcos. Road to the entrance to the sector of floodgates from Route CH-1. 6. Way of service to gunpowder access. Way of access to the magazine's sector, from the area of installation of slaughter. **Power lines** It is considered the construction of 4 electric lines in the coast Sector. These lines are: 1. Middle line voltage Supply camp. The camp will be supplied with electricity through a connection to the existing electrical line running parallel to Route CH-1. 2. Line medium voltage Supply main operation and operations area. Located in the coastal area of works near the Caleta San Marcos, the line will have an area length of 1.5 km and energize the plant Desalination plant, operations area and operation facility. This line will continue through the access tunnel to the Machine Cavern. 3. Middle line tension Road North Access Reservoir. It is described in detail in the plateau sector. 4. Line high voltage supply project. This line arises from the portal of the tunnel of access to the cavern of Machines, where the underground electric sub-station will be housed. Since the vast majority of the 65 km of the route of this line, are located in the Pampa Sector, in the latter one describes its detail.		

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
Main permanent works Plateau Sector	**Reservoir** 1. Reservoir area. The reservoir is located on the altitude 584 M.A.S.L. approximately, will have an approximate surface of 375 ha and take advantage of two natural basins of the sector that will unite by means of the construction of a connecting channel. For the insulation of the soil, as well as to avoid seepage, it will be waterproofed with a bituminous membrane. considers a permanent storage volume of 12 million m^3, a base volume of 15 million m^3 and a normal operation volume of 25 million m^3. 2. Waterproofing membrane cover of the reservoir. The reservoir will be covered with a membrane which has safety certification for drinking water storage. As for the infiltration of the geomembrane, it is understood that due to the nature of its composition and layer of bitumen, these have a high impermeability. Its main characteristics are: • Minimum membrane thickness 2.5 mm • Minimum elasticity 30% • Resistance to static punching: greater than 2.7 KN • Component: Sand, Bitumen elastomer (or modified synthetic), non-woven polyester, glass veil, anti-roots film. • "Carpet" Cloth Dimensions: Min 4 m x 80 m 3. Exterior and dividing pretile. • Exterior or edge pretile: Earth Pretile, whose Purpose is to provide a regular limit for the flood zone, serve as a membrane anchorage for waterproofing the reservoir and serve as a roadside of the reservoir, aims to complete the confinement of the East and West reservoirs. • Parapet or Central divider: Its purpose is to divide the reservoir into two sub-reservoirs. • Roads on perimeter pretile: The project considers a way over the reservoir Pretile for circulation during the operation stage. You will have restricted access for project personnel. The road will be 6 m wide. 4. Connection channel between basins. There is a horizontal channel dug to the height 602 M.s.N.M., of 7.5 m of basal width, 275 m length approximately, and cutting slopes 1:2 (H: V) for ExcavacióN and fill 2:3 (H:V) the Parapet. IIncludes a structure of gates type Stop log, which will allow to operate in a normal way, with only 1 open door at the time that is required to work with one of the sub-reservoirs of the West sector (north or south). 5. Drain channel. Located in the North section of the West Reservoir and its function is to connect 2 sectors that are isolated under the altitude 601 M.A.S.L. to maintain the flow of water. It will have about 133 m long, 5 m wide and a maximum of 4 m of depth approximately. It will also have waterproofing. **Intake and discharge Reservoir** 1. Channeling of the reservoir. Work that connects the upper tunnel with the reservoir. The work of taking and unloading coincides with the layout of the exterior parapet and consists of a structure that contains a set of 4 emergency floodgates of rectangular section of 5 m high and 3 m wide. The purpose of this work is to be able to operate the plant with only 2	Construction and operation	1.4.4.

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	open floodgates and using only one of the parts of the West Basin when the water level is placed under the height 600 M.A.S.L. of the reservoir. 2. Approach channels. correspond to 2 channels of approximately 500 and 350 m long each, which connect the sub-reservoirs north and south of the West Reservoir with the work of Toma. **Portals Reservoir** 1. Upper Tunnel Portal. Structure of entrance to the upper tunnel that leads the water to and from the reservoir in the upper part of the underground works. It is located after the work of taking the reservoir and will be permanently immersed. It is about 25 m long and 10 meters wide. 2. Portal chimney of superior equilibrium. The balance chimney Portal is the concrete structure that supports the ground at the point where the balance chimney reaches the surface. **Area Control and Communication reservoir** 1. Panel of control. It consists of a closed local control Panel for the operation phase. Se Use to monitor control parameters of the plant and will have a camera that allows to observe the sector of the Portal of the upper tunnel from the administration and management building. The signals will be transmitted via optical fiber installed in the medium and/or high voltage transmission lines. **Power lines** 1. Line of medium Voltage road access North -Reservoir. As described in the coastal sector, from the existing line that runs parallel to the CH-1, near the dry river will be mounted a new line of medium tension that goes next to the North access road to the Sector of the reservoir. 2. High Voltage line. This line arises from the portal of the tunnel of access to the cavern of Machines, where the underground electric sub-station will be housed. Since the vast majority of the 65 km of the route of this line, are located in the Pampa Sector, in the latter one describes its detail. **Access roads** 1. North access Road. This route connects the Route CH-1 with Route A-750 to 85 Km approximately south of Iquique, Near Rio Seco; TieNE an approximate length of 16 KM, composed of 5 km of new road (projected) and the rest will be an improvement of an existing road. It will have a double carriageway, a granular material folder and a width of 8 m, considering slopes of 3 m and berms of 1 m. 2. Improvement Route A-752. This section will be about 0.7 km, starts at the junction of Caminor north Access with route A-752 and ends at the splice With route A-752 by-Pass. The road will be improved for public transit and the project. This route will be double carriageway with granular material and a width of 8 m, considering tracks of 3 m and berms of 1 m in order to avoid emissions. 3. By-Pass Route A-752 Reservoir. This road has an approximate length of 5 KM. Since part of the plot will be flooded by water as it coincides with the reservoir, it is considered a deviation from this route to the west in the reservoir sector. This		

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	plot will be double carriageway, with a granular material folder and with a width of 8 m, it has been considered a duration of 6 months for its construction. 4. Paths to the work fronts. The road to work fronts will be taking advantage of existing footprints. 5. Roads from reservoir works to billets. To access the projected billets, a road will be enabled, through the compaction of the terrain, in order to facilitate the displacement of the trucks and construction machinery. 6. Way of service to the Portal Superior tunnel. Road that joins the installation of slaughter of the plateau Sector with the Portal of the upper tunnel. 7. Way of service to the chimney-balance. Path of access to the chimney of equilibrium, will join the installation of slaughter with the portal of this work. 8. North sector splice West Reservoir. It is considered a splice from route A-752 Towards the northern sector of the West Reservoir. In this sector a new section of the route A-75 will be carried out2, with the same standard: a granular material folder with an approximate width of 8 m (3 m tracks and 1 m berms). A proposal for a convention to carry out all the road work related to this project was entered before the Directorate of Highways of the region 9. High Voltage line maintenance road. Along the high voltage line a maintenance path is developed, which will be the same used for its construction. This road as well as the line is described in the Pampa Sector. **Collection areas** We envisage the implementation of three (3) collection sectors in this sector, which will receive material of excavations From Of the different working fronts. All the billets will be built in terraces of 5 m of height and 2 m of step, it is estimated that with two terraces will be sufficient. The estimated surfaces correspond to: 1. Collection 1: The collection N ° 1 will be located to the north of the West Reservoir, will have an area of 4.4 ha. 2. Collection 2: The collection N ° 2 will be located south of the West Reservoir, it will have an area of 4.6 ha. 3. Collection 3: The collection N ° 3 will be located to the east of the West Reservoir, will have an area of 11 ha.		
Main permanent Works Pampa Sector	**High voltage power line (LAT)** LAT will have a Nominal voltage of 220 KV, a Approximate extension of 65 km, It will have 202 towers and a strip of servitude defined for each vain. Your tour starts In the commune of Iquique, the point of arrival to the cliff is approximately in the coordinates UTM 7,666,727 n – 386,121 E, at a height close to 615 M.A.S.L. and ends at the S/E lagoons UTM coordinates 7,698,221 N – 427,843 E, at an approximate height of 950 M.A.S.L., located in the commune of Pozo Almonte region of Tarapacá. In the final stretch, 600 meters approximately before S/E Lagunas, it is planned for a next stage a sectional substation for the connection of a future photovoltaic energy project. For this reason, the last 600 m of the line will be with two conductors per phase. It contemplates dampers in all its extension, in order to reduce the oscillations of the subvain, to dampen the wind vibrations		

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	and to maintain the stability of the drivers. The transmission line structures will be double-circuit, metallic, latticed, self-supporting and hot-galvanized steel. The projected structures will have number plates and plates of danger of death; For your Insulation will preferably be used Glass and TThe insulators will have a zinc Golilla. As set out in the NSEG 5 En. 71, the vertical distance of the conductor to the ground will reach a maximum of 7.82 m, while the horizontal distance to the nearest construction is 4.92 m. All the structures carry at least one permanent earth connection, and the grounding mesh It will be located at least 600 mm ± 50mm below ground level. **Service path high voltage electric transmission line (Pampa Sector)** The way of service to be used by the LAT will be the same road used for the construction and covers is about 67 km with an average width of 3.5 m.		
Major temporary works Sector Costa	1. Camp. The project includes a permanent camp during the construction phase, where the workers spend the night. This camp will be located 7.5 km north of Caleta San Marcos on the east side of Route CH-1. For the camp site area has been considered an area of 4 ha, to accommodate about 250 people on average and about 500 people at the peak construction project. Consider the following facilities: offices, recreation areas, accommodation building, first aid room, casino, bathrooms and showers, Abastecimi systemNto of potable water, storage and management of waste, parking, warehouses, sewage treatment plant and electric line. 2. Powder keg. Sector intended for the storage of explosives, detonators, retarders and related materials. Comprises 900 m^2 Surface and will be located to 500 m from The nearest facilities. 3. Construction facilities. The project considers four operations facilities, three of which are Found in the Costa sector: • Main operations Installation (San Marcos): It will operate during the entire construction phase. Its location is envisaged on a surface of 4 Ha at a distance of 250 m from where the administration and Control building will be built. It will contain offices, dining room, bathrooms, exchange room, potable water supply system, fuel storage, temporary storage of hazardous waste, domestic waste yard and construction, industrial waste yard, Minor maintenance workshop, concrete plant, laundry sector míxer trucks, storage of matterES, medium voltage electric transmission Line (LMT) and Transformer, among others. • Installation of work for the construction camp: This installation will be modular and have administrative offices, chemical baths, as stipulated by the DS N ° 594, warehouses for the storage of materials, drums for waste Domestic, yard for construction waste, parking, temporary storage of materials and equipment for construction and receive the power from the LTE existing in the sector. • Installation of Slaughter Road North Access-Caleta Rio Seco: It will be located near Caleta Rio Seco and have offices, parking lots, chemical baths, warehouses to store construction supplies and yard waste home and industrial	Construction	1.4.3.

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	corresponding To the construction of the first section of the North access road.		
Temporary works Plateau Sector	1. Powder keg. Sector intended for the storage of explosives, detonators, retarders and related materials. Comprises 900 m^2 Dand area and will be located at 500 m from the nearest installations. 2. Construction facilities. It has the same characteristics as those described in the coastal sector, It will have offices, parking lots, chemical baths, warehouses to store construction supplies and Patio de ResiduResidential and industrial.	Construction	1.4.4.
Temporary works Pampa Sector	Mobile Fronts of Works LAT (Pampa Sector). It is considered the deployment of mobile working fronts according to the progress of the construction of LAT. These fronts include: offices, bathrooms, sSystem Drinking Water supply, waste storage site, hazardous waste storage containers, parking lots and material storage area.	Construction	.4.5.
Construction phase	The main activities associated with the construction of the project correspond to: 1. Hiring of Manpower 2. Phase Construction Schedule 3. Construction activities: • Submarine Sector • Underground Sector • Sector Costa • Plateau Sector • Pampa Sector 4. Machinery equipment, supplies and services in construction phase 5. Location and amount of renewable natural resources to be extracted 6. Atmospheric emissions 7. Waste generated	Construction	1.5
Hiring workforce	During the construction of the plant a variable value of labor will be used over time, which is It consists of supervisors, area chiefs, Risk preventionists, foremen, mechanics, electricians, day laborers, etc. The total workforce will be 750 persons, with an average utilization of 375 people, mainly of skilled labour. The execution of the works will be subcontracted to specialized companies in each one of the works of the project. The hiring of local workforce will be privileged for all those activities that do not require a particular technical specialization. The work regime will be Monday to Sunday in shift system, 3 shifts for underground works and 1 shift for surface works.	Construction	1.5.8.
Construction phase Schedule	The construction stage will be extended for an approximate period of 43 months, in which the construction of all the works of the project will materialize.. The start date of the construction phase is estimated at The first semester of the year 2015. The start milestone will correspond to the Construction of the work facility of the coastal Sector near Rio Seco.	Construction	1.5.6., 1.5.7.

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
Construction activities: Submarine Sector	**Underwater Take and unload** For the construction of the marine take, a perforation will be carried out in the seabed through the use of the constructive method called Norwegian shot. For the protection of this perforation (or mouth of the work of taking/discharge of seawater), as well as, to avoid the entry of fish or any other element present in the zone will install the work of Take/unload. A period of 5 months is estimated for installation and assembly.	Construction	1.5.1.
Construction activities: Underground Sector	**Construction tunnels, chimneys and windows** The underground Sector considers the construction of the following tunnels, chimneys and windows: 1. Lower Tunnel 2. Lower Tunnel Gate Access window 3. Lower balance chimney 4. Auxiliary tunnels 5. Tunnel access to the cavern of machines 6. Armoured tunnel 7. Upper Balance Chimney 8. Upper Tunnel The excavation and maintenance of the works indicated will be carried out through The Drill & Blast method, mainly using and Systematically the following materials: explosives, rock bolts, projected concrete reinforced with steel or fibre mesh, Norwegian framess or reticular steel frames. **Trifurcaciones Construction** Contemplate 3 Lower or unloading branchesWhat They drive the waters from the cave of machines to the lower tunnel, and 3 upper or adducting branches, which connect the Trifurcación With the Machine Cavern. **Caverns Construction** It is considered construction of The cavern of machines and Cavern of Transformers. The caverns will be dug with The Drill & Blast method. The entrance to the building will be through the tunnel access to the cavern and once you reach the area of the cavern, you will continue digging an inclined gallery to access the area of the vault. Then it will advance down and digging in banks to complete the height of the cavern. **Construction of Piques** The underground Sector considers the construction of the following bites: 1. Lower tunnel floodgates: it will be excavated using the conventional Drill and Blast method, vertically excavated sequentially. 2. Pique in pressure: it will be built once the upper tunnel is excavated until the high point of the pique, there will be executed in the first instance the pilot drilling in all its height to the low point in the zone of the elbow of arrival to the	Construction	1.5.2.

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	cavern. Once the cave access tunnel has been excavated with the auxiliary tunnel up to this point, the reamer will be hooked to 4.2 m in diameter, proceeding to finish the perforation from bottom to top, via successive expansions. **Armoured tunnel construction** This tunnel will be constructed in a similar way as described for the construction of the other tunnels. It is approximately 120 m long, located between the pressure and the cave of machines. **Electrical substation Construction** Whereas the electrical substation is of the GIS type, it must only be mounted. The SSEE will be installed in the upper part of the Transformers cavern, which will be built according to the method described above.		
Construction activities: Costa Sector	**Area of operations** 1. Administration and Control Building: The main structure is concrete, with foundations that will have a maximum depth of 1.5 m under the natural terrain. 2. Workshop building, warehouse and diesel group: it will have a metal structure, concrete slab and will be completely covered and closed. The surface will be 260 m2. The winery will have a total area of 18 m2. In the Far east of this building will be located the enclosure for the diesel emergency group. 3. Parking: For the location of the parking lots (about 12) of light vehicles some minor ground movements will be made in order to match the terrain. 4. Non-hazardous industrial waste yard: it will be located on the side of the slaughter plant and will have an area of 500 m2. It will be fenced by a metal mesh throughout its perimeter and will have a controlled access door. 5. Warehouse of temporary collection of hazardous waste: it will correspond to a closed enclosure with frames and steel mesh of 2.20 m of height, which will have a cement radier floor with pouring moat for the oils. The roof will be covered with zinc plates that cover the entire enclosure and must protrude at least 30 cm, on all sides. The sectors of temporary collection of hazardous waste will be signposted according to type of waste, that is: batteries, oils, lubricants and fats. 6. Wastewater Treatment Plant (PTAS): The Pesetas It is of modular type, for it will be carried out minor earth movements to install the modules. 7. Transmission linesMedium Voltage electric sion: The medium voltage electric transmission lines will have poles of 11.5 m height. The excavation for the installation of the Poles will have a depth of 2 m. **Desalination plant** The construction of the desalination plant will begin with leveling the ground to build a stable surface where 3 metallic containers of the maritime type and 2 filters are deposited. The containers and the filters will be anchored to the concrete slab by means of anchors and are considered as Earth-shielded. The desalination plant covers approximately 120 m2. **Portals Costa**	Construction	1.5.3

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	The construction of the Portals Gate Access window And Tunnel access to the cavern of machines, They will have the same construction characteristics, this means that they will be concrete, they will be used mixer trucks, metal and/or wood moulds and enfierradura. **Collection areas** The excavation material collection sector will receive the material transported in hopper trucks that will transport it from the points of excavation to the billets. The dumps will be moistened periodically. They are considered to be built in terraces of 5 m height and each step of 2 m with a inclination of 5:1. (H: V). **Access roads** The design has considered to privilege existing footprints, in such a way to minimise the intervention of the terrain. All roads will have the same form of construction. The main activities will consist of Earth movements and compaction; In the case of the road North Access and the network of secondary roads of permanent character will proceed to the application of Bischofita, other similar material or moistening. Finally, the corresponding signage will be installed according to the current regulation. In general it is considered to obtain the material for the embankments from the lateral excavations and the eventual excess of cuts will be deposited laterally as overwidths of the platform. **Powder keg** For the construction of the magazine is considered the leveling of the terrain, excavation, filling, construction of foundations and radier to then implement a perimeter closure. The waste generated will be arranged according to the current regulations. **Slaughter facilities** The construction of the slaughter facilities will be carried out On wooden foundations (support cleats) or concrete and will mount the infrastructure consisting mainly of adapted containers. materials, equipment and structures will be transported by truck. Some works will require the use of cranes and heavy equipment. **Camps** The camp will have an infrastructure based on a prefabricated wood system and/or metal modules, container type. They will be assembly structures in the field, adapted to the needs of space and use. A period of 5 months is estimated for its construction.		
Construction activities: Plateau Sector	**Reservoir** The Location of the Reservoir will take advantage of two natural watersheds in theThe That will be joined by the construction of a connecting channel. The works envisaged for their construction consist of: 1. Waterproofing membrane cover of the reservoir. The installation will be done in stages, starting with the northern sector reservoir, following the southern sector and ending at the East Reservoir. For its installation it is considered:	Construction	1.5.4.

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	• Escarpment or cleaning of the ground of foundation, removal of Skittles and destoned supErficial of larger pieces. • Compaction of the entire surface. • Compacted padding in the most depressed and matching sectors in order to obtain a more horizontal support for the geomembrane. The Geomembrane will be installed in strips, according to the width and length specified, starting from the lower sectors towards the higher sectors. The different strips of this membrane will overlap enough to be welded, what will be done By way of a conventional welding, With propane flame and a roller to press on the overlap. 2. Exterior and dividing Pretile The parapets will be built using backhoe shovels, graders, hopper truck and bulldozer. The material to be used in the pretiles will be borrowed. The material of the excavations of the reservoir sector can be used for the construction of the parapets. 3. Channel Construction The plateau Sector considers the construction of the following channels: • Basin Connection Channel • Drain Channel • Approach Channel To carry out the materialization of this work will be used machinery of the type backhoes and the respective trucks that move the material removed to the areas of collection considered, in case of presence of rock and if necessary they will be used Explosives. For the approximation channels it is considered to make fillings to proceed with the civil works. **intake and discharge of the reservoir** The construction of this work will use the machinery of the type backhoes and trucks that move the material removed to the areas of the billets considered for this work or they can be used for the pretile of the reservoir. In case of presence of rock, and if necessary, explosives will be used. **Portals Reservoir** The portals will have the same construction characteristics, this means that they will be concrete, they will be used mixer trucks, metal and/or wood moulds and enfierradura. **Panel of Control and Communication Reservoir** The Panel Control and Communication reservoir will be of modular type with status indicators of the operating parameters to be monitored. It will be installed on the ground and will have an external protection to avoid damage by exposure to the sun, wind, dust or other environmental factor, as well as a perimeter closure to protect the equipment. **Power lines** It is considered the assembly of the metal structures, which will be made by mobile working fronts. In general, the foundations of the structures will be of reinforced concrete.		

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	Construction of roads, improvements, splices and By-Pass The plateau Sector is considered to be the construction of the following roads, improvements, splices and by-pass: • Road of service to the Portal Superior tunnel • Way of service to the chimney of equilibrium • North Sector Splice West Reservoir • Service path to the reservoir area • North Access Road • Improvement Route A-750 • By-Pass Route A-750 – Reservoir • Roads to work fronts • Roads from reservoir works to billets • Access road and Maintenance LMT • LAT Maintenance Road The main activities will consist of Earth movements and compaction Applying Bischofita u Other similar material or humidification, where appropriate. Finally, the corresponding signage will be installed according to the current regulation. **Collection areas** The excavation material collection sector will receive the material transported in hopper trucks that will transport it from the points of excavation to the billets. The dumps will be moistened periodically. They are considered to be built in terraces of 5 m height and each step of 2 m with a inclination of 5:1. (H: V). **Powder keg** For the construction of the magazine is considered the leveling of the terrain, excavation, filling, construction of foundations and radier to then implement a perimeter closure. The waste generated will be arranged according to the current regulations. **Slaughter Installation** The construction of the slaughter facilities will be carried out On wooden foundations (support cleats) or concrete and will mount the infrastructure consisting mainly of adapted containers. materials, equipment and structures will be transported by truck. Some works will require the use of cranes and heavy equipment.		
Construction activities: Pampa Sector	**High voltage power line (LAT)** It is considered the assembly of the metal structures, which will be made by mobile working fronts. In general, the foundations of the structures will be of reinforced concrete. In cases where it is not possible to use concrete foundations, as is the case of the firm rock, special foundations are used. • Concrete Foundations: ESte type of foundation is generally used in angle and mooring towers and for all special	Construction	1.5.5.

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	structures that require great resistance. • Rock Anchor: En cases that the tower is located in places where there is firm rock, it is possible to use the same rock for the anchorage of the tower. For the implementation of LAT, will be counted on mobile fronts, which contemplate the use of Graders, to match the terrain, and trucks pens to carry out the transfer of containers that will be used as office, restrooms and containers for the storage of hazardous waste. **Service path high voltage electric transmission line** The main activities will consist of Earth movements and compaction Applying Bischofita u Other similar material or humidification, where appropriate. Finally, the corresponding signage will be installed according to the current regulation. **Mobile Fronts working** For the installation of the mobile fronts will be used graders, when it is necessary to match the ground and trucks pens to carry out the transfer of the containers that will be used as office, the Baths and the containers for the storage of Hazardous waste.		
equipment, machinery, supplies and services in construction phase	1. Electric Power: It is considered the utilization of the existing distribution line in the zone that is parallel to the route CH-1. As a backup, it is considered a generator for the operations facilities and ventilation equipment of the 100 KVA tunnels. 2. Drinking water: In the camp area drinking water will come from the desalination plant. While not operating, the supply will be contracted with authorized suppliers (drums). The potable water system will have a capacity to supply a maximum endowment of 750 people, with autonomy of one day, these demands have been estimated considering a consumption rate of 150 L/person/day. To satisfy this demand, two metal ponds of 50 and 75 m³ of dimensions 4 x 4 and 5.5 x 4 (D x H) respectively, located adjacent to the Caleta San Marcos, the first, and in the camp, the second, have been estimated. On the other hand, in all the temporary installations and working fronts, drinking water for human consumption will be provided through sealed drums, labelled and with a key system for normal use, which will be acquired from different companies authorized by the Health and that have the current authorization resolution. 3. Industrial water: It is considered to reuse the treated water from the wastewater treatment plant, which will treat the effluents of the home water (10 m3/day), complying with the irrigation regulations NCh 1.333/87 and shall be stored in a pond of 40 m3. The Endowment is estimated: 4. 1.2 million l/day (all fronts, when not operating RBM) 5. 2.4 million L/day (all fronts, when operating RBM). 6. Hygienic Services: Hygienic Services will be installed in a quantity proportional to the number of workers per turn, the waste generated will be withdrawn by authorized companies according to article 23 and 24 of the DS N ° 594 that the owner of the project shall hire. 7. Fuel: An endowment of 5,500 L/day has been estimated, which corresponds to the period of greatest demand,	Construction	1.5.9.

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	considering an autonomy of 2 days. The fuel will be purchased from authorized third parties who will ship it in trucks to the site of the works, where it is stored in a total of 6 metal ponds of 25 m³. 8. Food: It is considered to enable casinos in the camp to serve all the workers in the system and the implementation of canteens in the slaughter facilities. The food shall be provided by the company administering the casino or by an external service authorized by the health authority. 9. Accommodation: For the accommodation the staff will have the facilities of the project camp which has a maximum capacity for 500 people. 10. Transport of personnel: The daily transport of the personnel to the working fronts and installation of slaughter will be carried out by means of buses, minibuses and vans whose frequency of travel will be associated to the beginning and end of each working day. 11. Equipment and Machinery: The use of 28 types of machinery is considered throughout the construction phase. Those which reach approximately 210 units, with hopper trucks and scoops reaching the highest quantities, with 32 and 24 units, respectively. 12. Work fronts: The project considers mobile working fronts for the construction of surface works, underground and for the construction of LAT, which will have offices, sufficient chemical baths and site for the storage of waste, Which will be periodically removed and transferred to the waste yards considered in the slaughter facilities. By the way of construction is considered more than a working front in parallel form for the same sector. 13. Explosives: Explosives shall be used, after corresponding sectoral authorisation, for the execution of excavation of underground works and for the removal of rocky substrates in duly justified cases technically in areas of difficult access to Machinery. It will preferably be opted for the use of stable explosives such as Anfos or others, which will be handled by highly trained personnel and their registers of calculista programmer and/or explosives manipulator (as applicable) to the day emitted by the DGMN (Directorate-General of National mobilization), situation thatIt must be verified prior to the calculation, placement and thundering respectively. Approximately 485,000 kg of explosives are considered to perform the blasting of underground works. For the case of the emulsion is considered 2.2 kg/m3, to excavate 173,220 m3 of rock, therefore it is considered approximately 382,000 kg of explosive. 14. Concrete: It is considered for underground works and its accesses a total of 32,000 m3 of projected concrete of support, cladding and pavements. In the case of the Cave of machines, 4400 m3 of concrete are estimated. In the case of asphalts, 1,000 m3 of asphalt are considered. 15. Arids: The use of aggregates is contemplated for the preparation of concretes and structural fillings, which will be acquired by means of suppliers close to the project that have the sectorial and environmental permits to carry out these tasks and will be collected Temporarily on each working front for later use. It is estimated that a total of 16,000 m3 of gravel will be required plus 11,000 m3 of sand in the coastal zone and 19,000 m3 of gravel plus 13,000 m3 of sand in the zone of reservoir, reaching a total of 59,000 m3 of aggregates. It is worth mentioning that a large part is expected to be		

<table>
<tr><th>Works or actions</th><th>form, place and opportunity of execution</th><th>Stage of execution</th><th>Numeral</th></tr>
<tr><td></td><td>re- Of the material removed by surface and underground works.
16. Transport of supplies, inputs and equipment: it will be carried out through existing public roads, existing footprints and paths and traces of access by enabling (approach footprint), used for these effects mostly vans and ¾ trucks.
17. Chemical inputs: The use of diluents, degreasing agents, oils and fats, hydraulic oils, Antisol, release and paint is contemplated.</td><td></td><td></td></tr>
<tr><td>Location and amount of renewable natural resources to be extracted</td><td>The project requires seawater, although in low quantities (in the order of 10 L/s to deliver 5 L/s of potable water) at this stage for the supply of potable water through the desalination plant. However, it does not consider exploiting or extracting other types of renewable natural resources at the construction stage.</td><td>Construction</td><td>1.5.10.</td></tr>
<tr><td>Construction phase Emissions</td><td><u>Atmospheric emissions</u>
In this phase, emissions of particulate matter and gases from the combustion of engines of machinery and equipment would be recorded. Particulate matter emissions are mainly due to land movements and activities related to construction of works and roads.
The emissions are distributed as follows:
Total emissions phase of construction.
<table>
<tr><th>Actividad</th><th>MP10 (ton)</th><th>MP2.5 (ton)</th><th>CO (ton)</th><th>NOX (ton)</th><th>SO2 (ton)</th><th>HC (ton)</th></tr>
<tr><td>Movimiento de Tierra</td><td>103,40</td><td>22,49</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Tránsito Vehicular</td><td>2866,37</td><td>304,44</td><td>166,11</td><td>630,89</td><td>-</td><td>36,60</td></tr>
<tr><td>Combustión Maquinaria</td><td>153,45</td><td>153,45</td><td>515,02</td><td>1900,22</td><td>0,00</td><td>199,45</td></tr>
<tr><td>Generadores Respaldo</td><td>19,81</td><td>19,81</td><td>60,02</td><td>277,94</td><td>18,48</td><td>-</td></tr>
<tr><td>LTE</td><td>0,09</td><td>0,01</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Total</td><td>3143,13</td><td>500,20</td><td>741,15</td><td>2809,06</td><td>18,48</td><td>236,06</td></tr>
</table>
Source: Own Elaboration.

<u>Noise</u>
CIn order to reduce the acoustic impact generated, apply's A simultaneous restriction of operation to the machinery involved in the working fronts associated with the construction of access roads, ie, can operate one machine at a time, either the bulldozer, Camón Hopper, grader or backhoe. Together, a modular acoustic barrier of at least 3.6 m high and a length of 10 m must be implemented to the machinery which is performing work in the vicinity of points 6, 7 and 8 (Dry river).
Considering the application of these control measures, it was verified by modelling Meeting the Levels Established by The</td><td>Construction</td><td>1.5.11.</td></tr>
</table>

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	MMA DS 38/11. In relation to the evaluation of the noise generated by blasting, it was determined that the levels are below the limits recommended by the Regulation *American Measurement Procedures For The Enforcement, Chapter I: Illinois Pollution Control Board, Part 910, Title 35: Environmental Protection, Subtitle H: Noise Of 35 Ill. Adm. Code 900 & 901* At all assessment points considered. Finally, noise levels generated by vehicular traffic were assessed on the basis of the rules of the Swiss Confederation OPB N º 814.14, determining that for the stage operation will not exceed the maximum proposed. **Vibration** During the construction phase there will be vibrations inherent to this activity. The activities that could possibly be perceived are those related to the beginning of the underground works. However, these are sporadic and are not considered significant.		
Construction phase Waste	**Household liquid Waste** They will come from the wastewater treatment plants implemented, which are designed for a peak of 500 people, with a staff of 150 L/person day. Sanitary effluents shall be treated in such a way that they comply with the quality of NCh 1,333 of. 1978 and stored in a pond to be used in road humidification. Semiannually, a report will be sent to monitor effluents from the treatment plants to health care and be from the Tarapacá region. In mobile working fronts, intermediate wineries and work facilities for the construction of power lines and roads, chemical baths will be available, which will comply with those indicated by the DS 594/1999 and have periodic maintenance, by an external company, duly authorized. **Industrial liquid Waste** The industrial liquid waste to be generated during the construction phase corresponds to the washing water of the canoes of the truck mixer and other construction equipment (20 m3/month). As previously indicated, once they dry they will be removed by a company authorized for transportation and disposal. **Domestic solid waste** SAnd estimates a generation of waste from 500 KG a day. On the other hand, the sludge generated from the wastewater treatment Plant (PTAS), considering a maximum endowment of 500 Workers and a generation rate of 0.88 kg of sludge per m3 of treated water, an estimated generation of 1,980 KG sludge/month from PTAS. These will be stored In the slaughter facilities and from there they will be transferred to authorized places for their final disposition. The waste generated on the work fronts will be collected in garbage bags preferably "biodegradable" or in closed containers, and then transported from their origin to the places of collection in the facilities of Tasks. **Non-hazardous industrial solid waste** Non-hazardous industrial waste (wood pick-up, reels, irons, cables, etc.), due to its characteristics, will be stored neatly in the	Construction	1.5.12.

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	yard for the collection of non-hazardous waste until it is sent to final destination, which depends on its potential Recycling. Although its volume will be variable and depend on the contractor's procedures, it is estimated that its generation would reach the 9,2 ton/month. **Hazardous Industrial Solid Waste** The hazardous industrial waste generated by the project will correspond to oils, lubricants, greases, batteries, empty paint drums, printer toner, brushes, batteries, oil filters, contaminated gloves, etc. The storage of these will be carried out in places specially conditioned for them, giving fulfillment to the DS N º 148/2003 of the Ministry of Health. The frequency of removal of hazardous wastes will depend on the amount generated and the issuance of the permits necessary to remove the waste to its final destination. Hazardous waste will be finally arranged by an authorized company to whom the transfer service and final disposition will be hired. In order to maintain control over the transport and disposal of hazardous waste, a chain of custody shall be implemented, requiring proof of disposal of waste in authorized facilities. Estimated to be generated approximately 0.95 ton/month of this type of waste.		
Operation phase	The main activities associated with the project operation correspond to: 1. Hiring of Manpower 2. Phase Construction Schedule 3. Power generation 4. Filling the reservoir 5. Underground Sector 6. Sector Costa 7. Plateau Sector 8. Pampa Sector 9. Maintenance and conservation activities 10. INsumos and services in Operation 11. Products generated 12. Location and amount of renewable natural resources to be extracted 13. Atmospheric emissions 14. Waste generated	Operation	1.6
Hiring workforce	On average, the workers considered for this phase will be 30, divided into three shifts of work. Eventually, and for the preventive maintenance of the plant the maximum of workers will be of 50 people.	Operation	1.6.9
Schedule phase of	The start of the project operation is consideredor by December 2018, After the operation tests, when you start using the	Operation	1.6.7

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
Operation	north-west Reservoir. The lifespan of the project is indefinite.		1.6.8
Power generation	The project will capture seawater during the day through a work of underwater capture, this work is connected to the lower tunnel where the water will be led to the cave of machines. In the cavern of machines will be found the equipment of pump-generation, with their respective transformers and valves of passage, are 3 units of type Francis each with capacity of 100 MW of power, both in pumping mode as generation. Then the water will be pumped through the pressure snap to the upper tunnel, the water will reach the reservoir by the final work of the upper tunnel called the approach channel. Later, during the night, the water accumulated in the reservoir will be returned to the sea, by gravity, using the same works and equipment that were used for the capture and pumping, at this stage the water when passing through the pump-generation equipment makes these Teams now act like turbines, generating energy. This cycle will be daily, being able to the central in exceptional cases, to operate 24 hours continuous or even for 9 days in generation mode. The work for the capture and restitution of seawater is the same. The energy required for the pumping of water will come from a photovoltaic park, as indicated in the section 1.2.4.2 ("Indication of the development of the project by stages") of this chapter. The development of this stage, to this date, is uncertain and is conditional on the economic characteristics of the electricity market to indicate its viability, as explained therein. The generated energy will be transmitted by a high voltage line that is born in the underground substation (GIS) Espejo de Tarapacá and ends in the substation Lagunas (existing), which will connect to SING. The operation scheme on typical summer and winter days, estimates that it will be pumpedN 45 m3/s, and to be used in a flow rate of 28 m3/s to generate. This means that the generation in normal operation corresponds to a power of 150 MW. The maximum generation capacity Hydroelectric Reached 300 MW.	Operation	1.6.1
Filling the reservoir	The filling is done gradually to reach the height 608.5 m. The filling of the north-west reservoir is estimated to take 6 days to the altitude 600 M.A.S.L. Operation tests will then be performed for 40 days. Having fulfilled the test stage the filling of the West Reservoir will last 60 days reaching the altitude 608.5 M.A.S.L. On the other hand, the filling of the East Reservoir, up to the altitude 602 M.A.S.L., will take 45 days. Finally the filling of the entire reservoir up to the height 608.5 M.A.S.L. will require at least 60 days more.	Operation	1.6.2
Underground Sector	The underground works will have a first inspection after one year of operation, an opportunity for the tunnel system to be emptied. In case of no faults, the inspections will be carried out periodically every 5 years, finally, after the year 15, implement them every 10 years. In case of operating problems, The following inspection after the adjustments will be made at 1 year.	Operation	1.6.3

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	For its part, the maintenance of the equipment of generation of the three units will be made in turn for each unit, with a scheduled unavailability of 15 days per year for each one of them. The maintenance will be in charge of professionals specially qualified for this purpose.		
Sector Costa	The control and monitoring of the plant will be carried out from the controlling building. The potable water supply and the wastewater treatment system will be the same as for the construction phase.	Operation	1.6.4
Plateau Sector	The reservoir will be filled through the underground tunnels through which the water circulates from the sea, with the upper tunnel being the work by which the seawater arrives at the reservoir. Operation parameters of the reservoir will be monitored. The control Panel located in this sector will be able to monitor the central and the reservoir.	Operation	1.6.5
Pampa Sector	**High Voltage electric transmission line (LAT)** For the operation of the LAT, 4 types of maintenance are envisaged: 1. Basic Preventive Maintenance: it considers routes with 2 or 3 people, once or twice a year, visual inspection of drivers, structures and components of suspension and anchorage. 2. Programmed Corrective Maintenance: It is based on anomalies detected in the pedestrian inspection. There is use of minor mechanical equipment and a small group of people called Brigades (4 or 5 people per work area) who work mainly in height (structures), without affecting the terrain where the line is installed. 3. Maintenance against failure: it corresponds to the repair of the installations, after failures that compromise the transmission of energy. Its wingspan depends on the anomalies produced. 4. Maintenance of the bonding strip: at least once a year the friction of the bonding band must be carried out by pruning all the resprouted trees which do not comply with the electrical distance from the conductors established in the standard. Since there are no trees in the area that are very large, this activity is not planned.	Operation	1.6.6
ActivityIt is of maintenance and conservation	The maintenances, which will be carried out periodically, will be carried out by qualified personnel for the activities. The maintenance can be in charge of a contractor company, where it can be more than one the company that performs these functions depending on its specializations.	Operation	1.6.10
Supplies and services	1. RWater resources: The main input will be seawater for energy generation purposes. 2. Power supply: Installations for operation of the plant will have direct power from the Project facilities. 3. Fuel: For this phase it is envisaged the habilitation of a pond for the storage of fuels in the installations of the project for the diesel engine of starting in black in cases of emergency in the SING. 4. Drinking water: During this phase water consumption considers drinking water for workers in the administration and Control building, as well as the supply of water for restrooms and services. This resource will be obtained from the potable water supply system of the project, which includes the desalination plant.	Operation	1.6.11

<table>
<tr><th>Works or actions</th><th>form, place and opportunity of execution</th><th>Stage of execution</th><th>Numeral</th></tr>
<tr><td></td><td>5. Transport: During the operation phase, vans and minibuses will be available for transport of personnel and only in cases of maintenance will be used a truck for the transport of parts or instrumental.</td><td></td><td></td></tr>
<tr><td>Products generated</td><td>The project corresponds to a productive activity of electric energy that will produce 1.75 GWh/day average annual.</td><td>Operation</td><td>1.6.12</td></tr>
<tr><td>Location and amount of renewable natural resources to be extracted</td><td>The project for the operation of the hydro-electric pumping plant, will require a maximum adduction of 45 m3/s of seawater (8 hours per day on average), which will be pumped only during the hours of the day, then be restored to the sea. It should be remembered that the pumped water will be restored to the sea when the project operates in generation mode, at a rate of 28 m3/s.
Likewise, during the operation phase it will be required of seawater, to obtain potable water MediBefore a desalination plant, which It will operate by consuming approximately 5 L/s of seawater, and generating 2.75 l/s of desalinated water.</td><td>Operation</td><td>1.6.13</td></tr>
<tr><td>Atmospheric emissions</td><td><u>Atmospheric emissions</u>
The project does not consider significant emissions in the operation phase, Because the only emissions generated correspond to Those products of the maintenance and repair work of the plant, corresponding to Isolated jobs, low frequency and generally require a small amount of staff. Likewise, lAs related transport activitiesS With the project no geneRaRán significant estimates.

Total emissions phase of operation.
<table>
<tr><th>Actividad</th><th>MP10 (ton)</th><th>MP2.5 (ton)</th><th>CO (ton)</th><th>NOX (ton)</th><th>SO2 (ton)</th><th>HC (ton)</th></tr>
<tr><td>Tránsito Vehicular</td><td>11,49</td><td>2,21</td><td>0,04</td><td>2,81</td><td>-</td><td>0,02</td></tr>
<tr><td>Generador partidas en negro</td><td>6,26</td><td>6,07</td><td>49,10</td><td>214,62</td><td>0,36</td><td>-</td></tr>
<tr><td>Total</td><td>17,75</td><td>8,28</td><td>49,13</td><td>217,43</td><td>0,36</td><td>0,02</td></tr>
</table>
Source: Own Elaboration.

<u>Noise</u>
They are not identified during the operation phase, impact-generating activities on these environmental components, except for the uninterrupted operation of the machine cave equipment. Also, the results of the studies carried out (see Chapter 4 of this EIA) indicate that the Phase of operation, will meet the maximum levels allowed in the receivers closest to the project without the need to implement noise control measures.
<u>Vibrations</u>
Vibrations are not envisaged during the operation phase.</td><td>Operation</td><td>1.6.14</td></tr>
</table>

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	Electromagnetic field In order to determine their magnitude, measurements were carried out in the sensitive sectors, Caleta San Marcos and Río Seco (see annex 1-6). The conclusion of this study Determined What Even though The 23 KV line generates interference due to the corona phenomenon, These are Of a much lower intensity than the limit set by international regulation, so that it does not generally represent a problem for communications.		
Waste generated	**Liquid waste** The liquid waste during the operation phase corresponds to the wastewater generated in the Control building and will be treated in the PTAS will be withdrawn by an authorized third party. It is considered a drinking water consumption rate of 150 L/person/day, with 30 days worked per month, whose residual rate is given by 100% of the water consumed. With a peak of 50 workers. In addition it is considered as waste the brine rejection of the desalination plant, which in its maximum operating capacity, generates 18,000 m3/month. This brine will be ready to sea through the work of taking and unloading. **Solid waste Domestic** During the operation phase, domestic solid waste will be generated, which will be removed by a specialized company authorized to perform these tasks, at least once a week to be arranged in an approved site for this. The generation of these wastes will be directly proportional to the amount of labour, that is to say, considering a maximum endowment of 50 people and a generation of 1 kg per person a day, a generation of waste of 50 kg is estimated daily. On the other hand, the sludge generated from the wastewater treatment Plant (PTAS), considering a maximum endowment of 50 workers and a generation rate of 0.88 kg sludge per m3 of treated water, is estimated a generation of 198 kg sludge/month from PTAs. These will be periodically withdrawn by an authorized company. **Non-hazardous industrial solid waste** Non-hazardous industrial waste in the operating phase shall correspond to waste generated from maintenance activities, such as iron, wood residues, cables, etc. Considering the magnitude of the activities, it is feasible to anticipate A generation of 200 kg/month. Such waste They will be segregated at the origin and sent to the yard of non-hazardous waste for storage, favoring the recycling of these and that fraction not feasible to recycle will be sent to final disposition to site authorized by authorized company, with a Frequency once a month. **Hazardous Solid waste** The types of hazardous solid waste expected to be generated correspond to used oils and lubricants, oiled rags, used fluorescent tubes, etc. A generation of 200 kg/month is estimated. These wastes will be segregated at the origin and sent to be temporarily stored in the warehouse of hazardous waste, being finally arranged by an authorized company to whom the transfer service and final disposition will be contracted, with a Withdrawal frequency that will not exceed 6 months.	Operation	1.6.15
Closing phase	Although the useful life of the project is considered as indefinite, for which different maintenance and repair activities have	Closing	1.7

Works or actions	form, place and opportunity of execution	Stage of execution	Numeral
	been envisaged, for the purposes of the environmental evaluation, the following main activities are considered associated to the closure of the Project: 1. Dismantle Project Infrastructure 2. Land restoration 3. Emissions prevention 4. Maintenance, conservation and necessary supervision 5. Other activities		
DismantlingAR Project Infrastructure	The installations of the project and the temporary installations required for closure will be dismantled, the affected areas will be cleaned directly and surrounding areas, returned the intervening areas as close as possible to the original condition.. Containers will be removed and workshops, salvage yards, warehouses, etc. will be dismantled. All waste materials will be removed from the construction phase to be transported and placed in authorized locations of the communes closest to these installations. In addition, the equipment and machinery used in the work will be removed.	Closing	1.7.1.1.
Land restoration	Once the facilities have been removed, activities will be performed to restore the original surface. These activities involve the removal or coating of concrete structures, as foundations of temporary constructions. Thorough cleaning of the entire layout of the works will be carried out, verifying that in the work areas there are no traces of any kind of residue.	Closing	1.7.1.2.
Emissions prevention	During the closing work, machinery and vehicles will be used with maintenance and revisions per day, as well as moistening roads that will eventually be used and that is necessary by the conditions of the terrain.	Closing	1.7.1.3.
Maintenance, conservation and necessary supervision	Since there are no closing measures requiring post-closing monitoring (since there are no environmental components that may be affected), there will be no maintenance, conservation and/or supervision activities.	Closing	1.7.1.4.
Other activities	Whereas the project includes other facilities of the activity, such as tunnels UndergroundSDuring the closing phase, other activities will be carried out in addition to those already indicated in the previous headings. With respect to the upper tunnel closure, the only identified risk is associated with the uncontrolled influx of people into the tunnels. Therefore, during the closing phase, the entrances of the tunnels will be closed, by means of a grating, mesh or gate, with the appropriate signalling, in such a way to prevent the access. In the case of the reservoir it will be indicated by means of signage the danger that can mean to cross the limits of the contour profiles.	Closing	1.7.1.5.

Source: Self-elaboration

16.1.2. Prediction and Evaluation of the Environmental Impact of the Proejct or activities

Table 2. Chapter Prediction and EValuation of the Impact ToMbiental of the Proejct or ToCtividad, ELid CConstruction.

Middle	Environmental component	Environmental facts	Impact	Sectors	Environmental impact Value	Importance of impact	Numeral
Physical	Atmosphere	Air quality	Increased emissions of particulate matter and gases	Costa and Pampa	-32	Little significant	4.6 4.7.1.1 (Table 4-14)
		Noise	Increased noise level	Costa and Pampa	-36	Little significant	4.6 4.7.1.2 (Table 4-16)
		Geomorphology	Modification of the topography	Coast and Plateau	-24	Little significant	4.6 4.7.1.4 (Table 4-20)
	Marine Hydrosphere	Chemical Oceanography Water Quality	Alteration of the quality of the sea waters	Submarine	-24	Little significant	4.6 4.7.1.5 (Table 4-22)
		Chemical Oceanography Marine Sediments	Alteration of the physico-chemical properties of sediments	Submarine	-8.4	Non-significant	4.6 4.7.1.6 (Table 4-24)
Ecosystems Terrestrial	Soils	Non-Arable land use capacity	Soil compaction degradation	Coast, Plateau and Pampa	-5	Non-significant	4.6 4.7.2.1 (Table 4-28)
			Irreversible soil loss	Coast, Plateau and Pampa	-8	Non-significant	4.6 4.7.2.1 (Table 4-26)
	Fauna	Sites of interest to the Fauna	Affectation of nesting area of *Oceanodroma Markhami*	Plateau and Coast	-72	Significant	4.6 4.7.2.2 (Table 4-31)
		Species of fauna in conservation category	Loss of specimens from the reptile group	Pampa and Plateau Coast	-45 -22	Significant Little significant	4.6 4.7.2.2 (Table 4-33)
		Species of fauna in conservation category	Loss of specimens from the birds group	Plateau and Coast	-18	Non-significant	4.6 4.7.2.2 (Table 4-35)
Marine	Biological	intertidal Epibiota of	Alteration of hard-	Submarine	-28	Little significant	4.6

Middle	Environmental component	Environmental facts	Impact	Sectors	Environmental impact Value	Importance of impact	Numeral
ecosystems	oceanography	hard backgrounds	bottomed marine intertidal communities				4.7.2.3 (table 4-37)
		intertidal soft-bottomed Polybentos	Alteration of soft-bottom marine intertidal communities	Submarine	-18	Non-significant	4.6 4.7.2.3 (table 4-39)
		Epibiota of subtidal background	Alteration of subtidal marine hard-fund communities	Submarine	-32	Little significant	4.6 4.7.2.3 (Table 4-41
		Ichthyofauna	Loss of individuals	Submarine	-10	Non-significant	4.6 4.7.2.3 (table 4-43)
		Subtidal Sedimentary-fund fauna	Affecting subtidal, soft-bottomed biological communities	Submarine	-16	Non-significant	4.6 4.7.2.3 (table 4-45)
		Coastal vertebrates	Affectation of species in conservation category (mammals)	Submarine	-18	Non-significant	4.6 4.7.2.3 (table 4-49)
Cultural Heritage	Archaeology	Archaeological heritage	Archaeological sites Intervention	Coast and Plateau	-48	Significant	4.6 4.7.3.1 (Table 4-51)
	Paleontology	Paleontological Heritage	Partial intervention of the fossil levels.	Coast, Pampa and Plateau	-57.6	Significant	4.6 4.7.3.2 (Table 4-53)
Landscape	Landscape	Coastal Edge Unit	Visual incompatibility and loss of biophysical attributes	Coast-Coastal border	-33.6	Little Significant	4.6 4.7.3.2 (Table 4-55)
		Coastal Cliff Unit	Visual incompatibility and loss of biophysical attributes	Coast – Coastal Cliff	-39.2	Little significant	4.6 4.7.3.2 (table 4-55)
		Cordillera de la Costa unit	Visual incompatibility and loss of biophysical attributes	Plateau – Cordillera de la Costa unit	-22.4	Little significant	4.6 4.7.3.2 (table 4-55)

Middle	Environmental component	Environmental facts	Impact	Sectors	Environmental impact Value	Importance of impact	Numeral
		Mountain Cord Unit	Visual incompatibility and loss of biophysical attributes	Pampa – Mountain Cord unit	-19.2	Non-significant	4.6 4.7.3.2 (Table 4-55)
		Unit Pampa del Tamarugal	Visual incompatibility and loss of biophysical attributes	Pampa – Unit Pampa del Tamarugal	-288	Little significant	4.6 4.7.3.2 (Table 4-55)
Areas Protected	Areas Protected	National Reserve Pampa del Tamarugal	Intervention in Area Protected	Pampa	-20	Non-significant	4.6 4.7.5.1 (Table 4-57)
Natural or cultural attractions	Tourism	Tourist attractions	Alteration of tourist attractions	Coast	-32	Little significant	4.6 4.7.5.2 (table 4-59)
Human	Geographic dimension	Geographic environment with social uses	Alteration of the geographical environment with social uses	Coast: San Marcos Coast: Rio Seco	-29 -25	Little significant Little significant	4.6 4.7.6.1 (table 4-63)
		Displacement dynamics within the Territory	Alteration of the connectivity flows of human groups within and outside the Territory	Pampa and Plateau Coast: San Marcos Coast: Rio Seco	-24 -21 -25	Little significant Little significant Little significant	4.6 4.7.6.2 (table 4-65)
		Local demographic structure	Alteration of the characteristics of the local demographics of the human group by influx of workers (floating population)	Coast: San Marcos Coast: Rio Seco	-24 -24	Little significant Little significant	4.6 4.7.6.3 (table 4-67)
	Anthropological Dimension	Local identity	Affecting the local culture of the human group	Coast: San Marcos	-34	Little significant	4.6 4.7.6.4 (table 4-69)
		Local Cultural Expressions	Potential impactn local festivities	Pampa and Plateau Coast: San Marcos Coast: Rio Seco	-3.2 -11 -11	Non-significant Non-significant Non-significant	4.6 4.7.6.5 (table 4-71)

Middle	Environmental component	Environmental facts	Impact	Sectors	Environmental impact Value	Importance of impact	Numeral
		Cultural significance sites at the local level	Affecting the sites of cultural significance	Coast: Rio Seco	-38	Little significant	4.6 4.7.6.6 (table 4-73)
	Socio-economic dimension	Local Economic Activities	Impactn local resources and economic activities and their associated dynamics	Coast: San Marcos	-2.7	Non-significant	4.6 4.7.6.7 (table 4-75)
		Economic use of space and natural resources	Potential generation of local employment	Coast: San Marcos	+ 32	Little significant	4.6 4.7.6.7 (table 4-77)
	Basic Social Welfare dimension	Supply and demand for basic services	Affecting basic services present in the area of influence	Coast: San Marcos Coast: Rio Seco	-35 -21	Little significant Little significant	4.6 4.7.6.8 (table 4-79)

Source: Self-elaboration

Table 3: Chapter Prediction and EValuation of the Impact ToMbiental of the Proejct or ToCtividad, ECover of OrPeration

Middle	Environmental component	Environmental facts	Impact	Sectors	Environmental impact Value	Importance of impact	Numeral
Physical	Atmosphere	Air quality	Increased emissions of particulate matter and gases	Costa and Pampa	-2.4	Non-significant	4.6 4.7.1.1 (table 4-14)
		Noise	Increased noise level	Costa and Pampa	-2.7	Non-significant	4.6 4.7.1.2 (table 4-16)
		Electromagnetic fields	Radio interference	Pampa and Plateau	-9	Non-significant	4.6 4.7.1.3 (table 4-18)

Middle	Environmental component	Environmental facts	Impact	Sectors	Environmental impact Value	Importance of impact	Numeral
	Marine Hydrosphere	Chemical Oceanography (water quality)	Alteration of the quality of the sea waters	Submarine	-30.4	Little significant	4.6 4.7.1.5 (Table 4-22)
		Chemical Oceanography (marine sediments)	Alteration of the physical chemical properties of marine sediments	Submarine	-25.2	Little significant	4.6 4.7.1.6 (Table 4-24)
Ecosystems Terrestrial	Fauna	Sites of interest to the Fauna	Affectation of nesting area of *Oceanodroma Markhami*	Plateau and Coast	-27	Little significant	4.6 4.7.2.2 (Table 4-31)
		Species of fauna in conservation category	Loss of specimens from the reptile group	Pampa and Plateau Coast	-22 -11	Little significant Non-significant	4.6 4.7.2.2 (Table 4-33)
		Species of fauna in conservation category	Loss of specimens from the birds group	Plateau and Coast	-11	Non-significant	4.6 4.7.2.2 (Table 4-35)
Marine ecosystems	Biological oceanography	intertidal Epibiota of hard backgrounds	Alteration of hard-bottomed marine intertidal communities	Submarine	-7.2	Non-significant	4.6 4.7.2.3 (table 4-. 37)
		intertidal soft-bottomed Polybentos	Alteration of soft-bottom marine intertidal communities	Submarine	-3	Non-significant	4.6 4.7.2.3 (table 4-39)
		Epibiota of subtidal background	Alteration of subtidal marine hard-fund communities	Submarine	-33	Little significant	4.6 4.7.2.3 (table 4-41)
		Ichthyofauna	Loss of individuals	Submarine	-25	Little significant	4.6 4.7.2.3 (table 4-43)
		Subtidal Sedimentary-fund fauna	Affecting subtidal, soft-bottomed biological communities	Submarine	-24	Little significant	4.6 4.7.2.3 (table 4-45)

Middle	Environmental component	Environmental facts	Impact	Sectors	Environmental impact Value	Importance of impact	Numeral
		Planktonic communities	Planktonic Biomass loss	Submarine	-18.6	Little significant	4.6 4.7.2.3 (table 4-47)
Landscape	Landscape	Coastal Edge Unit	Visual incompatibility and loss of biophysical attributes	Coast-Coastal border	-33.6	Little Significant	4.6 4.7.4 (Table 4-55)
		Coastal Cliff Unit	Visual incompatibility and loss of biophysical attributes	Coast – Coastal Cliff	-39.2	Little significant	4.6 4.7.4 (table 4-55)
		Cordillera de la Costa unit	Visual incompatibility and loss of biophysical attributes	Plateau – Cordillera de la Costa unit	-22.4	Little significant	4.6 4.7.4 (table 4-55)
		Mountain Cord Unit	Visual incompatibility and loss of biophysical attributes	Pampa – Mountain Cord unit	-22.4	Little significant	4.6 4.7.4 (table 4-55)
		Unit Pampa del Tamarugal	Visual incompatibility and loss of biophysical attributes	Pampa – Unit Pampa del Tamarugal	-33, 6	Little significant	4.6 4.7.4 (table 4-55)
Protected areas	Protected areas	Pampa del Tamarugal National Reserve	Intervention in protected Area	Pampa	-24	Little significant	4.6 4.7.5.1 (Table 4-57)
Natural or cultural attractions	Tourism	Tourist attractions	Alteration of tourist attractions	Coast	-28	Little significant	4.6 4.7.5.2 (Table 4-59)
			Generation of tourist attraction	Plateau	+ 24	Little significant	4.6 4.7.5.2 (Table 4-61)
Human	Geographic dimension	Geographic environment with social uses	Alteration of the geographical environment with social uses	Coast: San Marcos Coast: Rio Seco	-21 -25	Little significant Little significant	4.6 4.7.6.1 (table 4-63)
		Displacement dynamics within the	Alteration of the connectivity flows of	Coast: Rio Seco	-21	Little significant	4.6 4.7.6.2 (table 4-65)

Middle	Environmental component	Environmental facts	Impact	Sectors	Environmental impact Value	Importance of impact	Numeral
		Territory	human groups within and outside the territory, both in their daily life and in festivities or rituals				
	Demographic dimension	Local demographic structure	Alteration of the characteristics of the local demographics of the human group by influx of workers (floating population)	Coast: San Marcos Coast: Rio Seco	-18 -21	Non-significant Little significant	4.6 4.7.6.3 (table 4-67)
	Anthropological Dimension	Local identity	Affecting the local culture of the human group	Coast: San Marcos	-28	Little significant	4.6 4.7.6.4 (table 4-69)
	Socio-economic dimension	Local Economic Activities	Impactn local economic activities and their associated dynamics	Coast: San Marcos	-13.5	Non-significant	4.6 4.7.6.7 (table 4-75)
			Potential generation of local employment	Coast: San Marcos	+ 32	Little significant	4.6 4.7.6.7 (table 4-77)
	Basic Social Welfare dimension	Supply and demand for basic services	Affecting basic services present in the area of influence	Coast: San Marcos	+ 70	Significant	4.6 4.7.6.8 (table 4-79)

Source: Self-elaboration

Table 4: Chapter Prediction and EValuation of the Impact ToMbiental of the Proejct or ToCtividad, ELid CLosure

Middle	Environmental component	Environmental facts	Impact	Sectors	Environmental impact Value	Importance of impact	Numeral
Physical	Atmosphere	Air quality	Increased emissions of particulate matter and gases	Costa and Pampa	-32	Little significant	4.6 4.7.1.1 (table 4-14)

Middle	Environmental component	Environmental facts	Impact	Sectors	Environmental impact Value	Importance of impact	Numeral
		Noise	Increased noise level	Costa and Pampa	-36	Little significant	4.6 4.7.1.2 (table 4-16)
Terrestrial ecosystems	Soils	Non-Arable land use capacity	Soil compaction degradation	Coast, Plateau and Pampa	-4	Non-significant	4.6 4.7.2.1 (table 4-28)
	Fauna	Species of fauna in conservation category	Loss of specimens from the reptile group	Pampa and Plateau Coast	-22 -22	Little significant Little significant	4.6 4.7.2.2 (table 4-33)
		Species of fauna in conservation category	Loss of specimens from the birds group	Plateau and Coast	-18	Non-significant	4.6 4.7.2.2 (table 4-35)
Landscape	Landscape	Coastal Edge Unit	Visual incompatibility and loss of biophysical attributes	Coast-Coastal border	+ 288	Little Significant	4.6 4.7.4 (table 4-54)
		Coastal Cliff Unit	Visual incompatibility and loss of biophysical attributes	Coast – Coastal Cliff	+ 33.6	Little Significant	4.6 4.7.4 (table 4-54)
		Cordillera de la Costa unit	Visual incompatibility and loss of biophysical attributes	Plateau – Cordillera de la Costa unit	+ 19.2	Non-significant	
		Mountain Cord Unit	Visual incompatibility and loss of biophysical attributes	Pampa – Mountain Cord unit	+16	Non-significant	4.6 4.7.4 (table 4-54)
		Unit Pampa del Tamarugal	Visual incompatibility and loss of biophysical attributes	Pampa – Unit Pampa del Tamarugal	+24	Little Significant	4.6 4.7.4 (table 4-54)
Protected areas	Protected areas	Pampa del Tamarugal National Reserve	Intervention in protected Area	Pampa	+20	Non-significant	4.6 4.7.5.1 (table 4-56)
Natural or cultural attractions	Tourism	Tourist attractions	Alteration of tourist attractions	Coast	-25	Little significant	4.6 4.7.5.2 (table 4-58)

Source: Self-elaboration

16.1.3. Description Detailed aThose who EFfects CAracterísticas or CIrcunstancias of the ToRtículo 11 of the law that Dan orGovern the Need for EWork on an environmental impact study

Table 5. Chapter Description of ToThose who EFfects CAracterísticas or CIrcunstancias of the ToRtículo 11 of the law that Give rise to the NEcesidad EWork on an environmental impact study

Literal	Description	effect, characteristic or circumstance	Numeral
To	To Exceeding the values of the concentrations and periods established in the primary standards of environmental quality in force or the significant increase or decrease, as appropriate, of the concentration over the limits established therein. In the absence of such standards, those in force in the States referred to in article 11 of D. S No 40/12 shall be used as reference.	The emissions that occur will not be liable to cause non-compliance with quality standards and to generate significant adverse effects on people's health, mainly because the project generates Emissions that are not significant and only Punctually in the Phase of construction, As you can see in Chapter 1 of the EIA. By Therefore, they do not result in an increase in environmental concentrations that may be above the maximum levels established in primary air quality standards. The atmospheric emission during the construction stage is temporary and of low or of little importance, because the holder will implement the mitigation measures indicated in chapter 7 of this EIA in order to minimize the emissions in the case of movements of land, vehicular traffic and work with heavy machinery generated by the project. Emissions into the atmosphere during the operation phase will be marginal, only as a result of vehicular flows, as indicated, these derive from activities strictly linked to the construction phase. During the operation phase there will be a generator in the workshop, which is used in cases of contingency for the occasional start of the pump-generation units	5.4.1.1
To	b Overcoming the noise values established in the current environmental regulations. In the absence of such rules, those in force in the States referred to in article 11 of this Regulation shall be used as reference.	8 points corresponding to sensitive receptors have been identified. In the construction phase and in conformity with the evaluation of the acoustic impact carried out, the project will comply with the provisions of the Supreme Decree No. 38/11, of the Ministry of the Environment, which establishes a standard for the emission of annoying noise generated by sources Fixed. In the operation stage, the noise associated with the project's installations is induced by the corona effect produced in the power line. However, and as shown by the modeling of noise levels that are enclosed in Annex Acoustic impact study of chapter 4, Impact assessment, SE D Compliance in the receivers sensitive to the maximum levels required by the aforementioned emission standard. The	5.4.1.1

Literal	Description	effect, characteristic or circumstance	Numeral
		rest of the works are underground, so they do not produce noise. Taking into consideration the results of the acoustic impact study, the environmental relevance for this environmental factor and the magnitude of the impact; The prediction and evaluation allow the absence of significant adverse effects for the health of the population, generated by the noise in the area of influence of the project.	
To	b Overcoming the noise values established in the current environmental regulations. In the absence of such rules, those in force in the States referred to in article 11 of this Regulation shall be used as reference.	Taking into consideration the results of the acoustic impact study, the environmental relevance for this environmental factor and the magnitude of the impact; The prediction and evaluation allow the absence of significant adverse effects for the health of the population, generated by the noise in the area of influence of the project.	5.4.1.1
To	CExposure to pollutants due to the impactf emissions and effluents on renewable natural resources, including soil, water and air, in the event that it is not possible to assess the health risk of the population according to the preceding letters.	The analysis carried out for literals a) and b of the standard, has made it possible to certify that the project does not envisage atmospheric emissions that constitute a risk for the health of the population, reason why it does not apply this standard of supplementary character. With regard to the emission of effluents in the construction phase, it shall correspond to wastewater generated in the installation of operations and camps, which will be treated in the treatment plants considered by the project. The wastewater treated in the PTAS will comply with the parameters of the NCh 1,333 water quality for irrigation, and therefore be re-used in irrigation and humidification of roads used in the construction and operation phases, and in the Humidifying of Mat's collection sectors. Excavation wasteland and work fronts during the construction phase. Water served D Chemical baths used in fronts of work during the construction of the LTE will be withdrawn by companies that have current sanitary resolution granted by the health Department of the region of Tarapacá and will be arranged in places authorized by that service. Such authorization shall be required by the holder before establishing any contractual relationship of services. In addition, a copy of this will be maintained at the project premises during construction, a copy in force at the disposal of the auditing authority.	5.4.1.1
To	D Exposure to contaminants due to the impactf waste management on renewable natural resources, including soil, water and air.	The project does not contemplate the generation of waste that constitutes a risk to the health of the population, since the collection, transitory storage, transport and final disposition will be carried out in fulfillment of the sanitary norms and authorizations Corresponding. During the construction phase, the solid waste generated by the project is classified into the following categories: Domestic waste (domiciliary type waste), non-hazardous industrial waste (excavation surplus and earth movements, Remains of construction materials) and hazardous industrial waste (paint containers, grease cloths and thinner in low quantities). All waste will be stored temporarily in	5.4.1.1

Literal	Description	effect, characteristic or circumstance	Numeral
		accordance with current regulations. In particular, for non-hazardous waste, this EIA is accompanied by the technical and formal contents for the granting of PAS 140, while for the storage of hazardous waste, the same is done for the granting of PAS 142. The hazardous waste generated during this phase (construction) will be temporarily collected in the warehouses arranged for this purpose. In fact, its storage will be carried out in metal containers located in the covered patio of waste with concrete slab and parapet of safety for containment of spills. The generation of this type of waste is estimated daily and will extend to the entire constructive period. The temporary storage of these wastes will be carried out in compliance with the DS N ° 148/2003, both in terms of labelling and in respect of the maneor safe. The period of storage of hazardous waste may not exceed 6 months. However, and as stated above, the warehouses of hazardous waste are the subject of the presentation of the mixed sectoral environmental permit contained in article 142 of D. S N º 40/2012 MMA, and its sectoral authorization will be processed before the health of the region of Tarapacá. In the operation of the project, smaller quantities of domestic waste and hazardous waste will be generated. The latter is considered to be the generation of used oil and lubricant. Both will be temporarily stored in the warehouse of hazardous waste and inside it, in sectors specially equipped for spill containment. All waste will be stored and managed in accordance with current regulations being periodically withdrawn by a Authorized company. No storage will be maintained for a period not longer than 6 months, thus complying with the requirements of the D. S 148/03. The transport and final disposition will be carried out by companies that have a valid health authorization granted by the health service of the Tarapacá region., in accordance with D.F. L N º 1/1989 (matters requiring express health authorization). The holder shall make a Track waste to your destination.	
To	D Exposure to contaminants due to the impactf waste management on renewable natural resources, including soil, water and air.	With regard to hazardous waste, during the operation phase only its generation is foreseen eventually (oils, lubricants, fluorescent tubes), being managed in specially conditioned areas that will have a paved surface, Parapet of containment, roof and perimeter fence. The storage of used oil will be carried out in metallic drums according to the current regulations. The storage of these wastes will only be temporary and not for more than two months. The final destination of hazardous waste shall be managed by authorized companies and their final dispositionwill be at sites authorized by the health care of the region of Tarapacá	5.4.1.1

Literal	Description	effect, characteristic or circumstance	Numeral
To	**Conclusion**	**The project does not require entry into the SEIA through an EIA, pursuant to article 11 (a) of the LBGMA in relation to article 5 of the SEIA regulation, since it does not generate or present effects, characteristics or circumstances involving risks PA The health of the population, due to the quantity and quality of the emissions, effluents and waste that it generates or stores temporarily.**	5.4.1.1
b	A. The loss of soil or its capacity to sustain biodiversity by degradation, erosion, waterproofing, compaction or presence of contaminants.	The soils identified showed a development of NULL to scarce, with predominance of coarse materials, textures sandy and without presence of roots, of high erosion, many with presence of pavement of desert; Thin in depth; With the presence of sediment layers, high in gravel and stones and excessive drainage, determining a classification capacity of use VIII, for all the units identified, as described in Chapter 3 "Baseline", section 3.3.1 The project will not result in soil loss or soil contamination degradation, according to the account in Chapter 4. For this purpose, both in the construction and operating phases, it is considered to enable areas prepared for the storage of waste, with containment constraints before the eventuality of spills, as described in Chapter 1 on project Description, Section 1.5.3.1 numeral IV. With respect to the areas to intervene with temporary works during the construction stage, the reconditioning of the soil is raised in the sectors used, restoring the original topographical characteristics prior to the intervention to the extent that Possible. In the case of the construction of towers and access roads, only in those towers that are installed in slope of slopes of hill and that can be affected by erosion, gavionadas structures will be installed for the stabilization of the terrain around them. In the operating phase the soil surfaces to be affected correspond to those of the reservoir, towers and access roads to be built. Regarding these areas, it is worth mentioning that the project is located on soil with category VIII (Section 3.3.1 Chapter 3 "Baseline"), so no erosion is foreseen and less loss of fertile soil, given its conditions of high erosion, thin in Profundiand high in gravels and stones. With regard to soil capacity to sustain the biodiversity of the area where the works and parts of the project are located, the characteristics and results of the baseline realize that the soil in the site area has a very low biodiversity (see Baseline Chapter 3), so the project will not affect the object of protection of the standard, namely the capacity of the soil to host biological diversity in the area of influence and its capacity for regeneration. Finally, the project considers waterproofing 375 hectares in the area corresponding to the reservoir through a bituminous membrane. Its characteristics (contained in the description of the project and illustrated in this chapter in Figures 1-25 and 1-26) allow a greater support and resistance allowing the	5.4.1.2

Literal	Description	effect, characteristic or circumstance	Numeral
		transit of people and passage of light vehicles over it. In this regard, it should be noted that the membrane has certification of safety for the storage of potable water. Its installation will be done in stages, starting with The West reservoir in the northern sector, following the southern sector and ending at the eastern Reservoir. Both the preparation process and the membrane installation will be permanently verified and monitored in the field By specialists in the field.	
b	A. The loss of soil or its capacity to sustain biodiversity by degradation, erosion, waterproofing, compaction or presence of contaminants.	Therefore, and taking into consideration the category of the soil (class VIII) and its existing conditions (as indicated in chap. 3, point 3.3.1); namely, coarse materials, sandy textures without the presence of roots, high erosion, as well as gravels and stones in all its units; The waterproofing does not cause loss of soil since this soil does not present capacity to support the biodiversity when this does not present the conditions for its generation and/or conservation. In fact, not only does it not produce soil loss, but the waterproofing method described inCap. 1 1.4.4.1 point, avoids mass movement (landslides) of soil such as crawling, solifluction and debris flow.	5.4.1.2
b	b) The surface with plants, algae, fungi, wild animals and biota intervened, exploited, altered or managed and the impact generated on that surface. For the evaluation of the impact, the biological diversity should be considered, as well as the presence and abundance of wild species in a conservation state or the existence of a plan of recovery, conservation and management of these species, according to the Designated in article 37 of the Law.	<u>Flora and vegetation</u> As a result of the observations made in the field, it has been concluded that the project is mainly located in the absolute desert, defined as an environment where there is a total absence of vegetation due to the difficult climatic conditions, Product of the insignificant precipitations, where plant life is practically absent in much of its extent, except in particular conditions, where Some floristic elements appear, but with such low coverage (less than 5%) That do not come to form from a ecosystem point of view, a plant formation (see Chapter 3 of Baseline). Therefore, from the perspective of this environmental component, the project will not generate impacts Significant that warrant the presentation of an environmental impact study, in accordance with the provisions of article 6 of the regulation of the SEIA. <u>Vegetation in protected areas and/or priority conservation sites</u> In the area of influence of the project, taking into consideration the guidelines and instructions of ordinary No. 103808/2010 and No. 100143/2010, both of the Executive Directorate of the Sea, a minor section of the high voltage line located in the commune of Pozo Almonte is Placed within the Pampa del Tamarugal National Reserve, since it will connect with the S/E Lagunas, which is located inside the area. However, and as is realized in Chapter 4, section 4.7.5 of the EIA, this will be a minor environmental impact since under no assumption will affect the watershed of this sector, which is the main environmental legal good protected with the declaration of National Reserve. Nor will significant	5.4.1.2

Literal	Description	effect, characteristic or circumstance	Numeral
		impacts be generated in the Tamarugo forests located within this area, as is credited in this chapter. Therefore, from the perspective of this environmental component, the project will not generate significant impacts that warrant an environmental impact study, according to the provisions of article 6 of the regulation of the SEIA. <u>Fauna</u> The results obtained from the survey carried out in the field campaigns, within the study area, indicate the presence Of 24 species, of which nine have some category of conservation according to the national legislation in force. According to the account in Chapter 4, section 4.7.2.2, the project will generate a significant affectation of the nesting area of the species Oceanodroma markhami (Black Sea Swallow), since between the sectors Plateau and Coast identified the existence of a site of Interest for the fauna within the project area, corresponding to the sector in which signs of nesting of the species Oceanodroma Markhami were recorded. Among the findings, there are remains of birds (mainly wings and skulls) and cavities with signs of having been occupied as nests (sand with printed prints Traces of down and traces of fish). Spatially, the site of interest seems to be bounded to the area of the North Access road, near Rio Seco. As mitigation measures for the Black Sea swallow it is envisaged not to start the construction phase during its breeding season, also to carry out a prior release of the area by means of a pedestrian inspection, as it is realized in the Chapter 7, section 7.2.1 of the EIA. Therefore, from the point of view of this environmental component, the project requires entry as an environmental impact study, according to the criteria established in article 6 of the SEIA regulation.	
b	b) The surface with plants, algae, fungi, wild animals and biota intervened, exploited, altered or managed and the impact generated on that surface. For the evaluation of the impact, biological diversity should be considered, as well as the presence and Abundance of wild species in a state of conservation or the existence of a plan for the recovery, conservation and management of such species, in accordance with article 37 of the Law.	<u>Reptiles</u> As is realized in Chapter 4, section 4.7.2.2, at this stage there could be loss of copies of Liolaemus Stolzmanni and Phyllodactylus Gerrhopygus, by certain construction activities of the project involving land preparation, transfer, Construction and assembly of Structures, which will have a significant impactn this species. To take charge of this impact, the project proposes as a mitigation measure a rescue Plan in the area of the reservoir specifically on land with the potential to constitute habitat as raised in the baseline, as detailed in Chapter 7 , section 7.2.1. Therefore, from the point of view of this environmental component, the project requires entry as an environmental impact study, according to the criteria established in article 6 of the SEIA regulation.	5.4.1.2

Literal	Description	effect, characteristic or circumstance	Numeral
b	C. The magnitude and duration of the impactf the project or activity on the ground, water or air in relation to the baseline condition.	As mentioned in Chapter 1, during the construction phase, the project's emissions correspond to particulate matter in suspension, noise and vibration. Whereas emissions in the construction phase are temporary, which provide for road wetting measures in the mixing and transfer process of materials; Sealing of truck bodies to prevent material dropping; Installation of short-wind nets in the operations; Maintenance of machinery and vehicles; and speed control in operations, it is estimated that there will be no effect on the quality Environment of renewable natural resources. In the operation phase, atmospheric emissions are very unimportant and therefore do not have a significant adverse effect on the quantity and quality of renewable natural resources, including soil, water and air. In fact, both in the construction and operation phase, the project will not generate significant emissions that are above what is established in the emission standards applicable to the project, as the Chapter 1 gives account. Emissions will also not cause latency or saturation in air quality in the sense that they may give rise to overcoming secondary quality standards. With regard to the marine environment, the project does not envisage the incorporation of additives, disinfectants or anti-fouling to seawater used for the generation of electric energy, in any of the phases of the pump-generation process, therefore the seawater Restitute will not contain contaminants harmful to renewable resources. The project will pump on average 45 m3/s of seawater to the reservoir every day, then go to generation mode and turbine the volume pumped by restoring this water to the sea. The water discharged by not being used for industrial processes as such, complies with table 5 of the D. S 90/2000 of SEGPRES and offers according to the guide of CONAMA for the establishment of the secondary norms of environmental quality for the continental waters Superficial and marine, a very good quality water discharge. Under a regime of operation Normal, the modeling determined that it is expected for most of the time a differential under 4 °c and for a temperature differential of 4 °c, the results indicate that it reaches the surface (on the point of discharge), values below 3 °c , temperature decreases as you increase the distance with the discharge point as you can see in the thermal dispersion pen. As it is credited in Chapter 4, it is possible to conclude that in pumping mode the project will not have a significant impactn the marine environment. The impact basically consists of the plankton's suction of various species, including commercials that are part of the plankton in their larval stage. Nor is a significant impact expected in the generation mode, when water is discharged from the reservoir, considering the results of temperature, salinity and suspended solids. Consequently, the project will not present significant adverse effects on the quantity and quality of hydrobiological resources.	5.4.1.2

Literal	Description	effect, characteristic or circumstance	Numeral
		During the construction and operation phase, the wastewater will be treated daily in the treatment plants that are considered to be installed and its effluent shall comply with the NCh 1.333/78. The treatment of sewage will be extended to the entire construction period and its effluent treated with quality NCh 1.333/78, water for irrigation, will be used in humidification of roads as a measure of dust suppression. In the operation phase, the PTAS installed in the control building will continue to operate. The sludge generated will be removed periodically and arranged by companies that have AUTSanitary curl granted by the health care of the I region of Tarapacá..	
b	C. The magnitude and duration of the impactf the project or activity on the ground, water or air in relation to the baseline condition.	As for the generation of energy forms, as mentioned, in the construction phase there will be four 100 KVA backup generators in different sectors and lines of operations connected to the existing distribution network. Vibrations will occur temporarily and in specific sectors, as in the portals of the tunnels, to a lesser extent at the beginning of the tunnels and where it is necessary to carry out blasting. In the operation phase, the project generates electrical field and magnetic field values that decrease proportionately with the distance to the line, to reach negligible values at a distance of 10 m (Electric line of 23 KV). According to the distances to which the project is located in relation to the inhabited sectors identified in this region, the values of electrical field and magnetic field have no effect on them. The project will not generate known effects by combination and/or interaction of emitted or generated pollutants.	5.4.1.2
b	d) Exceeding the values of the concentrations established in the secondary standards of environmental quality in force or the significant increase or decrease, as appropriate, of the concentration over the limits established therein. In the absence of such standards, the rules in force in the States referred to in article 11 of the DS 40/12 shall be used as reference. If it is not possible to evaluate the adverse effect in accordance with the foregoing, the magnitude and duration of the effect generated on the biota by the project or activity and its relationship with condition D shall be considered. Baseline.	With regard to atmospheric emissions, in annex 4.2, the emission estimation is given, a study whose calculations conclude that the emissions of combustion gases and particulate matter comply with the current environmental regulations, without altering the conditions that Allow the presence and development of the biota in the place.	5.4.1.2

Literal	Description	effect, characteristic or circumstance	Numeral
b	The difference between estimated noise levels with project or activity and the level of background noise representative and characteristic of the environment where native fauna is concentrated associated with habitats of relevance for nesting, breeding or feeding.	In the Terrestrial field: With regard to the nesting sites of the Black Tern (Oceanodroma Markhami), adjacent to the access road sectors, during the construction phase of the project will increase the basal levels of noise in the area of influence of the project, which On average, they will reach 44 DB (A) in daytime, in this sector. According to EPA (1971), over 60 DB an impact is expected in vertebrate fauna. In this way and according to the noise modelling performed and whose results are presented in annex 4.2, no significant impact is expected during the construction phase due to the noise generated. However, in order to minimise the magnitude of this impact, special constructive measures will be adopted during the construction phase, such as applying a simultaneous restriction of operation to the machinery involved in the working fronts associated with The construction of access roads, ie, can operate a single machine at a time, either the bulldozer, Camón Hopper, grader or backhoe. In addition, a modular acoustic barrier, made based on wood OSB, must be implemented for the activities associated with the construction of the access road, when they are with operations in the vicinity of the receivers in Rio Seco. The technical background is presented in annex 4.2 Study noise modeling, Section 10 The layout of the screens must be such that it blocks the direct radiation from the source of noise towards the receivers. Therefore, no significant impacts are estimated with respect to this component which warrant the presentation of an environmental impact study, in accordance with article 6 of the SEIA regulation.	5.4.1.2
b	The impact generated by the use and/or handling of chemicals, waste, and any other substances that may affect renewable natural resources.	As stated above, the holder shall generate non-hazardous waste for which management measures will be adopted in accordance with article 80 of the Sanitary Code and DF L n ° 1/189 minsal, temporarily stored in areas especially Equipped in the facilities of slaughter, which will have concrete screed, roof and perimeter closure. In the case of hazardous waste storage, the sites will have continuous-base, waterproof, structural and chemical resistance, perimeter closure whose height prevents the free ACThat of animals and persons, as well as roof, signage and other conditions that gathers article 33 and following of the D. S 148/03 minsal. All previously exposed measures and conditions are intended to prevent spillovers and reduce the risk of spillage. The waste generated during the construction phase will be finally arranged by companies that have a	5.4.1.2

Literal	Description	effect, characteristic or circumstance	Numeral
		sanitary authorization granted by the health care of the I region of Tarapacá. During the project's operation phase, non-hazardous solid waste will be managed at the plant's facilities in accordance with current regulations in specially conditioned areas. These wastes will be finally arranged by companies that have a sanitary authorization granted by the health care of the I region of Tarapacá. In the case of hazardous solid waste, these will be stored in the warehouses for hazardous waste described in Chapter 1, description of the project and in PASM N ° 142, thus protecting and safeguarding not only the health of the population but also the Impactn renewable natural resources.	
b	g) The impact generated by the volume or flow of water resources to be intervened or exploited, as well as that generated by the transfer of a watershed or subwatershed to another, including that generated by ascent or descent of groundwater and surface water levels .	According to article 6, letter G) of the SEIA regulation, the evaluation of this impact shall always consider the magnitude of the alteration in: G. 1. Groundwater bodies containing fossil waters. G. 2. Bodies or water courses in which fluctuations of levels are generated. G. 3. Vegas and/or bofedales that may be affected by the ascent or descent of water levels. G. 4. Areas or areas of wetlands, estuaries and peat bogs that may be affected by the rise or fall of groundwater or surface water levels. G. 5. The surface or volume of a glacier susceptible to change. The project will not intervene or exploit any hydric resources or produce any effect on the bodies of water referred to in the preceding point, since they do not exist in the area of the project (see Chapter 3 Baseline).	5.4.1.2
b	The impacts that may be generated by the introduction of exotic species into the national territory or in certain areas, zones or ecosystems.	Considering the objective of the project and the typology by which it enters the SEIA, no exotic species will be introduced to the national territory.	5.4.1.2
b	**Conclusion**	**E(l) Project requires entry into the SEIA through an EIA, pursuant to article 11 (b) of the LBGMA in relation to article 6 of the SEIA regulation, as it generates or presents effects, characteristics or circumstances involving adverse effects Significant on the quantity and quality of renewable natural resources, including soil, water and air.** **The above, specifically in relation to literal B) by the involvement of nesting areas of the Black**	5.4.1.2

Literal	Description	effect, characteristic or circumstance	Numeral
		Tern, Oceanodroma Markhami and the loss of specimens of Liolaemus Stolzmanni and Phyllodactylus Gerrhopygus.	
C	To The intervention, use or restriction of the access of natural resources used as economic sustenance of the group or for any other traditional use, such as medicinal, spiritual or cultural use.	The area of influence of the project considered for the purposes of prediction and evaluation of the project on the human Environment comprises the areas of Caleta San Marcos and Caleta Rio Seco. The primary and secondary information obtained from the baseline registered human population resident in the area of influence, in Caleta San Marcos and Caleta Rio Seco, whose quality of life will not be affected by obstruction and intervention of the use of the natural resources of the Area of management and exploitation of the benthic resources (AMERB) of Caleta San Marcos, as indicated in chapter 4 prediction and evaluation of impacts. On the other hand, the results of the modeling carried out for the suction and the discharge of seawater from the reservoir (annex 4.3 and 4.4) demonstrate EU there will be no significant effect on the marine resources of the area within Chomache Bay. The foregoing allows to argue that there will be no significant adverse effects on the quality of life and customs of the population living in the aforementioned sectors. Therefore, the project does not consider significant impacts on this component, as set out in article 7 of the SEIA regulation.	5.4.1.3
C	b Obstruction or restriction to free movement, connectivity or significant increase in travel times.	The area of influence of the project considered for the purposes of predicting and evaluating the impactn the human environment, includes the areas of Caleta San Marcos, Caleta Rio Seco, the route A-1 that links the cities of Iquique and Antofagasta along the coast and the use of R Uta A-752 that passes through the sectors identified in this EIA as Pampa and Meseta. The primary and secondary information obtained from the baseline recorded that the main route used in the towns of Caleta San Marcos and Caleta Rio Seco is the route A-1. This route connects Las Caletas, located on both sides of this route, with the city of Iquique, communal head, to the north and the cities of Tocopilla and Antofagasta to the south. The flows associated with this route are moderate and have a diverse typology of vehicles that occupy it ("Caleteros" buses, interprovincial buses, private vehicles, companies, trucks). The streets and roads of the Ocalidades are ground and with a local use. The route A-752, located in the Pampa and Meseta sectors, as indicated, is a dirt track that is occasionally traveled by private vehicles or linked to mining activity. The vehicular flow is very low in this route and even lower on the part of the inhabitants of the towns mentioned above. Therefore, the revision of the aforementioned antecedents does not identify, during the construction and operation of the project, an affectation to the dynamics of displacement that significantly alter the	5.4.1.3

Literal	Description	effect, characteristic or circumstance	Numeral
		quality of life of the population, that warrant the Presentation of an environmental impact study.	
C	C The alteration to the access or to the quality of goods, equipment, services or basic infrastructure.	As described in Chapter 4, section 4.7.6.8 of this EIA, the project does not foresee a significant impactn the access or quality of goods, equipment, services or basic infrastructure of the population resident in the area of influence, Specifically for the Caleta San Marcos and Rio Seco. However, it should be noted that the project considers as a voluntary commitment the delivery of up to 50 m3/day of desalinated water in the Caleta San Marcos, in the vicinity of the pond of accumulation of the Rural Potable water system of the locality, which is located in Current processing. Further information is available in Chapter 15 of the EIA. Therefore, with regard to this component, no significant impacts are foreseen that warrant the presentation of an environmental impact study.	5.4.1.3
C	D The difficulty or impediment to the exercise or the manifestation of traditions, culture or community interests, which may affect the feelings of belonging or the social cohesion of the group.	.of the prediction and evaluation of the impact (Chapter 4, section 4.7.6), no alterations are foreseen in the quality of life of the population and its customs, which hinder or impede the exercise or manifestation of traditions, culture or community interests, considering The object of protection of the standard. On the other hand, it is also noted that as indicated in Chapter 3, section 3.9.7.3, Letter V), in the area of influence of the project have identified individuals belonging to indigenous ethnic groups in the Caleta San Marcos, but under no assumption make up Groups belonging to indigenous communities, since they do not perform activities due to their condition that are manifesting their worldview, nor have an ancestral relationship with the natural resources of the sector, among others. Therefore, from the perspective of this component, no significant impact is foreseen that warrants the presentation of an environmental impact study.	5.4.1.3
C	**Conclusion**	**The project does not require entry into the SEIA since it does not generate resettlement of human communities or significant alteration of the life systems and customs of human groups...**	5.4.1.3
D	To Protected populations: Indigenous peoples shall be understood to be independent of their form of organization (section 3, article 8). In order to evaluate whether the project or activity is susceptible of affecting protected	By means of the information gathering of the human half, in the area of influence of the project no protected populations have been identified around the projected installations, therefore it will not be affected communities protected by the Law n ° 19,253. In fact, as indicated in Chapter 3, section 3.9.7.3, Letter V), in the area of influence of the project, individuals belonging to indigenous ethnic groups have been identified in the Caleta San Marcos, but which under no assumption form a group belonging to Indigenous communities, since they do not	5.4.1.4

Literal	Description	effect, characteristic or circumstance	Numeral
	populations, the extension, magnitude or duration of the intervention will be considered in areas where they inhabit (section 9, article 8).	perform activities due to their condition that are manifesting their worldview, nor have an ancestral relationship with the natural resources of the sector, among others. Moreover, as indicated by the purpose of the prediction and evaluation of the impact (Chapter 4, section 4.7.6), there are no foreseen alterations in the quality of life of the population and its customs, which hinder or impede the exercise or manifestation of traditions, culture or community interests, considering the object of protection of the standard. From the perspective of this environmental component, therefore, the project does not merit entry through an environmental impact study.	
D	b Protected resources: Such are those placed under official protection by means of an administrative act of competent authority, in order to ensure biological diversity, to protect the preservation of nature or to preserve the environmental patrimony (Section 4, Article 8). In order to evaluate whether the project is liable to affect protected resources, it shall be considered the extent, magnitude or duration of the intervention of its parts, works or actions, as well as the impacts generated by the project, taking into special consideration The protective objects that are intended to be protected (final paragraph, article 8).	The area of the project recognizes the presence of fauna in conservation category. For the impacts identified in the phases of the project, construction and operation, mitigation measures have been established on the fauna that is listed in conservation category, as is realized in Chapter 7 of this EIA.	5.4.1.4
D	C Protected areas and Priorit sitesAryans: Protected areas shall mean any portion of territory, geographically delimited and established by an administrative act of competent authority, placed under official protection in order to ensure biological diversity, To protect the preservation of nature or to preserve the environmental patrimony (Section	The project requires making the connection of the LAT to the existing Lagunas substation and is currently located within the area corresponding to the national reserve of the Pampa del Tamarugal. This corresponds only to the last meters of line (less than 100 m) and does not contemplate the accomplishment of works apart from the installation of towers and then the connection inside the substation. The Pampa del Tamarugal National Reserve possesses the copulative requirements that the standard in analysis requires for a zone to be declared a protected area. It is a surface declared as such by means of the DS N ° 207/1987 of the Ministry of Agriculture, Administrative act that fixes its	5.4.1.4

Literal	Description	effect, characteristic or circumstance	Numeral
	5, article 8). In order to evaluate whether the project is susceptible to affect protected areas or priority sites for conservation, the extent, magnitude or duration of the intervention of its parts, works or actions, as well as the impacts generated by the project, shall be considered. , taking into special consideration the protective objects that are intended to be protected (final subparagraph, article 8).	geographical limits and with a clearly environmental objective whenever its object of protection is to preserve the nature in situ Sheltering the forests of Tamarugo. In this regard, it is necessary to point out that the surface of this reserve was subsequently extended by D. S N º 310/1995 of the MINAGRI D. S N º 59/2013 of the Ministry of National Goods, regulations having the same object of protection. However, and as is realized in Chapter 4, section 4.7.5 of the EIA, this will be an environmental impactf lesser significance and magnitude, since under no assumption will affect the watershed of this sector, which is the main environmental legal good Protected by the National Reserve Declaration. Nor will significant impacts be generated in the Tamarugo forests located within this area, as is credited in this chapter. In this regard, article 8 of the SEIA regulation requires the presentation of an environmental impact study for the case in which the project is located in (or near) protected areas susceptible to being affected, which is not the case according to the reasons Ñaladas previously. Therefore, from the perspective of this environmental component, the project will not generate significant impacts that warrant an environmental impact study, according to the provisions of article 8 of the regulation of the SEIA.	

Literal	Description	effect, characteristic or circumstance	Numeral
D	D. Protected wetlands, glaciers and territory with environmental value. Article 8 (6) of the SEIA Regulation defines *"Protected wetlands"* such as those aquatic ecosystems included in the list referred to in the Convention on Wetlands of International importance, especially as waterfowl habitat better known as the "Ramsar Convention", incorporated in the management National legal by D. S N º 771/1981 of the MINREL.	Article 8 (6) of the SEIA regulation defines "protected wetlands" as those aquatic ecosystems included in the list referred to in the Convention on Wetlands of International Importance especially as bird habitat Aquatic more known as the "Ramsar Convention", incorporated into the national legal system through the D. S N º 771/1981 of the MINREL. In relation to glaciers, the aforementioned article 8 does not provide a definition. However, and considering a harmonic interpretation as well as the spirit of the norm, we must keep in mind the article 3 literal a) Second subparagraph, that which considers as grounds of entry to the SEIA, certain hydraulic works which significantly alter the Glaciers that are incorporated as such in the public inventory in charge of the Directorate General of Waters. With regard to the definition of the concept "territory with environmental value", article 8 (7) states that it is understood that a territory has such an assessment, "where it corresponds to a territory with zero or low human intervention and provides services Local ecosystem relevant to the population, or whose ecosystems or natural formations present characteristics of oneness, scarcity or representativeness. " However, in order to assess the susceptibility of impactf protected wetlands, glaciers or territories with environmental value, the final subparagraph of article 8 requires consideration of the extent, magnitude or duration of the intervention of the parties, works or Actions, as well as the impacts generated by the project, taking into special consideration the protective objects that are intended to be protected. Applying the above provisions as well as the susceptibility of affectation on the concepts previously defined as a consequence of the project, it should be noted that in the area of influence of the project there are no protected wetlands, glaciers and territory with Environmental value and therefore there is no intervention or affectation of these elements of the natural environment.	5.4.1.4
D	**Conclusion**	**The project requires entry into the SEIA through an EIA by the provisions of article 11 (d) of the LBGMA, in relation to article 8 of the SEIA regulation, as part of the route of the electric transmission line is located at the priority sites "Re National Serva Pampa of the Tamarugal ".**	5.4.1.4
and	The duration or magnitude in which visibility is obstructed to a landscape-valued zone.	The landscape character of the project area is determined by the dominance of the abiotic attributes, specifically the geomorphological and soil elements. The landscape forms are stable and persistent so there is a moderate singularity of the attributes of the landscape, however there are ways that by their position in the landscape to attract more attention of the observers, as is the case of the coastal cliff. The human interventions are very low, these being mainly roads, power lines, substation and some	5.4.1.5

Literal	Description	effect, characteristic or circumstance	Numeral
		villages, so the countryJE retains its naturalness. The environmental relevance of this factor was assessed in relation to the visual quality of the landscape units established based on the visible areas of the observers identified in the area where the project will be installed, which resulted in the Existence of average and low qualities. The incorporation of new elements in the landscape, contributed by the project, generate a dominance in relation to the scale of the landscape and concentrate the attention of the observer over the existing elements in sight. In relation to the types of landscapes identified, two units were highlighted, one by the altitude, shape and location of the relief of the coastal cliff, and the other by the high degree of roughness of its soil, in the Pampa del Tamarugal, which represents the typical landscape Desert of the north of Chile, especially by the presence of the salares. Notwithstanding the foregoing, the sum of the biophysical, aesthetic and structural characteristics that give character to the landscape, determine that the area of influence of the landscape has a moderate or medium landscape value, determining that for the most part it is a A common landscape in the region, with a few outstanding visual attractions. In chapter 4, landscape impacts were generally determined as non-significant. Specifically, in the reservoir sector, the impact assessment indicates that the impacts are negative because it means adding elements that are not typical of the natural landscape, however, their impact is not very significant.	
and	B. The duration or magnitude in which the attributes of a zone with a landscape value are altered.	The area of influence of the project does not constitute an area of landscape value in accordance with the definition of subsection 2, article 9) of the SEIA regulation. For this reason, the area of the project does not represent a place resorted by tourists. On the contrary, the uniqueness of the project has the potential to be a pole of attraction for tourists who want to observe the project's facilities. Therefore, there are no copulative requirements that the standard requires to be before the generation of the effect in analysis, namely zone with scenic value on the one hand, which attracts flow of visitors or tourists to it, on the other. The project also does not obstruct free movement or change the flow of tourists..	5.4.1.5
and	**Conclusion**	**The project does not need to be entered into the system through an EIA in accordance with the provisions of the letter e) of the LBGMA in relation to the article 10 ° of regulation of the SEIA, since it does not generate significant alteration on the scenic or tourist value of a ZOna.**	5.4.1.5

Literal	Description	effect, characteristic or circumstance	Numeral
F	To The magnitude in which a national monument of those defined by Law no 17,288 is removed, destroyed, excavated, transferred, damaged, intervened or permanently modified.	Considering the scope of application of article 1 of Law No. 17,288, which comprises within its object of protection national monuments, Anthropo-archaeological and paleontological parts or objects, as well as places, constructions or objects of character Historical or artistic; Is that both literals are analyzed together. The baseline identified within the study area 23 archaeological sites; Three undetermined inscribed fingerprints lacking associated diagnostic material, probably historical, a lithic set of medium density identified as pre-Hispanic, four structures/milestones of subcurrent or indeterminate data, a graveyard Historic nitrate period and platforms and imprints of the old railway. The remaining points correspond to rubbish or accumulations of historical-subcurrent material, including the discovery of historical bottles and an accumulation of mineral. It does not register in the database of the National Monuments Council Monuments of historical, anthropological type or typical zones within the specific area of study or in immediate areas; It should be noted that the archaeological monuments are all those known or to identify, by the only Ministry of the law, without requirement of its express cataloguing. In relation to the archaeological heritage, the operation phase does not consider activities that could impact the identified findings, because the maintenance and repairs will correspond to activities very focused around the towers. Notwithstanding the foregoing, during the construction phase of the project, a significant impact can be produced on archaeological sites and of patrimonial value due to the preparation of the land, the earth movements necessary to enable the path of Access and excavations required. In addition, this impact could occur during the installation of towers and cable-laying. In order to take charge of this impact, the project considers the installation informative and shelter signage, the execution of an archaeological management Plan, a permanent archaeological monitoring and training, as described in Chapter 7 of the EIA. In order to find the pre-Hispanic lithic material set in the area of the slaughter plant, the project will carry out a sub-superficial evaluation of archaeological intervention using boreholes before the beginning of the works to verify the potential Stratigraphic the site and estimate its temporary affiliation.	5.4.1.6

Literal	Description	effect, characteristic or circumstance	Numeral
F	To The magnitude in which a national monument of those defined by Law no 17,288 is removed, destroyed, excavated, transferred, damaged, intervened or permanently modified.	With regard to paleontology, two types of findings are distinguished. The first corresponds to the presence of coastal deposits in the area of the camp, on the coastal end of the access road and the reservoir sector, which are characterized by presenting, in all areas, levels with Coquina Quaternary. The second corresponds the presence of fossil remains of Mesozoic marine invertebrates attributable to the formation the Godo (Bajociano-Oxfordiano). This unit is defined as a marine sedimentary sequence, fosilífera. In this unit were found remnants of corals (presMiblemente assignable to the order Tabulata and Escleractínea) and several indeterminate bivalve molluscs with state of preservation from regular to bad. For these records the project considers rescue plan and training. Notwithstanding the above, the holder shall proceed in accordance with the obligations prescribed by Law No. 17,288 and its rules of procedure, in such a way that in view of the discovery of archaeological materials on the occasion of excavations or earth movements, it shall be completely paralyzed The part or work of the project associated with the area of discovery, giving immediate notice to the Council of National Monuments, the Environmental assessment Service, the Regional government and Carabineros de Chile. In addition, and as a preventive measure,It has established training for slaughter personnel, inductions whose registration will be signed by the competent archaeologist and at full disposition of the authority.	5.4.1.5
F	B. The magnitude in which constructions, places or sites are permanently modified or deteriorated because of their constructive characteristics, for their antiquity, for their scientific value, for their historical context or for their singularity, belong to the patrimony Cultural, including indigenous cultural heritage.	Ditto letter A)	5.4.1.5
F	C. The affectation to places or sites in which habitual manifestations of the culture or folklore of some community or human group are carried out, derived from the proximity and nature of the parts, works and/or actions of the project or activity, considering Especially those referred to indigenous peoples.	As credited in Chapter 4, section 4.7.6, the project does not consider intervening places where there is a demonstration of the culture or folklore of any people, community or human group.	5.4.1.5
F	**Conclusion**	The project requires entering the system through an EIA, in accordance with the provisions of the letter F of the LBGMA, in relation to article 11 of the regulation of the SEIA, because it will generate a	5.4.1.5

Literal	Description	effect, characteristic or circumstance	Numeral
		significant impactn sites identified with archaeological value and Paleontological.	

Source: Self-elaboration

16.1.4. Mit's Plan of measuresIgación, repair and CompensaciÓn

Table 6. Chapter Measures of MItigación, REparación and/or COmpensación Impacts and SEguimiento ToMbiental. Measures of MItigación.

Stage	Component	Measure Name	Associated Impact	Objective	Implementation form and opportunity	Compliance indicator	Numeral
Construction	Fauna	Restriction of the commencement of construction of the North access road in the area where remains of the Black Sea swallow species were found (*Oceanodroma Markhami*)	Involvement of the nesting area of the Black Sea Swallow (Oceanodroma markhami). On the occasion of the construction will develop a path whose works can have impactn the sites of Nesting identified on the baseline.	Avoid affecting the nesting area of the species *Oceanodroma Markhami.*	To achieve the objective before fixed, the beginning of the construction of the access road from Río Seco, in the nesting sectors identified in the baseline, will be held between December and June of the first year of construction, outside the nesting period. In addition, prior to the construction of the North access road in the sections corresponding to where the remains of nests were identified, a field supervision will be carried out by a fauna specialist in order to free the area to intervene. The release of the area implies that a professional will travel the sector in a pedestrian way and at low speed in search of nests of *Oceanodroma Markhami*. If the presence of nests with a black tern is detected, the competent authority shall be informed.	Site Release report for commencement of construction presented to the Superintendency of the Environment (hereinafter, SMA) with copy to SAG, with the report of the activities carried out following the field supervision. This report will be forwarded within the month following the release of the area.	7.2.1
Construction	Fauna	Rescue and relocation Plan for species *Liolaemus Stolzmanni* And	Loss of specimens from the reptile Group in	Avoid the loss of copies by relocation in an area that will not	The catches will be carried out in the area of the reservoir, in the sectors where the baseline findings were made.	Obtaining the authorization granted by the Agricultural and Livestock Service	7.2.1

Stage	Component	Measure Name	Associated Impact	Objective	Implementation form and opportunity	Compliance indicator	Numeral
		Phyllodactylus Gerrhopygus	conservation category corresponding to species *Liolaemus Stolzmanni* And *Phyllodactylus Gerrhopygus.*	be intervened by the execution of the project, in order to avoid the loss of specimens and the deterioration of local populations.	Its implementation will consist in the active search of specimens in their potential shelters. The captured specimens will be held captive, transported and finally released. The catches will be carried out by a team with experience in wildlife management, led by a professional specialist in the field. In order to decrease the probability of recolonization, these will be carried out in a near-time to the intervention of the area to be released. For the same reason, the rescue will be by sectors according to the construction program. The activities shall be carried out after obtaining the catch permit granted by the competent authority. The methodology for determining the rescue areas in the reservoir and the way to carry out the rescue and relocation is presented in order to present the technical and formal contents necessary for the PASM 146 (Section 10.14, chap. 10).	(hereinafter, SAG) and subsequent compliance report sent to the SMA, with copy to sag that will be presented to the SMA within the 60 days following the completion of each rescue.	
Construction	Archaeology	Informative signage and shelter and fencing In the cases indicating	Archaeological heritage	Preserving the historic cultural heritage Present in the area of influence of the project	This measure will take place during the construction stage in the coastal, plateau and Pampa sectors of the project where the Finds. Prior to the beginning of the construction stage of the project, informational signage will be installed on the troop footprints. Shelter signage will be installed close to the cemetery of the dry river sector and to the evidence of the passage of the old railway in order to ensure its preservation because of its historical interest. Prior to its installation, the proposal of this signage will be sent to the	Photographic record of the existence of signage and fencing in The sector envisaged and report of activities to the SMA, submitted within the 60 days following the completion of the commitment, with a copy to the CMN.	7.2.2

Stage	Component	Measure Name	Associated Impact	Objective	Implementation form and opportunity	Compliance indicator	Numeral
					Council of National Monuments (hereinafter, CMN). For the fencing, a demarcation will be made of the proper emplacement of fencing and fences, so that their installation does not constitute a threat to the points of patrimonial interest. The installation of signage and fencing will be carried out on the following findings 6, 11, 12, 13, 16, 17, 22 and 23 (see annex 3.1 baseline)		
Construction	Archaeology	Archaeological Management Plan	Archaeological heritage	To preserve the historical cultural heritage present in the area of influence of the project	The management Plan will be applied to site number 19 (see annex 3.1 of the baseline chapter) prior to the commencement of the construction stage of the project camp. For these purposes, chapter 10 is accompanied by the technical and formal contents for the granting of PAS 132 (Section 10.6). Once the RCA has been obtained, to implement the Plan, the excavation permits will be managed with the CMN to first implement an archaeological probe, in a network of 12 boreholes of 50 x 50 cm distributed in an area of 3 ha, corresponding to the area where the Camp. Then the eventual findings will be raised and the collected materials will be catalogued and packed for later delivery to a Museal depot authorized by the CMN.	Final report of activities submitted to the SMA, with a copy to CMN, within 90 days following the end of the field activities and the preparation of the findings for delivery. , the report will give an account of the work done, the results thereof and the final destination of the materials collected.	7.2.2
Construction	Archaeology	Permanent Archaeological Monitoring	Archaeological heritage	Avoid impacts on unforeseen archaeological remains and identification of eventual	In order to carry out the permanent monitoring indicated, a specialist archaeologist will be counted during the whole construction phase of the project. If archaeological material is identified during these activities, the relevant authorities will be notified and appropriate rescue and mitigation	Semi-annual reports and final report of the project holder, accompanying in each case the archaeologist's technical report, sent to the SMA	7.2.2

Stage	Component	Measure Name	Associated Impact	Objective	Implementation form and opportunity	Compliance indicator	Numeral
				undetected subsurface findings in previous stages.	measures will be implemented in accordance with the CMN.	with a copy to the CMN The final report will be delivered within 60 days after the completion of the construction phase, the SMA and Copy to CMN.	
Construction	Archaeology	Cultural Heritage Care Training	Archaeological heritage	Avoid impacts on unforeseen archaeological remains and impart general knowledge about the archaeological heritage existing in the activity area	These talks will take place during the entire construction stage of the project, every 6 months. The lectures dictated by an archaeologist in person or by means of videos or similar technologies.	Registration of assistance to the talks of archaeological induction and evaluation. The registration will be in the office of the proprietor.	7.2.2
Construction	Paleontology	Paleontological Rescue Plan	Paleontological Heritage	Of the existing paleontological heritage in the area of the Project.	The rescue of the paleontological patrimony will be carried out before the beginning of the execution of the works of construction of the sectors with finds, for the following sites: • Remains of terrestrial gastropods Quaternary in high-hospice gravel levels: a) 385964 E, 7666096 S; b) 383793 E, 7665886 S; c) 386055 E, 7665878 S; d) 381749m E, 7677978 S. • Remains of Quaternary marine invertebrates presumably from the so-called littoral deposits: E) 389880 E, 7665930 S; f) 383971 E, 7665991 S; g) 383793 E, 7665886 S; h) 380425 E, 7678207 S; i) 380376 E, 7678067 S; j) 380159 E, 7672120 S. indicated on the	Request for appropriate authorisations and submission of compliance report to the SMA, with copy CMN, Within 60 days after completion of the construction phase.	7.2.3

Stage	Component	Measure Name	Associated Impact	Objective	Implementation form and opportunity	Compliance indicator	Numeral
					baseline. The Plan includes collection of significant samples by specialists, with the respective geographical and stratigraphic positioning, healing of the paleontological samples collected in the laboratory, preparation of a catalogue of samples and their inclusion in the Collection or museum that indicates the CMN, the elaboration of a rescue report including the treatment and specific management of objects of paleontological character, in consideration of all the environmental regulations in force in Chile and the contextualization of the findings in The taxonomic and stratigraphic area.		
Construction	Paleontology	Talks to promote the valuation of the paleontological heritage	Paleontological Heritage	To promote the valuation of the paleontological heritage	These talks will take place during the entire construction stage of the project, every six months. The lectures will be dictated by a paleontologist, in face form or by means of videos or similar technologies.	Maintenance of registration assistance to paleontological induction talks. The registration will be in the office of the proprietor.	7.2.3

It should be noted that the project does not envisage implementing measures of repair and/or compensation.

Source: Self-elaboration

16.1.5. Contingency and emergency prevention Plan ToPartnered with the Eventual SItuaciones RIesgo or COntingencia IDentificadas

Table 7. Chapter Contingency and emergency prevention Plan

Type	Risk	Contingency prevention Measure	Emergency measures	Numeral
Natural	Earthquake	The design of engineering and the construction of the project's facilities comply with national and international standards of seismic resistance. In the event of an accident occurring in any of the stages of the project the emergency Plan will be activated. Monitoring of the affected area will be carried out to assess and report damage to the relevant authority if there is Community environmental damage.	Construction stage Depending on the magnitude of the earthquake, the alarm will be activated and if applicable, the evacuation will be ordered to the safety zones. Workers should stay in the safety zone and wait for instructions from trained personnel. An earthquake, the owner will proceed to evaluate the damage in the physical structure of the elements of capture, conduction of channels and storage, establishing equipment of repair of these systems. In the event that there are damages which impede the normal functioning of the plants, the competent authorities shall be informed of this situation. Operation and closing stage Ditto to the measures indicated for the construction phase.	8.6.4 8.7.8
	Tsunami	Construction stage The installation of operations in areas exposed to flooding will not be located. Operation and closing stage During the operation stage, the plant will have a contingency and emergency prevention Plan, which includes the indications given for the construction stage and which in this area establishes the RCA.	Construction stage The head of the land shall be notified immediately to the person who will inform the risk prevention The communications procedure will be activated according to the magnitude of the emergency. Depending on the magnitude of the flood, the works will be immediately paralyzed and if applicable, all personnel will be evacuated to safe areas.	8.6.4 8.7.8

Type	Risk	Contingency prevention Measure	Emergency measures	Numeral
			Operation and closing stage In the face of the emergency situation of a surprise flood of rivers, a Plan of action is considered, with the following activities, alarm issuance, personnel evacuation and equipment detention.	
	Mud and flood flow	Construction stage To prevent damage to persons and installations the site of the slaughtering facility has been carried out outside of the areas at risk of mud and avalanche flows. If this situation is detected, an alarm will be activated. Staff should approach meeting points if the emergency coordinator so indicates. These meeting points will have to be signposted. A monitoring of the affected area will be carried out in order to evaluate and report damage to the relevant authority, if the environmental or community condition is warranted. The use of heavy machinery will be managed to clear the affected areas. Operation and closing stage During the operation stage, the plant will have a contingency and emergency prevention Plan, which includes the indications given for the construction stage and which in this area establishes the RCA.	Construction stage The emergency manager who will be the risk prevention manager of the contractor during the construction and the risk prevention officer of the owner during the operation will be immediately notified. Depending on the magnitude of the event, the works will be immediately paralyzed and if applicable, all personnel will be evacuated to safe areas. Only construction tasks may be activated when the ONEMI or Carabineros Has Informed the supervisor that the area is out of danger. A restriction area will be immediately delimited, where only trained personnel can enter. Trained personnel will inspect the site of the accident, verifying that there are no injuries in the area. In case of registering injured by this accident, they will be taken to a care center. A specialist in risk prevention, will inspect the area, demarcating the areas of risk. The professional will determine if it is advisable to relocate the facilities. If this is the case, the relevant authorities will be informed. Operation Stage During the operation phase, the Central will continue to apply the emergency prevention measures, which also include the measures proposed in this EIA as well as the indications that the RCA establishes in this area. Closing stage Ditto to the measures indicated for the construction phase.	8.6.4 8.7.8

Type	Risk	Contingency prevention Measure	Emergency measures	Numeral
	Landslides and landslides	Construction stage In order to avoid damage to people and installations, the location of the installations has been defined, outside the areas exposed to gravitational phenomena. Without prejudice to the above point, in those areas of site construction, service roads and installation of operations, the slope of the cuts will be adapted to the characteristics of soil stability. Containment measures of sectors especially sensitive to the risk of slipping will be implemented. Techniques such as containment nets, revegetation and/or terracing of slopes are considered. Inspections will be carried out on slopes and embankments in such a way as to detect deficiencies in the handling of slopes, which can give rise to situations of risk. Operation and closing stage During the operation stage, the plant will have a contingency and emergency prevention Plan, which includes the indications given for the construction stage and which in this area establishes the RCA.	Construction stage The emergency manager who will be the risk prevention manager of the contractor during the construction and the risk prevention officer of the owner during the operation will be immediately notified. Depending on the magnitude of the event, the works will be immediately paralyzed and if applicable, all personnel will be evacuated to safe areas. Only construction tasks may be activated when the ONEMI or Carabineros Has Informed the supervisor that the area is out of danger. A restriction area will be immediately delimited, where only trained personnel can enter. Trained personnel will inspect the site of the accident, verifying that there are no injuries in the area. In case of registering injured by this accident, they will be taken to a care center. A specialist in risk prevention, will inspect the area, demarcating the areas of risk. The professional will determine if it is advisable to relocate the facilities. If this is the case, the relevant authorities will be informed. Operation Stage During the operation phase, the Central will continue to apply the emergency prevention measures, which also include the measures proposed in this EIA as well as the indications that the RCA establishes in this area. Closing stage Ditto to the measures indicated for the construction phase.	8.6.4 8.7.8
	Tidal waves	Construction stage We will take knowledge of the sea conditions every day on the official site of the Shoah before the daily work planning. No work will be done in areas exposed to waves and winds during		8.6.4 8.7.8

Type	Risk	Contingency prevention Measure	Emergency measures	Numeral
		the storm. Rescue teams will be installed in case of immersion. <u>Operation Stage</u> The sea conditions will be taken up every day on the official site of the Shoah prior to the planning of the maintenance work. No work will be done in areas exposed to waves and winds during the storm.		
Anthropic	Spillage of fuel, lubricant or hazardous substances into the sea	<u>Associated security measures:</u> This risk is associated with failures and/or tipping that can be suffered by vessels, marine cranes and auxiliary vessels for the construction and assembly of the intake in the sea. In each operation the correct state of the fuel tanks, crankcases, motors, lubricating and fuel sleeves of the boats and machinery will be verified, as well as the correct state of the hydraulic oil hoses of the machinery to Use. The drivers of vessels and marine machinery must keep up to date the licenses and permits granted by the maritime Authority for the management of marine vessels and machinery, as well as in first aid procedures and control of eventual Spills (includes instruction of the procedures associated with the handling of hazardous substances). Before a spill the boat or machinery operator must stop the main motor and the auxiliary motors if any, and it stops any source of ignition if possible. If there is a spill it will try to stop it, without putting in irrigation its own safety. The spill arrest kit will be used for fuel or oil stain Once the stain is controlled, it will be used to collect the fuel or	Before a spill the boat or machinery operator must stop the main motor and the auxiliary motors if any, and it stops any source of ignition if possible. People who are injured or intoxicated should be addressed in the first place. If there is a spill it will try to stop it, without putting in water the safety itself. The spill arrest kit will be used to control fuel or oil stain. Once the stain is controlled, it will be used to collect the fuel or lubricant stain using a skimmer or other manual method. The chief of emergency will be notified.	8.6.4 8.7.8

Type	Risk	Contingency prevention Measure	Emergency measures	Numeral
		lubricant stain using a skimmer or other manual method. Security measures associated with storage and handling: It is not considered storage or manipulation of these substances in the sea. Operation Stage The same precepts as in the construction stage will be observed during the inspections or maintenance of the intake. EtapA closing Ditto to the measures indicated for the construction phase.		
	Spillage of fuel, lubricant or hazardous substances on land	Measures of SESafety associated with Transport The transport of fuel will be carried out by authorized companies. The transport of liquids, such as fuel and others which may be required in the slaughter, shall be governed by the provisions of the legislation in force. The carrier or driver shall have the appropriate licence, together with the training necessary to respond in the event of accidents, with spillage of the substances transported. Drivers of transport vehicles will have training in handling and handling of the substances they carry, as well as in first aid procedures and Control of any spills (includes instruction of the procedures associated with the handling of hazardous substances). Security measures associated withL Storage and handling Personnel will be trained to handle and store this type of substances in the facilities of slaughter. A special storage area for these materials shall be available to the interior of the slaughter plant, which shall be duly signposted and conditioned according to the provisions of the competent authorities.	The vehicle engine and any ignition source should be stopped if possible. People who are injured or intoxicated should be addressed in the first place. If there is a fuel spill it will try to stop, without putting in water the safety itself. A containment dam will form with inert absorbent material (sand or dry earth). The product will not be allowed to reach sewers, bodies of water, land or vegetation. Collect and dispose of the waste in appropriate packaging, close, identify and transfer to authorized final recipient. The head of emergency will be notified	8.6.4 8.7.8

Type	Risk	Contingency prevention Measure	Emergency measures	Numeral
		The fuel and oil drums will be placed on wooden pallets or other devices in order to facilitate their transport and to avoid the humidity and corrosion of them, because of the direct contact between the drums and the ground. It will be available in this area of elements that allow the containment of spills of medium magnitude. The enclosures of these substances shall have the respective safety sheets, which shall contain, among other data, the characteristics of the substances, their risks and the emergency procedures to be activated in the event of a risk statement. The fuel load to machinery and equipment used during construction will be done in a previously defined and clearly demarcated area Exchange oils and other oily wastes shall be stored in suitable places and in empty and closed drums for later disposal in approved locations or returned to suppliers. It should be noted that for the operation of machinery and motor vehicles to be used in construction works, oil will be required Diesel And petrol, which will be supplied by local distribution companies. Under DS No. 379/86 of the Ministry of Economy, which regulates the storage of liquid fuels derived from oil destined for own consumption, contractors will be required to register fuel ponds in the records of the Superintendence of electricity and fuels (SEC), provided that they have a capacity exceeding 1.1 m3, otherwise it will not be necessary to register in that register. <u>Operation Stage</u> Ditto to the measures indicated for the construction phase. <u>Closing stage</u> Ditto to the measures indicated for the construction phase.		
	Fire	<u>Construction stage</u> The Contractor shall be governed by the measures and obligations	<u>Construction stage</u>	8.6.4 8.7.8

Type	Risk	Contingency prevention Measure	Emergency measures	Numeral
		established by Espejo de Tarapacá SpA To minimize the risk of fire. In the installation of operations, specially-enabled enclosures for the storage of fuel and other flammable substances shall be constructed. Flammable materials shall be kept in an orderly and classified form inside the enclosure. The risk prevention will carry out a permanent inspection, detecting possible failures in the procedures of handling these substances. The contractors shall have the basic elements required to combat any hint of fire or fire in the areas of work and installation of operations, as established by the regulations in force in this area (extinguishers, hoses, sand drums , etc.). A monitoring of the affected area will be carried out to assess and report damage to the relevant authority if there is environmental or community damage. Operation Stage For the type of works, no special actions are contemplated for fire events during this stage, except those established by law. Closing stage Ditto to the measures indicated for the construction phase.	The fire alarm will be activated. The emergency chief and the emergency Coordinator will be promptly notified. The fire procedure will be activated, extinguishers will be used to extinguish the fire, only if the accident is controllable. If it is not possible to control the situation, firefighters will be immediately notified and workers will be evacuated to the safety zones. The area will be inspected to verify the presence of injured. If this is the case, it will be transferred immediately to an assistance centre. The causes of the accident should be investigated Activities may only be reactivated once the claim is controlled. Operation and closing stages Ditto to the measures indicated for the construction phase.	
	Traffic accidents	Construction stageÓn Road safety training will be given to all drivers involved in the construction and operation of the project. An internal regulation of good conduct for the safe driving of vehicles will be executed. Failure to comply with this Regulation shall be grounds for immediate dismissal. The staff to hire to handle the trucks, buses or machinery, will be qualified staff, with driver's license per day. They will be required to	Construction stage The emergency chief will be informed of the accident. The emergency will be dimensioned The event will be classified as a traffic accident (mild, serious, serious) The communications Plan with Ambulance (131), firefighters (132) and Carabineros (133) will be activated, informing about the occurrence of the accident, its severity and the identification of the	8.6.4 8.7.8

Type	Risk	Contingency prevention Measure	Emergency measures	Numeral
		leave as stated in the Traffic Law (No. 18,290). The contractor will implement a formal procedure to deal with traffic accidents that allow the emergency to be addressed in a timely manner, which remains inside each cargo vehicle. Drivers will be trained on the actions to be followed before a casualty in the route. Proper signage will be implemented in the construction area The weight of trucks loaded with equipment or materials shall not exceed the maximum permissible according to the routes/bridges being used. Otherwise, the corresponding permissions will be obtained from the direction of the roadway in each case. <u>Operation and closing stage</u> Ditto to the measures indicated for the construction phase.	persons and vehicles involved. The affected area shall be demarcated, prohibiting entry into the area of the accident. The area will be inspected by qualified personnel to verify the presence of injured persons. If this is the case, it will be transferred immediately to an assistance centre. Once the situation has been controlled, the road will be restored by providing equipment and machinery to help clear the route in the shortest term (once the responsible authority authorizes it). The insurance companies involved will be given timely notice. Timely information will be given to those in charge of the company. The accident will be recorded and reported in a previously defined form. A complete description of the response to the emergency will be made, collecting all the possible evidence, in order to make the corrections that the case warrants and improve the procedures. <u>Operation and closing stages</u> Ditto to the measures indicated for the construction phase.	
	Use of equipment and heavy machinery	<u>Construction stage</u> The contractor will implement a formal procedure for the operation that allows to safely take care of the driving and operation of machinery, which will remain inside each equipment. Operators and drivers will be trained in the actions to be followed in the event of an accident. Proper signage will be implemented in the construction area The operation of equipment shall not exceed the maximum permissible in accordance with the operating manual. A plan for the maintenance of equipment and machinery will be implemented. If any intervention of an archaeological site is detected, the work	<u>Construction stage</u> The field Chief will be informed of the accident. The emergency will be dimensioned The event will be classified (mild, serious, serious). The communications Plan will be activated if the situation is warranted by ambulance (131), firefighters (132) and Carabineros (133), reporting on the occurrence of the accident, its severity and the identification of the persons and vehicles involved. The affected area shall be demarcated, prohibiting entry into the area of the accident. The area will be inspected by qualified personnel to verify the presence of injured persons. If this is the case, it will be transferred	8.6.4 8.7.8

Type	Risk	Contingency prevention Measure	Emergency measures	Numeral
		must be stopped in that sector and informed to the authorities. The supervisor will be responsible for guarding the archaeological site under the same conditions as it was detected. <u>Operation and closing stage</u> Special actions are not envisaged during this stage except those established by law.	immediately to an assistance centre. Once the situation has been controlled, the road will be restored by providing equipment and machinery to help clear the route in the shortest term (once the responsible authority authorizes it). The insurance companies involved will be given timely notice. Timely information will be given to those in charge of the company. The accident will be recorded and reported in a previously defined form. A complete description of the response to the emergency will be made, collecting all the possible evidence, in order to make the corrections that the case warrants and improve the procedures. <u>Operation Stages and CLosure</u> Ditto to the measures indicated for the construction phase.	
Anthropic	Transport, storage, handling and use of explosives	<u>Transport safety measures</u> The faithful fulfillment of the Chilean standard NCH 383-of. 55 security measures in the storage of explosives. The faithful fulfillment of the Chilean standard NCh 392-of. 60 containers for the storage and transport of explosives and ammunition. The faithful fulfillment of the DS No. 83/2007, Ministry of National Defense, supplementary regulation of the law 17,798, on Control of weapons and similar elements. The respective signalling shall be installed in all areas where explosives are required to be handled. All the operations involving the use of explosives will be carried out by specialized personnel, and applying the requirements of the expert in risk prevention. Any vehicle for the transport of explosives shall be conducted by authorized personnel only. The driver of the explosives transport truck must be in possession of the explosives handling license per day issued by the relevant	<u>Emergency transport measures</u> The contractor will implement a formal procedure for the transport of explosives to ensure that this activity is safely addressed. If during the journey to the interior of the project area there is an emergency (Panne) the driver must first inform the head of the shift or whoever replaces it, about the situation. You must place triangles or cones to highlight the presence of the vehicle and should not leave the vehicle at any time until the assistance arrives. In the event of a fire in the explosive transport vehicle, the driver must give notice to the land chief. The portable fire extinguishers of the explosive transport vehicle should be used only if the engine or tyres are affected by the fires. If the fire affects the bodywork and spreads to the explosive load, the driver must immediately abandon the vehicle and give the voice of alarm. The area will be evacuated (minimum 500 meters) and access will be closed requesting the support of the land manager. Emergency handling measures The field Chief will be informed of the type of incident.	8.6.4 8.7.8

Type	Risk	Contingency prevention Measure	Emergency measures	Numeral
		service in this matter. The explosives transport vehicle must be in good mechanical condition, for which the supervisor will verify that the maintenance records are up to date. The driver must perform a daily check-list before taking the transport start. Every transport vehicle must have the following security implementation: 2 extinguishers of 10 kilos 4 Black/Yellow flags 2 side signs with "explosives" Legend (orange background with black letters) 20 X 80 cm. Electric Breaker Two ground chains Exhaust pipe covering with insulating material and spark arresting system. <u>Security measures handling</u> To operate with explosives, only duly instructed persons can be appointed and are enrolled as an explosives manipulator before the General Directorate of National Mobilization (DGMN). People who handle explosives must be aware of the responsibility they acquire and the care they must have in respecting the instructions they have received from the supervisor. Personnel carrying, handling and using explosives, smoking, carrying matches and artifacts that produce open flames or emit sparks or heat are strictly prohibited. It is prohibited to carry out any other activity outside the loading of explosives, less than 50 m from the place where the operation will be carried out. Only persons responsible for the blasting and control supervision may be present. The safety area must be properly marked with yellow black cones and signs with the legend "explosives, do not pass".	The emergency will be dimensioned The event will be classified (mild, serious, serious). The communications Plan will be activated if the situation is warranted by ambulance (131), firefighters (132) and Carabineros (133), reporting on the occurrence of the accident, its severity and the identification of the persons and vehicles involved. The affected area will be demarcated, prohibiting entry into the area. The area will be inspected by qualified personnel to verify the presence of injured persons. If this is the case, it will be transferred immediately to an assistance centre. The insurance companies involved will be given timely notice. Timely information will be given to those in charge of the company. The accident will be recorded and reported in a previously defined form. A complete description of the response to the emergency will be made, collecting all possible evidence, in order to make the corrections that the case warrants and improve the procedures <u>Emergency storage measures</u> In case of a fire inside the magazine, it should not be fought by the personnel of the magazine. These workers must be removed, the same as those in the vicinity and must be placed in a safe place, defined previously in the emergency procedure. The field Chief will be informed of the type of incident. The emergency will be dimensioned The event will be classified (mild, serious, serious). The communications Plan will be activated if the situation is warranted by ambulance (131), firefighters (132) and Carabineros (133), reporting on the occurrence of the accident, its severity and the identification of the persons and vehicles involved.	

Type	Risk	Contingency prevention Measure	Emergency measures	Numeral
		The contractor will implement a formal procedure for handling explosives to ensure that this activity is safely addressed. Security measures Storage The magazine must be authorized by the relevant authority in this matter, which will also be built with all the measures and conditions required by DS No. 83/2007, Ministry of National Defense, supplementary regulation of law No. 17,798, on Control of Weapons and similar elements. The magazine must remain closed, except when the explosives are stored or removed. Only the amount authorized by the auditing authority must be stored. It is forbidden to enter the installation of the magazine smoking, with matches, lighters, heating devices and any object that could produce sparks or heat In the explosive tank, a grounded copper bar must be maintained, so that people entering, discharge static electricity from your body and clothing. At the time of receiving explosives, the magazine must suspend all offices. The magazine must be kept permanently clean, both inside and outside. Tools used to open boxes and drawers must be made of wood or non-sparking materials or accumulate static electricity (wedges, decks, etc.). The magazine will be in charge of a person responsible for the movement of the explosives (reception, storage, delivery), who will have to take control in the authorized systems and registration forms, of all the elements delivered to his custody. Operation Stage The use of explosives in these two stages is not envisaged. Closing stage		

Type	Risk	Contingency prevention Measure	Emergency measures	Numeral
		The same precepts as in the construction stage will be observed.		
	Land movement	Construction stage The contractor will implement a formal procedure for the operation that allows to safely take care of the Earth's movement. The constituent will have a permanent topography team to control the different works to be executed. The escarpment and the geometry of the project Be Verified on site and dimensions for each layer of material to be removed or placed. Operators and drivers will be trained in the actions to be followed in the event of an accident. The signalling will be implemented for the marine and rubble collection areas. The operation of equipment shall not exceed the maximum permissible in accordance with the operating manual. A plan for the maintenance of equipment and machinery will be implemented. If any intervention of an archaeological site is detected, the work must be stopped in that sector and informed to the authorities. The supervisor will be responsible for guarding the archaeological site and will notify the management of the project, who will notify the CMN. Operation and closing stage During the operation and closing phase, it will include the indications in this area of the RCA.	Construction stage The field Chief will be informed of the accident. The emergency will be dimensioned Event will be classified accident (mild, serious and serious) The communications Plan will be activated if it is warranted by ambulance (131), firefighters (132) and Carabineros (133), reporting on the occurrence of the accident, its severity and the identification of the persons and vehicles involved. The affected area shall be demarcated, prohibiting entry into the area of the accident. The area will be inspected by qualified personnel to verify the presence of injured persons. If this is the case, it will be transferred immediately to an assistance centre. The insurance companies involved will be given timely notice. Timely information will be given to those in charge of the company. The accident will be recorded and reported in a previously defined form. A complete description of the response to the emergency will be made, collecting all the possible evidence, in order to make the corrections that the case warrants and improve the procedures. Operation Stage Special actions are not envisaged during this stage. Closing stage Ditto to the measures indicated for the construction phase.	8.6.4 8.7.8

Type	Risk	Contingency prevention Measure	Emergency measures	Numeral
	Dismantling of equipment	Closing stage The contractor will implement a formal procedure for the operation to ensure that the dismantling is safely addressed. Operators and drivers will be trained in the actions to be followed in the event of an accident. The operation of equipment shall not exceed the maximum permissible in accordance with the operating manual. A plan for the maintenance of equipment and machinery will be implemented. During the closing phase, the indications set out in this field shall be included in the RCA.	Closing stage The field Chief will be informed of the accident. The emergency will be dimensioned and the entire area will be demarcated with hard barriers, cones and persons who impede the entry of third parties. The accident event will be classified (severe and there are injuries to people) The communications Plan will be activated if it is warranted by ambulance (131), firefighters (132) and Carabineros (133), reporting on the occurrence of the accident, its severity and the identification of the persons and vehicles involved. The affected area shall be demarcated, prohibiting entry into the area of the accident. The area will be inspected by qualified personnel to verify the presence of injured persons. If this is the case, it will be transferred immediately to an assistance centre. The insurance companies involved will be given timely notice. Timely information will be given to those in charge of the company. The accident will be recorded and reported in a previously defined form. A complete description of the response to the emergency will be made, collecting all the possible evidence, in order to make the corrections that the case warrants and improve the procedures. During the closing phase, the indications set out in this field shall be included in the RCA.	8.6.4 8.7.8
	Immersion	Construction stage The contractor will implement a formal procedure for the operation that can safely serve a fall to the water. The principal will have rescue and resuscitation teams in case of emergencies. Operators and drivers will be trained in the actions to be followed in	Construction stage The field Chief will be informed of the accident. The emergency will be dimensioned Crash event will be classified (severe) The communications Plan will be activated if it is warranted by	8.6.4 8.7.8

Type	Risk	Contingency prevention Measure	Emergency measures	Numeral
		the event of an accident. The signalling will be implemented indicating the risk of immersion and its preventive measures. The operation of equipment shall not exceed the maximum permissible in accordance with the operating manual. Operation and closing stage During the operation and closing phase, it will include the indications in this area of the RCA.	ambulance (131), Marine Search and Rescue (137) and Carabineros (133), reporting on the occurrence of the accident, its severity and the identification of the persons and vehicles involved. The area will be inspected by qualified personnel to verify the presence of injured persons. If this is the case, it will be transferred immediately to a health care facility (Emergency Brigade). The insurance companies involved will be given timely notice. Timely information will be given to those in charge of the company. The accident will be recorded and reported in a previously defined form. A complete description of the response to the emergency will be made, collecting all the possible evidence, in order to make the corrections that the case warrants and improve the procedures. Operation Stage Special actions are not envisaged during this stage. Closing stage Ditto to the measures indicated for the construction phase	

16.1.6. Environmental Variables Monitoring Plan RElevations

Table 8 Chapter Environmental Variables Monitoring Plan RElevations

Environmental component	Environmental impact and associated measure	Location checkpoints	Parameters used	Limits allowed or committed	Duration and frequency	Method Of Measurement	ENtrega of reports	Organism	Numeral
Fauna	Involvement of the Oceanodroma Markhami nesting area	The monitoring sites will correspond to the North access road in the section near Caleta Rio Seco, site where the nesting site was discovered	The parameters to be monitored will be the presence of nests of Oceanodroma markhami or signs of nesting, such as remains of eggs, feathers, feces, in the north Access sector in the section near Caleta Rio Seco where clues were found in baseline. The information collected during the monitoring will be analyzed to avoid intervening in the activity of nesting of the species in the sector.	The receipt of 100% of the nests identified in the route.	The monitoring will be annual during all the years of the project's construction period, between July and December. At the end of the procedure it will be assessed according to the results obtained, and as indicated by the authority, if it is pertinent to continue with the follow-up during the operation phase	The study area will be searched for signs of nesting, such as feathers, feces, footprints and nests. Once identified, its occurrence will be spatially delimited and sampling quadrants of 6 m x 6 m will be carried out, in which eventual nests will be counted, following the methodology used by Torres-Mura & Lemus (2013).	An annual report will be sent to the SMA with copy to SAG with the monitoring report after 30 days of completion of the tour.	SMA with SAG copy	9.4.1 Table 9-1

Environmental component	Environmental impact and associated measure	Location checkpoints	Parameters used	Limits allowed or committed	Duration and frequency	Method Of Measurement	ENtrega of reports	Organism	Numeral
Archaeology	Archaeological sites Intervention	The installation of signage and fencing will be carried out on the following findings 6, 11, 12, 13, 16, 17, 22 and 23	Presence of signage at each control point and conservation status of the same	Maintain and replenish the total of the information and backup signage installed	The inspection of the specialists will take place once a month during the entire construction phase.	Visual inspection and photographic registration will be carried out with monitoring reports, with respect to the state of conservation of the signage. In case of repositioning of signage, the action will be recorded in the report.	A monthly report will be made of the state of the signage which will be sent once a year to the SMA with copy to CMN during the construction phase of the project.	SMA with Copy Cmn	9.4.2. Table 9-2
Archaeology	Intervention of archaeological sites. Archaeological Management Plan	The management Plan will be applied to the site number 19	Archaeological rescue Transfer	In case of collection, rescue and transfer: 80% of the material remains original state.	The follow-up of those findings that derive from the CMN or another that the agency has will be carried out once the measure has been completed.	For the collection, rescue and transfer a professional archaeologist specialist in the subject will review the final state of the finding compared to the state defined in the baseline.	Only report with results and final destination proof of the raised materials sent to the SMA with copy to CMN 30 days after the materials have final destination	SMA with CMN copy	9.4.1. Table 9-3

Environmental component	Environmental impact and associated measure	Location checkpoints	Parameters used	Limits allowed or committed	Duration and frequency	Method Of Measurement	ENtrega of reports	Organism	Numeral
Archaeology	Archaeological sites Intervention	On the archaeological findings detected in the baseline of the project In any new archaeological finds In areas where excavations and/or earth movements are carried out.	Conservation status of each archaeological site registered on the baseline Existence of new archaeological finds	The non-alteration of the identified sites is compromised and when it is not possible, a rescue proposal will be made to the CMN.	The inspection of the specialists in protected historical and cultural heritage will be carried out monthly, while excavation and ground preparation activities are undertaken for the installation of the project's works. In the case of the progress register of works involving excavations, this will be carried out daily by the personnel of the work.	Professional archaeologist and staff of the work, coordinate a monitoring which will be through visual inspection at the checkpoints.	Quarterly reports will be prepared, That will be compiled in an annual report that will be sent to the SMA with copy to CMN after 60 days of elaboration of the last quarterly report. If the presence of archaeological contexts is recorded during the excavation or earthmoving activities, it will be communicated within 10 days, by means of a report to the Council of National Monuments.	SMA with CMN copy	9.4.1. Table 9-4

Environmental component	Environmental impact and associated measure	Location checkpoints	Parameters used	Limits allowed or committed	Duration and frequency	Method Of Measurement	ENtrega of reports	Organism	Numeral
Paleontology	Partial intervention of fossil levels	• Remainders of Quaternary terrestrial gastropods in levels of the high hospice gravels: a) 385964 E, 7666096 S; b) 383793 E, 7665886 S; c) 386055 E, 7665878 S; d) 381749m E, 7677978 S. • Remains of Quaternary marine invertebrates presumably from the so-called littoral deposits: E) 389880 E, 7665930 S; f) 383971 E, 7665991 S; g) 383793 E, 7665886 S; h) 380425 E, 7678207 S; i) 380376 E, 7678067 S; j) 380159 E, 7672120 S. indicated on the baseline.	Paleontological Rescue	It will avoid the affectation of the paleontological sites	The rescue of the paleontological patrimony will be carried out before the beginning of the execution of the construction works that affect them.	Professional paleontologist and of the work, coordinate a monitoring which will be through visual inspection at the checkpoints.	A single rescue report that includes the treatment and specific management of objects of paleontological character, in consideration of all the environmental regulations in force in Chile and the contextualisation of the findings in the taxonomic and stratigraphic field, within The 90 days after the rescue was done. The report will be sent to the SMA with a copy to the CMN.	SMA with CMN copy	9.4.1. Table 9-5

Environmental component	Environmental impact and associated measure	Location checkpoints	Parameters used	Limits allowed or committed	Duration and frequency	Method Of Measurement	ENtrega of reports	Organism	Numeral
Water quality	Alteration of the quality of the sea waters. ASP1 points to the ASP10 characterized in baseline (see Appendix 9.1 of the EIA)	ASP1 points to the ASP10 characterized in baseline (see Appendix 9.1 of the EIA)	Chlorophyll "a", total hydrocarbons, fats and oil, turbidity, transparency, conductivity, sedimentable solids, total suspended solids, PH, sulphates, chloride, total organic matter, BOD5, alkalinity, fecal coliforms, chromium, nickel, iron, Lead, arsenic, mercury, selenium, cadmium, manganese, vanadium and zinc. Profiles of temperature, salinity and dissolved oxygen	The results will be analyzed with those obtained during the baseline at the same sampling stations. With the exception of the construction of the underwater work whose activities will be limited and punctual, during the construction phase no significant or measurable impacts are expected so they do not compromise limits.	Semester during construction	Direct sampling with Niskin bottles at surface level and background for temperature, salinity and dissolved oxygen profiles the measurement will be direct with French probe	Every six months, 30 days after sampling. The report will be sent to the SMA with copy to Sernapesca and Maritime Governorate.	SMA with Copy to Sernapesca and Maritime Governorate.	9.5.1. Table 9-6

Environmental component	Environmental impact and associated measure	Location checkpoints	Parameters used	Limits allowed or committed	Duration and frequency	Method Of Measurement	ENtrega of reports	Organism	Numeral
Subtidal Sediment Quality	Alteration of the physical chemical properties of marine sediments	ASP1 points to the ASP10 characterized in baseline	Chromium, nickel, iron, lead, arsenic, mercury, selenium, cadmium, manganese, vanadium and zinc, sulfate, redox potential, organic matter and particle size	The results will be analyzed with those obtained during the baseline at the same sampling stations. With the exception of the construction of the underwater work whose activities will be limited and punctual, during the construction phase no significant or measurable impacts are expected so they do not compromise limits.	Semester during construction	Dredger Van Veen and/or semi-autonomous scuba diving	Every six months, 30 days after sampling. The report will be sent to the SMA with copy to Sernapesca and Maritime Governorate.	SMA with Copy to Sernapesca and Maritime Governorate.	9.5.1. Table 9-7

Environmental component	Environmental impact and associated measure	Location checkpoints	Parameters used	Limits allowed or committed	Duration and frequency	Method Of Measurement	ENtrega of reports	Organism	Numeral
intertidal sediment Quality	Alteration of the physical chemical properties of marine sediments.	intertidal stations Soft bottom: II1 to II8	Chromium, nickel, iron, lead, arsenic, mercury, selenium, cadmium, manganese, vanadium and zinc, sulfate, redox potential, organic matter and particle size	The results will be analyzed with those obtained during the baseline at the same sampling stations. With the exception of the construction of the underwater work whose activities will be limited and punctual, during the construction phase no significant or measurable impacts are expected so they do not compromise limits.	Semester during construction	Dredger Van Veen and/or semi-autonomous scuba diving	Every six months, 30 days after sampling. The report will be sent to the SMA with copy to Sernapesca and Maritime Governorate.	SMA with Copy to Sernapesca and Maritime Governorate.	9.5.1. Table 9-8

Environmental component	Environmental impact and associated measure	Location checkpoints	Parameters used	Limits allowed or committed	Duration and frequency	Method Of Measurement	ENtrega of reports	Organism	Numeral
Benthic communities	Alteration of benthic communities (Intertidal hard-bottom epibiota, soft-bottomed intertidal polybentos, subtidal background Epibiota, Ichthyofaunay, subtidal Sedimentary-fund fauna)	Subtidal Hard Bottom: es-2 to ES-7, plus two control stations (ES-CN and ES-CS). Soft-bottom intertidal: II1 to II8. Rocky intertidal: ID-1 to ID-6, plus control stations ID-CN and ID-CS. Subtidal infauna: ASP-1 to ASP-10.	Ecological indices (Specific diversity, equity indices and species richnesses). Estimation of the AMBI index (AZTI's Marine BioticIndex, Borja et al. 2012). ABC curves. Analysis of classification by stations (cluster) and analysis of sorting by stations.	The results will be analyzed with those obtained during the baseline at the same sampling stations. With the exception of the construction of the underwater work whose activities will be limited and punctual, during the construction phase no significant or measurable impacts are expected so they do not compromise limits.	Semester during construction	Subtidal environment: dredger Van Veen and semi-autonomous diving intertidal environment: Direct evaluation.	Every six months, 30 days after sampling. The report will be sent to the SMA with copy to Sernapesca and Maritime Governorate.	SMA with Copy to Sernapesca and Maritime Governorate.	9.5.1 Table 9-9

Environmental component	Environmental impact and associated measure	Location checkpoints	Parameters used	Limits allowed or committed	Duration and frequency	Method Of Measurement	ENtrega of reports	Organism	Numeral
Planktonic communities	Planktonic Biomass loss	1 (Start transect 1) 2 (end Transect 1) 3 (Start Transect 2) 4 (End Transect 2) 5 (Start Transect 3) 6 (end Transect 3) 7 (Start Transect 4) 8 (end Transect 4) 9 (Start transect 5) 10 (end Transect 5) 11 (Start transect 6) 12 (Fin transect 6)	**Planktonic Communities:** Phytoplankton composition and Abundance Variability in vertical distribution Diversity **Zooplankton (includes Ichthyoplankton)** Richness of species or number of taxa, numerical abountiful, specific diversity, uniformity of Pielou, analysis of hierarchical classification using the index of similarity Bray-Curtis as coefficient of Community association	The results will be analyzed with those obtained during the baseline at the same sampling stations. With the exception of the construction of the underwater work whose activities will be limited and punctual, during the construction phase no significant or measurable impacts are expected so they do not compromise limits.	Semester during construction	Niskin bottles and Fito and zoo nets, superficial and background	Every six months, 30 days after sampling. The report will be sent to the SMA with copy to Sernapesca and Maritime Governorate.	SMA with Copy to Sernapesca and Maritime Governorate.	9.5.1 Table 9-10

Environmental component	Environmental impact and associated measure	Location checkpoints	Parameters used	Limits allowed or committed	Duration and frequency	Method Of Measurement	ENtrega of reports	Organism	Numeral
Water quality	Alteration of the quality of the sea waters	Stations arranged by circling the discharge in a radial sampling approximately 10 and 50 meters from the discharge focus	Temperature/Dissolved oxygen	The results will be compared with those obtained during the baseline and the construction stage at the same sampling stations. A range of variation will be tolerated as observed in the marine environment prior to operation. The relevant parameters were compared with table 5 of the DS 90/2000 of MINSEGPRES.	Quarterly during the first 2 years of the operation phase. Semiannually during the remainder of the operation	Direct measurement French probe	Every six months, 30 days after sampling. The report will be sent to the SMA with copy to Sernapesca and Maritime Governorate.	SMA with Copy to Sernapesca and Maritime Governorate.	9.5.1 Table 9-11
Water quality	Alteration of the quality of the sea waters	The pen approximation vector will be established by following 3 Lagrangian shunt elements released at the discharge point at a depth similar to that of the intake	Direction of the current at the point of discharge to the marine receiver body.	The results will be compared with those obtained during the baseline at the same sampling stations.	Quarterly during the first 2 years of the operation phase. Semiannually during the remainder of the operation	Lagrangian shunts	Every six months, 30 days after sampling. The report will be sent to the SMA with copy to Sernapesca and Maritime Governorate.	SMA with Copy to Sernapesca and Maritime Governorate.	9.5.1 Table 9-12

Environmental component	Environmental impact and associated measure	Location checkpoints	Parameters used	Limits allowed or committed	Duration and frequency	Method Of Measurement	ENtrega of reports	Organism	Numeral
Water quality	Alteration of the quality of the sea waters	ASP1 points to the ASP10 characterized in baseline	Chlorophyll "A", Feopigmentos, nitrate, nitrite, phosphate, total hydrocarbons, fats and oil, turbidity, transparency, conductivity, sedimentable solids, total suspended solids, residual free chlorine, PH, sulphates, chloride, total organic matter, BOD5, alkalinity, fecal coliforms, chromium, nickel, iron, lead, arsenic, mercury, selenium, cadmium, manganese, vanadium and zinc. Profiles of temperature, salinity and dissolved oxygen	The results will be compared with those obtained during the baseline and the construction stage at the same sampling stations. A range of variation will be tolerated as observed in the marine environment prior to operation. The relevant parameters were compared with table 5 of the DS 90/2000 of MINSEGPRES.	Quarterly during the first 2 years of the operation phase. Semiannually during the remainder of the operation.	Direct sampling with Niskin bottles at surface level and background for temperature, salinity and dissolved oxygen profiles the measurement will be direct with French probe	Every six months, 30 days after sampling. The report will be sent to the SMA with copy to Sernapesca and Maritime Governorate.	SMA with Copy to Sernapesca and Maritime Governorate.	9.5.1 Table 9-13

Environmental component	Environmental impact and associated measure	Location checkpoints	Parameters used	Limits allowed or committed	Duration and frequency	Method Of Measurement	ENtrega of reports	Organism	Numeral
Subtidal Sediment Quality	Alteration of the physical chemical properties of marine sediments.	ASP1 points to the ASP10 Characterised in baseline	Chromium, nickel, iron, lead, arsenic, mercury, selenium, cadmium, manganese, vanadium and zinc, sulfate, Redox potential, organic matter and particle size	The results will be compared with those obtained during the baseline and the construction stage at the same sampling stations. A range of variation will be tolerated as observed in the marine environment prior to operation.	Quarterly during the first 2 years of the operation phase. Semiannually during the remainder of the operation.	Dredger Van Veen and/or semi-autonomous scuba diving	Every six months, 30 days after sampling. The report will be sent to the SMA with copy to Sernapesca and Maritime Governorate.	SMA with Copy to Sernapesca and Maritime Governorate.	9.5.1 Table 9-14
intertidal sediment Quality	Alteration of the physical chemical properties of marine sediments.	intertidal stations Soft bottom: II1 to II8.	Chromium, nickel, iron, lead, arsenic, mercury, selenium, cadmium, manganese, vanadium and zinc, sulfate, Redox potential, organic matter and particle size	The results will be compared with those obtained during the baseline and the construction stage at the same sampling stations. A range of variation will be tolerated as observed in the marine environment prior to operation.	Quarterly during the first 2 years of the operation phase. Semiannually during the remainder of the operation.	Dredger Van Veen and/or semi-autonomous scuba diving	Every six months, 30 days after sampling. The report will be sent to the SMA with copy to Sernapesca and Maritime Governorate.	SMA with Copy to Sernapesca and Maritime Governorate.	9.5.1 Table 9-15

Environmental component	Environmental impact and associated measure	Location checkpoints	Parameters used	Limits allowed or committed	Duration and frequency	Method Of Measurement	ENtrega of reports	Organism	Numeral
Benthic communities	Alteration of benthic communities (Intertidal hard-bottom epibiota, soft-bottomed intertidal polybentos, subtidal background Epibiota, Ichthyofaunay, subtidal Sedimentary-fund fauna)	Subtidal Hard Bottom: es-2 to ES-7, plus two control stations (ES-CN and ES-CS). Soft-bottom intertidal: II1 to II8. Rocky intertidal: ID-1 to ID-6, plus control stations ID-CN and ID-CS. Subtidal infauna: ASP-1 to ASP-10.	Ecological indices (Specific diversity, equity indices and species richnesses). Estimation of the AMBI index (AZTI's Marine BioticIndex, Borja et al. 2012). ABC curves. Analysis of classification by stations (cluster) and analysis of sorting by stations.	The results will be compared with those obtained during the baseline and the construction stage at the same sampling stations. A range of variation will be tolerated as observed in the marine environment prior to operation.	Quarterly during the first 2 years of the operation phase. Semiannually during the remainder of the operation.	Subtidal environment: dredger Van Veen and semi-autonomous diving intertidal environment: Direct evaluation.	Every six months, 30 days after sampling. The report will be sent to the SMA with copy to Sernapesca and Maritime Governorate.	SMA with Copy to Sernapesca and Maritime Governorate.	9.5.1 Table 9-16

Source: Self-elaboration

16.1.7. Plan of Compliance with the LEgislación ToMbiental ToApplicable

Table 9. Chapter Rules of CArácter GEneral ToApplicable to Proejct

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
Political Constitution of the Republic of Chile				
The Constitution of the Republic (CPR) guarantees all people the right to live in a pollution-free environment and imposes as a duty to the State to ensure that this right is not affected, as well as to protect the preservation of nature. Additionally, it empowers the law to establish specific restrictions on the exercise of certain rights or freedoms to protect the environment. On the other hand, it guarantees the right of ownership, the freedom to acquire all kinds of goods, the right to develop any lawful economic activity,	The bodies of the State administration with environmental competence will evaluate the project "Espejo de Tarapacá" in all the aspects mentioned here and in each of its phases, fulfilling the mandate of the constituent enshrined in article 19 No. 8.	The constitutional guarantee is respected by the fulfillment of the current environmental legislation that requires the entry of the project to the SEIA, and the recognition of the institutionality created for the effect. In this sense, when submitting the project to the SEIA is fulfilled with the stated obligations, because the State, in use of its powers and through the organs of the administration of it, with competence in the matter, will evaluate the project environmentally, ensuring Because the right to live in a pollution-free environment is not affected.	All the stages of the project.	10.1.1
Law n ° 19,300				
L(a) Law No. 19,300 on the general environment and its modification by Law No. 20,417 establishes common basic principles in the field of environmental protection; It incorporates environmental management tools through which it is intended to make such protection effective and to promote sustainable development in the country, and enshrines the existing environmental institutionality. In accordance with article 9, the holder of any of those projects or activities referred to in	The project It consists of a reversible, pumping-generating hydroelectric plant in the coastal sector of Caleta San Marcos, about 100 kilometres south of the city of Iquique. The project under evaluation is of those listed in article 10 of the law in Comment, literals B) and C. *Letter B) "High voltage power transmission lines and their substations"* *Letter C) "Power generating plants*	The project holder complies with the requirements of Law No. 19,300, by entering the environmental assessment System (SEIA) through this EIA. In turn, entry into the SEIA is intended to evaluate its impact prior to its implementation, as provided in article 8. As for the compliance indicator, the latter will be the RCA, proceeding Espejo de Tarapacá The SpA, as stipulated in it, allowing the state to control and thus ensure that the right to live in a pollution-free environment is not affected	All phases of the project.	10.1.1

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
article 10, must submit an environmental impact statement (DIA) or an environmental impact study (EIA) to the Commission established in the Article 86 (Evaluation Committee) or to the executive Director of the Environmental assessment Service, depending on whether the project develops or causes impacts on the environment within the territory of a region or in areas located in different regions, Respectively.	*greater than 3 MW"*			
Supreme Decree No 40/2013 of the Ministry of the Environment; Environmental impact Assessment System regulation				
Details the effects generated by article 11 of Law No. 19,300; It regulates the environmental impact assessment procedure and incorporates rules that enhance community participation. In addition, it introduces rules that permit the application of institutions of Law No. 19,300, created by Law No. 20,417, such as the expiration of the RCA.	The project must enter the SEIA under article 3 (b) and C). In addition, the entrance route corresponds to an EIA, so the integrity of the regulations of this regulatory body referred to the EIA Are Applicable.	The owner of the project is within the typologies that require compulsory entry to the SEIA. In addition, it generates effects whose prediction and evaluation, as laid down in articles 6 to 10 of the regulation, require the presentation of an environmental impact study. The EIA presented by Espejo de Tarapacá SpA, is responsible for these effects, through the measures described in Article 97 and following. All of the above, with the intention of submitting the project to the evaluation and environmental qualification in the SEIA, with a view to obtaining a favorable environmental qualification resolution. With respect to the compliance indicator, the latter will be the RCA, proceeding Espejo de Tarapacá The SpA as stipulated in it, allowing the state to control and thus ensure that the right to live in a pollution-free environment is not affected.	All phases of the project.	10.1.1
Resolution n ° 1518, fixed recast, coordinated and systematized text of resolution N ° 574 of 2012. Requires information to project holders with favorable environmental qualification resolution; Instructing form and presentation mode.				

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
In order to facilitate the control, the holder has the obligation to inform the virtual platform of the Superintendence of the environment, the antecedents related to the individualization of the owner and legal representative of the project As well as the form of income and the state of execution thereof, among other antecedents.	The holder makes the entry to the SEIA in order to comply with the environmental regulations in force, as well as the voluntary environmental commitments, conditions and measures under which he is responsible for the significant environmental impact. Compliance with the foregoing is manifested through the certification and operating authorization that the RCA represents. Therefore, once this is obtained, it will be fulfilled with its burden within the legal period.	To obtain favorable RCA, it will carry out the load on platform Http://snifa.sma.gob.cl/SistemaRCA Within 15 working days, counted from the date of notification. The compliance indicator, understood as a means of verification, is constituted by the registry which gives the platform prepared for such effects by the Superintendence of the environment as proof.	All phases of the project.	10.1.1
Beef. N º 844 of December 14, 2012, of the Superintendence of the environment, dictates and instructs general norms on the referral of the conditions, commitments and measures established in the environmental qualification resolutions. Amended by Resolution No. 690 of 7 July 2013 of the SMA				
The resolution obliges the holder of all RCA, the load to the monitoring system administered by the Superintendence of environment, of all that information that says relation with the result of favorable RCA, and by which the qualification body has imposed conditions, commitments or measures, through one of the following instruments: • Monitoring System. • Measurement activities. • Analysis activities. • Emissions report Reports. • Studies and/or audits. • Fulfillment of goals and/or deadlines.	In case of failure to comply with the obligation to send a background or, its renewal according to the frequency prescribed in the RCA; The proprietor commits the infringements of the articles 35 literals a) and e) (breach of rules established in the RCA and breach of norms and general instructions that the SMA imparts) making proceeds of the sanctions of the article 36 n º 1 literal D and N º 2 literal G , namely serious infringements and serious infringements respectively.	To obtain favorable RCA, the reports of monitoring, reports, analyses and measurements will be sent according to the frequency prescribed by the RCA itself. The compliance indicator, understood as a means of verification, is constituted by the registry which gives the virtual platform prepared for such effects by the Superintendence of the environment as proof.	All phases of the project.	10.1.1

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
The amendment imposed by resolution No. 690 of 2013, eliminates the obligation of the owner or legal representative of the project, to submit materially the certificate thrown after the load. Hereinafter, this receipt must be retained by the holder in his/her offices for the relevant purposes.				

Source: Self-elaboration

Table 10. Normative chapter of CArácter ESpecífico ToApplicable to Proejct. Air.

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
Supreme Decree No. 144 of 1961, of the Ministry of Health, establishes standard to prevent atmospheric pollutants of any kind				
This decree contains a general mandate in stating in article 1 that "gases, vapours, fumes, dust, fumes or contaminants of any kind, produced in any manufacturing establishment or place of work, shall be collected or eliminated in So that they do not cause dangers, damage or inconvenience to the neighborhood. " In addition, it determines the various attributions of the National Health Service, which is currently a health care, to control air pollution.	During the construction stage there will be emissions of particulate matter, product of the installation of operations, cleaning and clearance of land, movement of land, fillings, construction of patios and accesses, transport of materials, equipment and borrowing. On the other hand, during the operation phase, gases will be emitted mainly oxides of nitrogen (NOx), carbon dioxide (CO2), vapour of water as well as to a lesser extent particulate matter and sulphur dioxide (SO2), product of the circulation of vehicles.	The project has incorporated emission control measures in its design, which allows to adequately mitigate the impacts of the construction and operation of the project. The particulate matter emitted during the construction phase by lifting of dust in roads and operations will be mitigated by irrigation, in addition it will be moistened in the processes of mixing and transfer of materials. Truck bodies will be sealed to prevent material falling. Short-wind nets will be used in the operations. The atmospheric emissions generated in the combustion engines will be minimised by a rigorous maintenance of the equipment, which They'll have their licenses up to date. During the phase of operation of the project the emissions to the atmosphere correspond to gases product of the circulation of vehicles. To mitigate this effect, vehicle displacement	All the stages of the project.	10.2.1

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
		speeds will be restricted and required to maintain technical revisions per day.		
DS No. 20. Establishes primary quality standard for breathable particulate matter MP-10, in particular of the values that define emergencies.				
It regulates the environmental standard, in relation to the life and health of the population, for air quality with respect to breathable particulate matter (MP10), setting as limit 120 µg/m3N As a concentration of 24 hrs. and 50 mg/M3N as annual concentration. It also defines the levels that determine the environmental emergencies, according to the forecasting and measurement methodologies that indicate.	During the construction phase of the project, low magnitude atmospheric emissions will be generated due to excavation work, ground leveling, internal machinery operation, loading and unloading of materials, among others. During the operation phase, emissions from vehicle circulation will be generated, as described in Chapter 1.	The main fixed sources of the project will have emission abatement system, as described for each process of the operation phase in this EIA. In addition, the project will offset its emissions from MP and NOx, leading to a net emission reduction in the Tarapacá region. However, it is necessary to specify the validity of the standard in comment, since its Article 1 transitional establishes that without prejudice to the repeal of the old norm regulating the matter, namely D. S 59/98 MINSEGPRES, the latter will remain in force for 3 years as a primary standard Annual. Therefore, during this period, the fulfillment of the D. S 59/98 as well as its parameters and cases in which it is understood surpassed, apply until December 13, 2016, date from which it will govern in fullness the D. s n ° 20/2013.	All the stages of the project.	10.2.1
DS No. 12. Primary environmental quality standard for breathable fine particulate matter MP 2.5.				
Establishes primary air quality standard for the breathable particulate matter contaminant MP 2.5. The standard Sets Twenty micrograms per cubic metre (20 M G/m3), as annual concentration, and fifty micrograms per cubic metre (50 M g/m3), as a concentration of 24 hours.	During the construction and operation stage emissions are generated into the atmosphere as a result of the combustion of fossil fuels. During the Construction stage This will happen by the use of machinery and auxiliary equipment.	The project has incorporated emission control measures into its design, which allows to adequately control the Impacts of the construction and operation of the project. It is considered the humidification of roads during the entire construction. In addition, engines and machinery will be periodically revised and adjusted to minimize emissions generated by incomplete and	All stages of the Project.	10.2.1

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
		inefficient combustion. In annex N ° 1.5 The project's emission estimation is presented, which concludes that the project does not significantly affect air quality due to its particulate matter emissions.		
Supreme Decree No. 114, of 2003, of the Ministry General secretariat of the Presidency, published in the Official Journal of March 6, 2003. That establishes primary quality standard for nitrogen dioxide (NO2)				
This regulation aims to protect the health of the population from the acute and chronic effects generated by exposure to levels of concentration of DNitrogen lóxido in the air.	The project will generate gas emissions mainly due to the use of machinery and the associated vehicular flow.	The holder will comply with this regulation, seeking to carry out adequate maintenance to equipment, machinery and vehicles to be used during the construction and operation stage, so as to minimise atmospheric emissions. Such activities will have a duly updated record.	All the stages of the project.	10.2.1
Supreme Decree No. 115, of 2003, of the Ministry General secretariat of the Presidency, published in the Official Journal of March 6, 2003. Establishing primary quality standard for carbon monoxide (CO)				
This regulation aims to protect the health of the population from the acute and chronic effects generated by exposure to concentration levels of Carbon monoxide in the air.	The project will generate gas emissions mainly due to the use of machinery and the associated vehicular flow.	The holder will comply with this regulation, seeking to carry out adequate maintenance to equipment, machinery and vehicles to be used during the construction and operation stage, so as to minimise atmospheric emissions. Of such activities will be a record Duly updated. E(l) Constitutes the means of verification. This indicator will be available to the auditing authority.	All phases of the project.	10.2.1
DS No. 113. Establishes air quality standard for sulphur dioxide (so_2)				
It establishes primary quality standard of air quality for sulphur dioxide, as an annual concentration will be 31 PPBV (80 M g/M3N).	The project during its operation phase will emit sulphur dioxide (SO_2), in the case of operating with fuel Diesel.	According to the evaluation of the impactn air quality during the operation of the project Espejo de Tarapacá in its different parts, the	All phases of the project	10.2.1

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
		maximum concentrations expected for each of the exposure times were estimated according to the standards set by the Air quality regulations. The estimated effects indicate that air quality standards will not be exceeded in any case, so it is not necessary to establish compliance actions at this point.		
DS No. 185. Regulates the functioning of sulphur dioxide, particulate matter and arsenic issuing establishments throughout the territory of the Republic.				
Regulates the functioning of sulphur dioxide issuing establishments (SO_2), particulate matter (MP 10) and arsenic throughout the territory of the Republic and establishes secondary standard of air quality for sulphur dioxide (so_2). It also establishes secondary air quality standards for$_2$, as annual concentration of 80 M g/M3N, daily, 365 M g/M3N and time 1,000 M g/M3N.	The project will generate atmospheric emissions of particulate matter and SO_2 During the operation. In terms of OS emissions$_2$, by the amount generated does not qualify within the regulated establishments, however if it does so by the amount of particulate matter generated.	According to the evaluation of the impactn air quality during the operation of the project Espejo de Tarapacá in its different parts, the maximum concentrations expected for each of the exposure times were estimated according to the standards set by the Air quality regulations of particulate matter, both for the coarse MP10 portion and that fine fraction MP2, 5. The estimated effects indicate that air quality complies with both quality standards. The project is not in a saturated area.	All phases of the project	10.2.1
D.s. N ° 4, of 1994, of the Ministry of Transport and Telecommunications. Establishes emission standards of pollutants applicable to motor vehicles and fixes procedures for their control.				
This decree establishes emission rules for the exhaust pipe of pollutants applicable to motor vehicles and fixes the procedures for its control.	The project considers the use of motor vehicles during all its phases, which due to their transit will generate emissions to the atmosphere.	The emission standards will be complied with and all motor vehicles involved in the development of the project, during all phases, shall be required to comply with these standards, which shall be verified by the certificate of technical review and gases per day. In addition, the holder shall require that the	All phases of the project	10.2.1

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
		transport of bulk materials by urban areas be carried out with the loading section of the trucks covered with tarps, in order to prevent the dispersion of dust and the runoff of materials.		
DS N º 75/1987 of the Ministry of Transport and Telecommunications. It establishes conditions for the transport of loads indicating.				
It establishes conditions for the transport of loads as well as handling measures aimed at avoiding dust emissions.	The project contemplates the transport of materials during their phases.	The emission standards shall be complied with and all motor vehicles involved in the development of the project, during all stages, shall be required to comply with these standards, which shall be verified by the technical and gas inspection certificate. In addition, the holder shall require that the transport of bulk materials by urban areas be carried out with the loading section of the trucks covered with tarps, in order to prevent the dispersion of dust and the runoff of materials.	All phases of the project	10.2.1
D.s. No. 54. Standard for medium motor vehicles indicating.				
Establishes rules on technical characteristics of engines to meet maximum levels of emission of carbon monoxide, total hydrocarbons, Oxides of nitrogen and particulate matter.	The project will generate transit of vehicles in all its phases, which due to their transit will generate emissions into the atmosphere.	The project holder will require that motor vehicles to be used in the project and are registered in the National Register of Motor vehicles, must have their respective technical reviews per day, signs and badges that prove compliance with the standard. Those who do not carry it will not be admitted to the play. For verification purposes, an updated record will be carried out whose tuition corresponds to the site manager. In this, the license plate of the authorized vehicles shall be indicated in accordance with the preceding paragraph.	All phases of the Project	10.2.1

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
D.s. n ° 55, of 1994, of the Ministry of Transport and Telecommunications. Standard for heavy motor vehicles indicating.				
This decree establishes emission rules for the exhaust pipe of pollutants applicable to heavy motor vehicles. Establishes that heavy motor vehicles, whose first registration in the National Registry of Motor Vehicles of the Civil registration and identification Service, is requested to count on September 1, 1994, may only circulate in the metropolitan region , and other regions which establishes the decree, if they are; (i) mechanically fit to comply with the emission standards set out in article 4 ° for Carbon monoxide (CO) pollutants, hydrocarbons tSuch (HC), oxides of nitrogen (NOx), and particulate matter (MP) and (ii) if, with the opportunity of its technical revisions it is credited that it is in suitable conditions to circulate.	For the construction phase of the project is considered the use of motor vehicles, trucks, generators and machinery. During the operation stage during the maintenance work of the power line, trucks and a truck will be used a month.	The project holder will require heavy vehicles toE will be used in the project, are registered in the National Motor Vehicle Registry, have their respective technical reviews per day, signs and badges that prove compliance with the standard. Those who do not carry it will not be admitted to the play. For verification purposes, an updated record will be carried out whose tuition corresponds to the site manager. In this, the license plate of the authorized vehicles shall be indicated in accordance with the preceding paragraph.	All phases of the project	10.2.1
DS No. 138. It establishes an obligation to declare emissions indicating.				
This standard establishes the obligation of all holders of fixed sources of atmospheric pollutants as laid down in this Decree (PTS, MP10, CO, NOx, SOx, COV, NH3, benzene, toluene) to deliver to the Regional Secretariat Ministry of competent health of the place where they are located, the necessary antecedents to estimate the emissions from each one of their sources. They shall be affected by the obligation to provide the background for the determination of the emission of pollutants, the fixed sources listed in article 2.	The project considers the installation and use of generators.	The holder shall declare such emissions annually, through the PRTR system of the Ministry of the Environment, web portal of entry to the various sectoral systems of Declaration in force. The compliance indicator, understood as a means of verification, is constituted by the Register of declaration associated with the designated portal.	All phases of the project	10.2.1

Source: Self-elaboration

Table 11. Normative chapter of CArácter ESpecífico ToApplicable to Proejct. Waste LÍquidos.

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
DS No. 594. Regulation on basic sanitary and environmental conditions at workplaces.				
The wide range of aspects regulated by the decree in question is related to the sanitary and environmental conditions in the workplace. However, according to the application guide of the DS 594 in the SEIA, articles 16, 17, 18, 19, 20, 24 sub-paragraph, 26 and 42 should be considered as environmental regulations applicable to the projects and activities submitted to the SEIA.	During the construction phase, service water treatment plants (PTAS) will be used for the camp, the facilities associated with the Control building and the facility of operations located in the reservoir. Exceptionally, it is envisaged the use of chemical baths during this phase only in working fronts associated to the electric transmission line, as is realized in Chapter 1 of the EIA. On the other hand, in the operation phase, of the 3 PTAS designed for the construction mentioned above, only the one envisaged for the Control building will be operative, as described in Chapter 1 of the EIA.	by contractual clauses, i.e. contract as a means of verification, the supplier of the chemical baths will be responsible for carrying out all the necessary steps to guarantee the sanitary sanitation of the area where they were placed. With respect to PTAS, this EIA provides the background for the granting of PAS 138, which describes the technical environmental characteristics of wastewater management and the functioning of plants. Once the RCA is obtained favorable, it will proceed to the sectoral processing of the permit before the health care.	All Phases of the project.	10.2.2
DS No. 90. Emission standard for the regulation of pollutants associated with the discharges of liquid waste to shallow marine and continental waters.				
It has as its objective of environmental protection to prevent the pollution of the superficial marine and continental waters of the Republic, by means of the control of pollutants associated to the liquid waste that are discharged to these receiving bodies. It establishes the maximum contaminant concentration allowed for liquid wastes discharged by the issuing sources, to the superficial marine and continental water bodies of the Republic of Chile.	The project will carry out a discharge of seawater from the desalination of the sea, outside the coastal protection zone, as is realized in Chapter 1 of the EIA.	The discharge of water from the desalination plant shall comply with the maximum concentration limits set out in table 5 of the standard under analysis, as reported in Chapter 1 of the EIA. The project's environmental monitoring Plan provides monitoring measures whose reporting and compliance will enable accreditation on-site compliance.	All Phases of the project.	10.2.2

Source: Self-elaboration

Table 12. Normative chapter of CArácter ESpecífico ToApplicable to Proejct. Water QOtable and ToGua SErvida.

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
NCh N ° 409/1 of 2005 del INN. Chilean standard of drinking water.				
Establishes the requirements of physical, chemical, radioactive and bacteriological quality of drinking water.	During the construction stage for the camps, bottled water with dispensers for workers ' consumption and food handling in the casino will be available. Water will also be used from sources of potable water supply from city, transported in certified tanks and accumulated in specially arranged ponds. On the other hand, during the operation phase, the project considers drinking water consumption for workers in the building of Administration and control as well as water supply for restrooms and services. This water will be obtained from the potable water supply system of the project.	Due to the purchase of the drinking water to third parties during the construction phase, it will be bought to companies that have a valid authorisation resolution, the Register of which will be available to the auditing authority. For its part, the drinking water consumed during the operation phase coming from the project supply system will comply with the standards of this standard, as it is realized in Chapter 1 of the EIA.	All phases of the project.	10.2.3
Decree No. 236. General regulations for private sewers, septic tank, filter chambers, contact Chambers, absorbent chambers and home latrines.				
Establishes that the wastewater treatment system will comply with the following quality standards: • The effluent will be free of putrescible organic matter, • The maximum load of fecal coliforms in the effluent shall be 1000 NMP per 100 ml. It will comply with water quality for irrigation according to NCh. 1,333	The project considers the construction and habilitation of wastewater treatment plants for both the construction and operation phase, which will have the capacity to treat the effluent generated by the project workers.	The treatment system and the other works required for the handling and disposition of the wastewater will comply with each of the requirements stipulated in this Decree, and there is a record of the parameters that it establishes. For these purposes, the technical and formal contents of PAS 138 are presented in the Chapter10 of this EIA.	All phases of the project.	10.2.3
Decree with force of Law n ° 1. Establishes matters that require express health authorization.				

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
This standard establishes the activities that require express health authorization, among which is *"The operation of works destined for the provision or purification of potable water of a population or to the evacuation, treatment or final disposition of drains, sewage of any kind"* (article 1, 22).	The project considers the construction and habilitation of 3 wastewater treatment plants for the construction phase, one of which will be permanently enabled during the operation.	This EIA gives the technical and formal antecedents for the granting of PAS 138, which describes the technical environmental characteristics of wastewater management and the operation of plants. Once the RCA is obtained favorable, it will proceed to the sectoral processing of the permit before the health care. Finally, the holder shall process the sanitary authorization of operation before the health care, as ordered by art. 71, Inc. End of the health Code.	All phases of the project.	10.2.3
DS N ° 735. Regulation of water services for human consumption.				
This legal body prescribes that any potable water service must provide good quality water in sufficient quantity, ensuring continuity of supply against interruptions caused by failures of its installations or its operation. It also provides that the quality of water for human consumption Must Comply with maximum concentrations of different substances and/or chemical elements.	During both phases of the project it will be necessary to supply good quality drinking water to meet the needs of its workers.	The supply of potable water shall fulfil the following characteristics: 1. It will be sufficient, easily accessible and will be available at any time for your workers. 2. The minimum water endowment, with which it will be available, will be equivalent to 150 liters of water per person/day. 3. The requirements of physical, chemical, radioactive and bacteriological quality shall conform to the provisions of the NCh 409 of. 84. 4. The system of treatment and distribution of potable water will ensure, in every event, the potability of the water for the consumption 5. Finally, the system of treatment and distribution of potable water will have the sectoral permits that are applicable, in particular that of the article 71 letter a) and of	All phases of the project.	10.2.3

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
		the 71 final subparagraph, both of the sanitary Code, in relation to DF L N ° 1/89 of the Ministry of Health (Matters requiring express health authorization).		
DS N ° 4. Regulations for the management of sludge from wastewater treatment plants.				
The regulation aims to regulate the handling of sludge from sewage treatment plants. For this purpose, it establishes the sanitary classification of sludge and the minimum sanitary requirements for its handling, in addition to the restrictions, requirements and technical conditions for the application of sludge in certain soils.	The project envisages for its construction phase 3 water Treatment Plants Services (PTAS) distributed for the camp, facilities associated to the Control building and the installation of operations located in the reservoir. In the operation phase, the 3 PTAS will only remain Operative the contemplated for the Control building. The sludge generated there will be removed periodically.	The PTAS shall have an engineering project approved by the corresponding health authority, as ordered by article 9 of the Regulation. In chapter 10 the technical and formal contents are accompanied for the granting of PAS 138. For the handling of sludge, the procedure described in Chapter 10 of the EIA shall be observed. Thus, the sludge generated in the PTAS will be periodically withdrawn by a third party with an express health authorization for this purpose. By contractual clauses the holder shall require the contractor to comply with this regulation. In addition, there will be a record certifying the removal of sludge and its frequency, registration available to the auditing authority. Finally, the technical report on compliance with the requirements of this Regulation shall be sent to the SAG and the health service, as set forth in the article. 30.	All phases of the project.	10.2.3

Source: Self-elaboration

Table 13. Normative chapter of CArácter ESpecífico ToApplicable to Proejct. Waste SÓlidos.

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
Decree with force of Law n ° 725. Sanitary code.				
It governs all issues related to the promotion, protection and recovery of the health of the inhabitants of the Republic, determines the powers of the authorities called to ensure health care issues in the country, and is responsible for health services Ensure that all factors, elements or agents of the environment affecting the health, safety and well-being of the children are eliminated or controlled Inhabitants.	In the construction phase, domestic waste will be generated from the slaughter facilities. In addition, there is a generation of non-hazardous industrial waste, which will be daily and will be extended throughout the construction phase. The storage of industrial waste Hazardous (batteries, oils, lubricants) in the construction phase will only be carried out in a specially conditioned storage warehouse. For these purposes, in the chapter environmental permits sectoral, the technical and formal contents are accompanied for the granting of PAS 142. During the operation phase, only domestic solid waste will be generated, which will be temporarily stored in airtight containers, and then removed by a specialized company authorized to perform these tasks, at least once Per week to be arranged at an authorized site.	The storage of non-hazardous industrial waste in the construction phase will be carried out only in a salvage yard, which corresponds to a specially conditioned area (area with compacted and fenced soil) in the project facilities. Wastes of this type that are generated in fronts of Work will be transported daily to these patios of salvage, place that shall have the technical and formal requirements of the PAS 140. The hazardous waste generated in the construction stage shall be stored in accordance with the provisions of D. S no 148/2003. Hazardous waste in the construction phase (batteries, oils, lubricants) will be stored in a storage warehouse specially conditioned for such purposes, as required by the technical and environmental requirements of PAS 142. For the operation phase Non-hazardous industrial waste shall correspond to waste generated from maintenance activities, such as iron, wood residues and cables. Considering the magnitude of the activities, it is feasible to envisage a generation of 200 kg/month. For both hazardous and non-hazardous waste generated during the construction and operation phase, the compliance indicator consists of the on-site inspection, the	All phases of the project.	10.2.4

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
		respective sanitary authorization for the sectoral processing of PAS and the availability of Sanitary resolutions at the site of the work.		
DS No. 594. Regulation on basic sanitary and environmental conditions at workplaces.				
The wide range of aspects regulated by the decree in question is related to the sanitary and environmental conditions in the workplace. However, according to the application guide of the DS 594 in the SEIA, articles 16, 17, 18, 19, 20, 24 sub-paragraph, 26 and 42 should be considered as environmental regulations applicable to the projects and activities submitted to the SEIA.	As indicated in chap. 1, during the construction and operation of the project, waste will be generated, resulting from the activities involved: solid household-type waste; Industrial solid waste, inert material of excavation and construction.	Standards on basic sanitary and environmental conditions will be complied with in the workplace and the sectoral environmental permit of article 140 of the SEIA regulation shall be applied for temporary storage of non-hazardous waste. In the camp areas, the waste will be collected daily and stored temporarily in containers located in the temporary storage area. The same will be done with the hazardous waste generated and during the development of the activities associated with the project. For these purposes, the following chapter is accompanied by the technical and formal contents for the granting of PAS 142. The collection and final disposal of waste will be contracted to external companies that have sanitary authorization. Prior to the commencement of activities, a declaration showing the quantity and quality of the industrial waste generated, clearly differentiating hazardous industrial waste, shall be presented to the health authority.	All phases of the project.	10.2.4
DS No. 148. Sanitary regulations on hazardous waste management.				
This regulation lays down the minimum sanitary and safety conditions to which the generation, possession,	As noted in Chapter 1, DThe construction phase and during the operation will generate	The hazardous waste generated during the construction phase shall be stored in	All phases of	10.2.4

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
storage, transport, treatment, reuse, recycling, final disposal and other forms of disposal of hazardous waste must be subject, that defines and establishes according to different categories.	hazardous waste, corresponding to compound waste, Mainly by used oils.	warehouses located in the waste management areas of the project facilities for which PAS 142 is requested, whose technical and formal contents are presented in the respective chapter. In this order of ideas, it should be pointed out that this type of waste will not be generated by over 12 tonnes, so it is not necessary to prepare and present a management Plan before the health care. These wineries shall comply with the design measures and requirements contained in title IV (articles 29 and following) of the regulation in question, in particular: • The storage period shall not exceed 6 months. • They will have continuous base, waterproof and structural and chemically resistant to waste. • They will have perimeter closure of at least 1.80 m of height that prevents the free access of people and animals. They will have signaling according to LA Chilean standard NCh 2,190 Of 93.	the project.	
DS No. 78. Regulation of the storage of dangerous substances.				
Establishes safety conditions for hazardous substance storage facilities. The provisions of the latter shall govern preferably as laid down in matters of storage in Decree No. 157 of 2005, of the Ministry of Health, Regulations on pesticides for sanitary and domestic use, and as provided for in article 42 of Decree No 594 of 1999 , of the Ministry of Health, regulations on basic sanitary and environmental conditions in the workplace.	As indicated in Chapter 1 (section 1.5.9), in the construction phase of the project, oils, lubricants, batteries and fats, among others, shall be used, which are considered as hazardous substances in accordance with the scope of this decree.	The place of storage of dangerous substances, as well as the handling to be given, shall be in accordance with the provisions of the decree, safeguarding the health and safety of workers and the environment. The wineries will have a dividing wall when the type of substances requires it. They have proper ventilation and signage. When the	All phases of the project.	10.2.4

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
		quantity of dangerous substances to be stored exceeds 10 inflammable tonnes or 12 tonnes of another kind of Non-flammable hazardous substances, the holder should process the proper health authorisation in accordance with the requirement of article 5 of the standard under analysis.		
DS No. 298. It regulates the transport of dangerous cargoes by streets and roads.				

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
Establishes the conditions for transport of loads which, by their characteristics, are dangerous or represent risks to the health of persons, public safety or the environment. This is without prejudice to the special regulations applicable to each particular hazardous product.	The project will demand different types of inputs such as fuels and explosives, which are transported by land.	attended to by the project contemplating the transport of fuel and explosives, the holder will request authorization prior to Carabineros de Chile. In transport, no spell vehicles will be used, but only vehicles less than 15 years old, and which will be periodically required to comply with the corresponding technical revisions. Also, in stowage, discharge and manipulation, the rules contained in articles 7 and Seq. of the Regulation shall be observed. On the other hand, in the circulation and parking of vehicles intended for the transport of dangerous substances, the conditions laid down in articles 17, 18 and 19 shall be observed. In the event of an accident on the road resulting in the spillage of dangerous substances, the holder shall send a written report to the Department of Land Transport of the Division of Standards and operations of the undersecretary of transport, within The 15 days following the occurrence of the accident.	All phases of the project.	10.2.4
DS No. 209. It fixes toxicity values of substances for the purpose of the sanitary regulation on the handling of hazardous wastes.				
Establishes the toxicity values of acute toxic substances for the purpose of applying article 12 of the Sanitary Regulation on hazardous waste management.	The standard is applicable to the project, to the extent that it considers the generation, handling, storage, transport and disposal of hazardous waste during the construction and operation	Hazardous waste shall be classified according to this standard in appropriate cases. Its classification will allow to determine the scope of application of D. S N º 148/04 in situ.	All phases of the project.	10.2.4

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
	phases of the project.			

Source: Self-elaboration

Table 14. Normative chapter of CArácter ESpecífico ToApplicable to Proejct. Ordering TErritorial.

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
Decree with force of Law n ° 458. General Law of Urbanism and constructions.				
It contains the principles, attributions, powers, faculties, responsibilities, rights, penalties and other rules governing the agencies, officials, professionals and individuals, in the actions of urban planning, urbanization and construction.	The project considers works requiring the application of the permit contained in article 55 above. These works are listed in the EIA Chapter 10, section 10.15.	In chapter 10, section 10.15, the technical and formal contents are presented to evaluate the PAS 160 environmentally. The proprietor shall, in effect, ask the competent authority for the building permits necessary for the works of the project, presenting all the antecedents established in the regulations.	Construction	10.2.5
DS N ° 47. General Ordinance of the Law of Urbanism and constructions.				
constitutes the regulation under which the requirements established by the law apply General of Urbanism and constructions. COntiene the regulatory provisions of the law, regulates the Administrative procedures, the urban planning process, the urbanization of the land, the construction and technical standards of design and construction required for urbanization and construction (article 2 ° LGUC).	As indicated in Chapter 3 of this EIA, the project is located in a rural area not regulated by a territorial planning instrument.	According to the aforementioned, it is not necessary to accompany the technical and formal contents for the granting of the environmental pronouncement of art. 161 of the regulation of the SEIA ("Qualification of Industrial and warehousing facilities ").	Construction and operation	10.2.5

Source: Self-elaboration

Table 15. Normative chapter of CArácter ESpecífico ToApplicable to Proejct. Noise.

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
DS No. 38. It establishes a noise emission standard generated by sources which it indicates, drawn up from the revision of Decree No. 146 of 1997, of the Ministry General secretariat of the Presidency.				
The standard establishes the maximum permissible sound pressure levels and the technical criteria for evaluating and grading the emission of nuisance noises generated by fixed sources to the community, such as industrial, commercial activities, Recreational, artistic or other.	The project, both in the construction and operation phase, includes noise-emitting actions. All the points are outside the urban area of the commune of Iquique, so it is approved to Rural area according to D. S N ° 38/2011 of the MMA and is subject to the maximum sound pressure levels Corrected of article 9 of this emission standard.	have been identified 8 Points corresponding to sensitive receivers, associated to housing and offices. The noise evaluation corresponding to both the construction phase and the operation of the project resulted in all the receivers complying with the standard (see Chapter 5, Income relevance analysis, article 5 literal B of D. S N ° 40/2012 MMA). In the operation phase, the noise associated with the project's installations is induced by the corona effect produced in the power line. However, and as shown by the modeling of noise levels that are attached in annex Acoustic impact study of chapter 4, Impact Assessment, is complied with receptors sensitive to maximum levels Required by the above-mentioned emission standard. The rest of the works are underground, so they do not produce noise.	All phases of the project.	10.2.6

Source: Self-elaboration

Table 16. Normative chapter of CArácter ESpecífico ToApplicable to Proejct. Fuels and EQuipamiento.

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
DS No. 160. Safety regulations for the installations and operations of production and refining, transport, storage, distribution and supply of liquid fuels.				
This regulation lays down the minimum safety requirements for the installations of liquid fuels derived	The fuel demand of the project has considered the peak in its construction, given the effective	The pond shall comply with the design, construction and operation requirements of	All phases of	10.2.7

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
from oil and biofuels (CL) and operations associated with production, refining, transport, storage, Distribution and supply of CL that are carried out in such facilities, as well as the obligations of the natural and legal persons involved in such operations, in order to develop such activities in a safe way, controlling the risk of So that they do not endanger people and/or things.	times of use of the machinery. An estimation of daily consumption of 5,500 lts/day has been made, which will be stored in a metallic pond of 25 m³ in order to obtain a minimum autonomy of 3 days to the work, As described in Chapter 1 of the EIA.	title IV of this regulation. In addition, the holder shall register and certify in accordance with the technical requirements set by the Superintendency of electricity and fuel in the Res. Former. No. 1146-2008 or the one that replaces it. The proprietor, in his capacity as owner of the facilities, shall maintain these in good condition and in a position to prevent or reduce any leakage, emanation or residue which may cause danger, damage or inconvenience to persons and/or things. Finally, any accident will be reported to the Superintendency and the environmental authority in accordance with the rules and procedures of articles 32 and following of this regulatory body.	the project.	

Source: Self-elaboration

Table 17. Normative chapter of CArácter ESpecífico ToApplicable to Proejct. Roads and TRansporte.

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
Decree with force of Law n ° 850. It fixes the consolidated, coordinated and systematized text of the Law n ° 15,840, of 1964, organic of the Ministry of Public Works, and of D.F. L N º 206, of 1960, Law of roads.				

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
It establishes the prohibition of movement by public roads of vehicles of any species exceeding the maximum weight limits laid down in the legal provisions. In qualified cases, the Directorate of Highways may grant special authorisations to those natural or legal persons who must carry machinery or other indivisible objects, which exceed the maximum permissible weights, upon payment of the rights Corresponding.	The project will require transport of construction materials, structures, inputs and others, in which it would eventually require the transport of machinery or other objects exceeding the maximum permissible weight.	For the control of the load weight will be kept record of the dispatch guides of the load to be transported, indicating the trip carried out, date and time and the associated truck indicating its patent plate. In the event that equipment is required to be transported overweight and/or oversized, the holder shall request the corresponding authorisations from the Regional Directorate of Highways. To require transport by third parties, such authorisation shall be required by the holder. In cases where the cross of public roads or access to them is required, the holder shall request authorization from the Directorate of Roads, as provided for in articles 42 and 40 respectively. The application of these permits must guarantee the stability of the works, the security of the transit or the future development of the roads; Ensure that the passage of water is not obstructed or altered; No contamination or significant alteration is generated, among other protected objects.	All phases of the project.	10.2.8
DS No. 158. Establishes limit of weights per axle and limits of Total gross weight.				
In order to avoid the premature deterioration of the pavement of streets and Roads, the Directorate of	The project requires the transport of loads and others, by means of heavy and medium-sized	The holder, through its contractors, shall comply with the maximum dimensions for the	All phases of	10.2.8

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
Highways of the Ministry of Public works by means of this Supreme decree, established the limits of maximum weight by axles with which the vehicles of load can circulate By the ways of the country. It also establishes that for transporting indivisible load with gross weight exceeding 45 tonnes, it must request special permission in the direction of roadway. This same rule applies to urban roads, by express remission of Supreme Decree No. 200 of the Ministry of Public Works, of 193, which establishes maximum weights for vehicles to circulate in the urban roads of the country.	motor vehicles.	circulation of vehicles on public roads, as well as the maximum weight of vehicles which may circulate on public roads. The corresponding permits shall be requested when a load exceeding the maximum weight limits set out in the applicable legislation is required.	the project.	
DS No. 75. It establishes conditions for the transport of loads indicating.				
This regulatory body indicates that vehicles that transport waste, sand, dirt, gravel or other materials, whether solid or liquid, which may seep or fall to the ground, shall be constructed in such a way that this does not occur for any reason. It also adds that in urban areas, the transport of dust-producing material, such as rubble, cement, plaster, etc., must always be carried out covering the materials with adequately sized tarps or plastics, or another system which Prevent it from spreading to the air.	The project involves the transport of materials during the construction phase.	Contractors shall be required to transport materials to prevent their dispersion into the air and to do so should consider the full and effective covering of materials with appropriately sized tarps or other system in order to achieve this objective.	Construction	10.2.8
Resolution No. 1. Sets maximum dimensions to vehicles indicating.				
It establishes that vehicles that circulate in the public thoroughfare may not exceed the dimensions indicated, in terms of width, length and high maximum. The road	The project will require transport activities for construction materials, structures, inputs and	The trucks to be used in the project will conform to the maximum dimensions established in this Regulation.	All phases of the project.	10.2.8

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
management may authorize, in qualified cases, the circulation of vehicles that exceed the maximum dimensions, authorisation to be communicated to Carabineros de Chile.	others.	The corresponding permits shall be requested when a load exceeding the maximum weight limits set out in the applicable legislation is required.		

Source: Self-elaboration

Table 18. Normative chapter of CArácter ESpecífico ToApplicable to Proejct. Marine environment

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
DS No. 430. It fixes the consolidated, coordinated and systematized text of the Law n ° 18,892, of 1989 and its modifications, General law of fisheries and aquaculture.				
The DS N ° 430/92 regulates, among other things, the conservation of the quality of the bodies of water and imposes penalties to whoever introduced or will send in the sea, rivers, lakes or any other body of water, chemical, biological or physical pollutants that They cause damage to the hydro-biological resources, without having previously been neutralized in order to avoid such damages (article. 136).	The project will discharge to the sea the effluent from the seawater to be used to generate energy. The effluent will be discharged through an underwater work constructed by Norwegian Tyre, outside the coastal protection zone.	The holder shall adopt all the safeguards and security measures referred to in the standard, so as not to incur the penal type enshrined in article 136.	Operation	10.2.9
DS No. 1. Regulation for the control of water pollution.				
This regulation rules the regime for the prevention, surveillance and combat of pollution in sea waters,	The project will discharge to the sea the effluent from the seawater to be used to generate energy. In the operation phase, the same lower	Compliance with the standard in analysis is directly related to the application of PAS 115, whose technical and formal contents are	Operation	10.2.9

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
ports, rivers and lakes subject to national jurisdiction.	Norwegian draught tunnel used during construction will be used to drive water to the discharge point outside the coastal protection zone. However, and because it is the same sea water captured which will be discharged, the effluent does not correspond to any of the materials whose discharge is generally prohibited in article 2 (ballast, debris or waste and spill oil or its derivatives or Residues, mineral tailings or other harmful or dangerous substances.	accompanied for environmental evaluation. The facilities associated with the discharge of seawater, its location and characteristics thus the characteristics of the place of discharge and the marine environment receiving, are part of the content of the aforementioned permission. Once the safety of the water to be downloaded is environmentalally accredited, after obtaining the PAS in the SEIA, it will proceed to its sectorial processing before DIRECTEMAR. On the other hand, the EIA is accompanied by an emergency Plan, complying with the standard, whose contents are presented in Chapter 11 "Risk Prevention and accident control measures".		
Decree No. 296. promulgates the Convention for the Protection of the environment and the southeastern Pacific coastal zone.				
It establishes Chile's obligation to prevent, reduce, and control the pollution of the marine environment and coastal zone of the Southeastern Pacific in order to ensure adequate environmental management of natural resources.	The sea discharge corresponds to the same water collected for the generation of energy in the hydroelectric power plant. The description of the project explains this system, which considers a desalination plant to treat seawater.	The control measures as well as the reporting obligations contained in this Agreement are incorporated into the project's environmental monitoring Plan. In addition, the "Environmental impact assessment" established in article 8 of the Convention is fulfilled whenever the project enters the SEIA, The end To assess its potential environmental and Measures Through For AgoR Charge of these.	All phases of the project.	10.2.9

Source: Self-elaboration

Table 19. Normative chapter of CArácter ESpecífico ToApplicable to Proejct. National Monuments.

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
Law No. 17,288. Legislation on national monuments.				
Law n ° 17.288/70, according to the amendment exercised by Law No. 20,021: It defines and gives to the tuition of the National Monuments Council the National monuments, and within these they distinguish the historical, public and archaeological monuments and sanctuaries of the nature declared like such to proposition of the Council. It also establishes that objects that form part or belong to a historical monument may not be removed without the permission of the Council, which shall indicate the manner of proceeding in each case. If the monument is a Eriazo place or site, it may not be excavated or built without prior authorization from the Council of MonumentS National.	In the archaeological inspection carried out in the area of localization of the project, 23 archaeological finds were detected, according to the account in Chapter 3 of the EIA.	Since the project considers the intervention of archaeological sites during the construction phase, a series of environmental measures are considered such as the installation of informative signage and shelter, the execution of an archaeological management Plan, a Permanent archaeological monitoring, and training in the care of cultural heritage (chap. 7, section 7.2.2). In this regard, the technical and formal contents for the granting of PAS 132 are accompanied by Chapter 10, to make archaeological excavations (chap. 10, section 10.6). On the other hand, since the project also considers the partial intervention of the fossil levels in the project area, it is considered a Plan of paleontological rescue and the realization of lectures to promote the valuation of the paleontological heritage (chap. 7, Section 7.2.3). In this regard, the technical and formal contents for the granting of PAS 132 are accompanied by Chapter 10, to make paleontological excavations (chap. 10, section 10.7). Finally, in the event that during the construction activities there is the discovery of some archaeological or paleontological element not previously detected, the following plan of action will be implemented, as required by the legislation in analysis: • Immediate detention of the tasks or activities at the location of the finding;	Construction	10.2.10

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
		• Communication to the competent authorities; • Elaboration of an archaeologist's plan of action, which shall be submitted to the Authority for review and approval; • Execution of the plan approved by the authority.		
Decree No. 311 exempt. It declares historical monument underwater heritage that indicates, whose antiquity is more than 50 years.				
It declares historical monument all traces of human existence found in the bottom of rivers and lakes and in the seabeds that exist under the inland waters and Territorial Sea of the Republic of Chile, for more than fifty years, which include: To Sites, structures, constructions, artifacts and human remains, in conjunction with its natural and archaeological environment. b Remains of ships, aircraft, other vehicles or some of its parts, its cargo or its contents, in conjunction with its natural and archaeological environment.	In the archaeological inspection carried out no findings of the historical patrimony were detected as detailed in the baseline.	If, on the occasion of the excavations to be carried out or of any other work to be executed during the construction and operation stages of the project, an unidentified underwater historical monument is discovered on the baseline, the holder agrees to To interrupt the work that gave rise to the discovery and inform the Provincial governor, Carabineros de Chile and the Council of National Monuments, in order to adopt the necessary measures for the conservation of the same. Additionally, and as applicable, the action plan described above is implemented in the form of compliance with law 17,288.	Construction	10.2.10

Source: Self-elaboration

Table 20. Normative chapter of CArácter ESpecífico ToApplicable to Proejct. Protection of FAuna TErrestre.

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
Law No. 19,473. It replaces the text of Law n ° 4,601, on hunting, and article 609 of the Civil code.				
The provisions of this Act shall apply to the hunting, capture, ageing, conservation and sustainable use of wildlife animals, with the exception of species and hydro-biological resources, the preservation of which is governed by Law no 18,892, General fisheries And aquaculture, whose recast, coordinated and systematized text was set by Supreme Decree No. 430, of 1991, of the Ministry of Economy, Development and reconstruction. The hunting or capture of amphibian mammals of the wild fauna shall be governed by the provisions of this law, and with respect to the other amphibians shall be determined by the regulation.	During the works of installation of tasks, excavation and earth movements that will be carried out in the stage of construction of the project will produce the occupation of soils that eventually cause a loss of specimens of the species *Liolaemus Stolzmanni* And *Phyllodactylus Gerrhopygus.*	The holder will carry out prior to the construction of the project, a rescue and relocation Plan for the species *Liolaemus Stolzmanni* And *Phyllodactylus Gerrhopygus*. For the foregoing, PAS 146 is requested in Chapter 10. With respect to the fauna of low mobility in conservation category, a rescue Plan will be developed and implemented before the execution of works in places of concentration of this type of fauna. It should be mentioned that the proprietor shall instruct and prohibit his workers and contractors from hunting in all the places where the project will take place.	Construction	10.2.11
DS N ° 5. It approves rules of the hunting law.				
This regulatory body complements the regulation of the hunting, capture, ageing, conservation and sustainable use of wildlife animals, carried out by law.	Establishes the conservation status of the species identified in the area of influence of the project.	The holder will carry out prior to the construction of the project, a rescue and relocation Plan for the species *Liolaemus Stolzmanni* And *Phyllodactylus Gerrhopygus*. For the foregoing, PAS 146 is requested in Chapter 10. With respect to the fauna of low mobility in conservation category, a rescue Plan will be developed and implemented before the execution of works in places of concentration of this type of fauna.	All phases of the project.	10.2.11

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
		It should be mentioned that the proprietor shall instruct and prohibit his workers and contractors from hunting in all the places where the project will take place.		

Source: Self-elaboration

Table 21. Normative chapter of CArácter ESpecífico ToApplicable to Proejct. Protection FAuna MArina.

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
Exempt Decree No. 225. It establishes Veda for the hydrobiological resources that it indicates.				
It establishes an extractive Veda for 30 years for all marine vertebrate species including 46 mammals, 9 penguins, 5 sea turtles and a snake. The only exception is the common sea lion. The Under-Secretary of Fisheries may authorize the capture of specimens of these species for their maintenance in captivity, for purposes of exhibition, recreation, culture or research.	None of the activities or works of the project implies the capture or death of protected marine species, however, risk situations could result from some workers ' actions during the execution of their work.	A talk will be made to the staff regarding the biological importance of marine species and their conservation. Workers will be advised that failure to comply with the protection of species regulations is punishable by law and will not be tolerated by the holder.	All phases of the project.	10.2.12
Exempt Decree No. 1,892. It establishes extractive Veda for the Common Sea Wolf resource in area and period indicating.				
Establishes an extractive Veda for the Common Sea Wolf resource *Otaria flavescens*, on the entire coast of the Republic, for the term of 3 years counted from the date of publication of the decree in the Official journal, that is to say until 18 December of the current year.	None of the activities or works of the project implies the capture or death of protected marine species, however, risk situations could result from some action of workers during the execution of their work.	A talk will be made to the staff regarding the biological importance of marine species and their conservation. Workers will be warned that failure to comply with the protection of species regulations is punishable by law and will not be tolerated by the company.	All phases of the project.	10.2.12
Decree No. 179. It establishes a ban on the capture of cetacean species that are indicated in waters of national jurisdiction.				

Regulated matter	Relationship with the project	Form and indicator of compliance	Application phase	Numeral
It establishes perpetual prohibition of hunting and/or capture of 43 species of cetaceans in waters of national jurisdiction.	None of the activities or works of the project implies the capture or death of protected marine species, however, risk situations could result from some workers ' actions during the execution of their work.	A talk will be made to the staff regarding the biological importance of marine species and their conservation. Workers will be warned that failure to comply with the protection of species regulations is punishable by law and will not be tolerated by the company.	All phases of the project.	10.2.12
Law No. 20,293. It protects cetaceans and introduces amendments to Law No. 18,892 General Fisheries and aquaculture.				
Prohibits death, hunting, capturing, harassing, owning, transporting, disembarking, elaborating or carrying out any process of transformation, as well as the marketing or storage of any species of cetacean that inhabit or surque the maritime spaces of sovereignty and national jurisdiction.	None of the activities or works of the project implies the capture or death of protected marine species, however, risk situations could result from some workers ' actions during the execution of their work.	A talk will be made to the staff regarding the biological importance of marine species and their conservation. Workers will be warned that failure to comply with the protection of species regulations is punishable by law and will not be tolerated by the company.	All phases of the project.	10.2.12

Source: Self-elaboration

Table 22. Sectoral environmental permits applicable to the project. PAS 115.

Stage	Evacuation system	Evacuation site	Features and composition download	harmfulness download	Numeral
Sectoral environmental Permit 115. Permission to introduce or unload materials, energy or harmful or dangerous substances of any kind into waters subject to national jurisdiction.					
Operation. DSea water Drain Associated with the generation of Energy.	The sectors of the project Whose works are specifically associated with the download process, are the following: 1.-Submarine Sector: Has as Objective to carry out the intake and discharge of seawater and of the effluent generated, respectively,	The submarine take/unload will be 0.35 km from the coast, Through the lower tunnel, according to the Coordinates presented in the Following table: **Norte** | **Este**	The discharge effluent will correspond to seawater, identical in composition as the suction, but with a temperature that will reach a ΔT, between the discharge and the environment Less than approximately 3 °c. To determine whether or not there is	The effluent generated corresponds exclusively to seawater used as a means of Generation of energy, without any modification to its natural composition,	10.2

Stage	Evacuation system	Evacuation site	Features and composition download	harmfulness download	Numeral
	through the designed underwater intake and discharge. 2.-Underground Sector: comprises three main works Lower tunnel, Cave of machines and Upper tunnel, whose objective is to pump the seawater, to drive it through the tunnels mentioned to the projected reservoir, and then to redirect it by means of the same system, until its restitution to the sea, in the Submarine sector. 3.-Plateau Sector: Its main objective is the storage of the extracted water, which will be carried out in the reservoir sector, , From where it will be pumped to and from the submarine sector, to finally reinject it into the sea. The detail of the location and coordinates of each of the The works described, is indicated in the Chapter 15 Appendix, annex 1.2 location plan with works of the project and annex 1.3 coordinate table.	7.665.677 383.097 7.665.694 383.095 7.665.697 383.113 7.665.679 383.116 Datum WGS84 H19S The download will be carried out outside the ZPL.	any impactn the quality of the water during the operation of the project, a modelling of the system was carried out, using the model DYRESM-CAEDYM (1d), which allows to simulate the behavior of the physical and chemical parameters of the system. The detail of the modeling performed and its results, is found in EL Chapter 15 Appendix, annex 10.1 Hydrodynamic modeling and water quality: "Espejo de Tarapacá".	so that the effluent will not be toxic, it will not have harmful effects, and it won't cause adverse effects on the content and balance of oxygen.	
Sectoral environmental Permit 115. Permission to introduce or unload materials, energy or harmful or dangerous substances of any kind into waters subject to national jurisdiction.					
Construction and operation. DBurden of Desalination plant	The project considers the installation of a desalination plant, whose effluent will consist in brine of rejection to be discharged to the sea, for which this is requested Permission.	Effluents from the desalination plant will be discharged through submarine discharge ducts outside the coastal protection Zone (ZPL). During the Stage of construction, the take/discharge of the plant will be through provisional ductss parallel to the lower tunnel, at the coordinates indicated below:	A catchment is contemplated of approximately 10 L/s of seawater for the construction stage, and 5 L/s During the operation stage. Once captured, this It will undergo pre-treatment, filtering and reverse osmosis processes. Whereas the plant will operate with an efficiency of 45%, a maximum flow of approximately 5.5 l/s of salt water of discharge in	The desalination process contemplates the purification of seawater by The reverse osmosis process, which considers the use is semi-permeable membranes for the separation of the salts	10.3

Stage	Evacuation system	Evacuation site	Features and composition download	harmfulness download	Numeral
		<table><tr><th>Norte</th><th>Este</th></tr><tr><td>7.665.851</td><td>383.250</td></tr></table> Datum WGS84 H19S For the operation stage both the sea water take/discharge will be dialledAda through the lower tunnel, in the same area indicated for the discharge of seawater.	construction stage and of 2.75 L/s in the operating stage shall be generated. The salt water of discharge will comply with the DS 90/01 table N ° 5, which establishes the quality of the effluents discharged to a marine environment outside the ZPL. On the other hand, considering that seawater enters the desalination plant with approximately 36,000 ppm (salinity unit) and that the efficiency of the process is around 45%, it is estimated that the salinity of the salt water of discharge will reach approximately 65,455 ppm.	present. This process does not consider the addition of any chemical in the process, so the salt water will not contain physical, chemical and biological elements or agents that may remain in time in the marine environment.	

Source: Self-elaboration

Table 23. Sectoral environmental permits applicable to the project. PAS 119.

Stage	Hydrobiological species to be extracted	Area	Objectives	Fishing System Features	Methodology	Results Expected	Schedule	Numeral
Sectoral environmental Permit 119. Permission to conduct research fishing.								
Operation	The hydrobiological species identified corresponds to plankton, including those Animal origin (ZooplaNcton) or vegetable (phytoplankton).	The study area comprises a zone of direct influence (points 1 to 6) and one without influence of the project COMO Control Zone (points 7 to 12).	The main objective of this study is to obtain the first register of information base of the diversity and structure of the planktonic community (phytoplankton and zooplankton) in front of the area of influence of the project Espejo de Tarapacá and a control sector more to the South without Influence of this	The samples of zooplankton and Ichthyoplankton will be obtained through a conical cylindrical network type Hansen, with mesh draught of 120 µm. The draggings made will be of the vertical layered type. In order to carry out a comparable analysis between the different samplings and with similar studies, the Zooplanctónicas fisheries will be standardized to a water volume of 100 m3.	Control transects will be used to the North and south of the project, contemplating 9 stations for each one, distributed in 3 levels. At each level, samples with a core of 0.01 m2 will be obtained. Sand make UNa matrix of taxa per station, describing: Abundance, biomass, species richness, species diversity (Shannon-Wiener index) and uniformity (Pielou index). At last A hierarchical classification analysis will be carried out based on a similarity matrix (using the Bray-Curtis index) in order to evaluate the similarity in between transects..	A total d is expected to be recorded(e) 12 species of invertebrates. In terms of abundance, the community would be dominated by Nematoda and Crustacea with 63% and 29% of the total number of species recorded, respectively. The analysis of the total Macroinfauna hopes to find that the greatest abundance is in the transects II5 and II7 (southern Control).	There will be a six-monthly follow-up of the abundance and diversity of the planktonic community (phytoplankton and zooplankton) in the area of influence, for three years, from the beginning of the plant's operation.	10.4

Source: Self-elaboration

Table 24. Sectoral environmental permits applicable to the project. PAS 126.

Stage	Generation	Quantification	Classification	Sludge Handling	Parameters Of Control	Numeral
Sectoral environmental Permit 126. Permit for the construction, repair, modification and extension of any installation designed for the handling of sludges of sewage treatment plants.						
Construction and operation	The sludge will be generated from the modular wastewater treatment plants similar to those of the Ecojet type, which shall treat the water served by means of a biological process of activated sludge.	During the Construction A maximum of 500 Workers, with a generation of 1.98 ton/month of sludge. During the operation an average of 50 workers per month is estimated, with a generation of 0.198 ton/month of sludge.	The sludge generated will correspond to a stabilized sludge, which according to title II, article 6, numeral 6, of DS N ° 4/2009, is generated from a time of residence equal to or greater than 25 days, provided that these are sludges from water treatment plants Served, in which the stabilization of sludge is carried out in the same unit where the biological oxidation of organic matter occurs.	Once generated, sludge They shall be withdrawn through an authorized truck for that purpose and shall be disposed of in a third party authorized to dispose of this type of waste in accordance with the regulations on sanitary and basic safety conditions in landfills, DS No. 189/2007 of Ministry of Health. For the foregoing, the following shall be kept in record: • Contract with company authorized for the removal of sludge. • Record of withdrawal of waste that identifies date of withdrawal, quantity and company • Stamped document of entry to authorized place.	The Operation control program of the sludge management system includes the measurement of the following critical parameters: • Observe weekly The correct operation of the electromechanical ejector, which injects the air into the plant. • Weekly PH measurement • Weekly temperature measurement • Weekly review of electric board and good performance • Monthly sludge volume check in Accumulation pond • Semi-annual revision of the volume of sludge in the modular system compartments.	10.5

Source: Self-elaboration

Table 25. Sectoral environmental permits applicable to the project. PAS 132.

<table>
<tr><th>Stage</th><th>Finds</th><th>Alteration/affectation</th><th>Management Plan</th><th>Numeral</th></tr>
<tr><td colspan="4">Sectorial Environmental Permit Mixed 132-permission to make excavations of archaeological, anthropological and paleontological type.</td><td></td></tr>
<tr><td>Construction

Archaeological finds.</td><td>The baseline made identified a total of 23 archaeological findings, corresponding to three undetermined inscribed fingerprints lacking associated diagnostic material, probably historical; A lithic set of medium density identified as pre-Hispanic; Four structures/milestones of subcurrent or indeterminate data; A historical cemetery of nitrate period and platforms and imprints of the old railway. The remaining points correspond to landfills or accumulations of historical-subcurrent material, including the discovery of historical bottles and an accumulation of mineral</td><td>The archaeological points of interest identified that could be affected by the site of the project, during its construction stage, correspond to those located in the SECOf the projected camp, Find N ° 19.

This finding corresponds to A site with lithic material surfaceL Which presents potential stratigraphic in those areas not disturbed, especially those adjacent to blocks errAttics on the coastal terrace and whose affiliation dates from the pre-Hispanic era. The coordinates of the site described are shown in the following table:

<table><tr><th>Sitio</th><th>UTM E</th><th>UTM N</th></tr><tr><td>19</td><td>380031</td><td>7672063</td></tr></table>Datum WGS84 H19S</td><td>Materials recovered from the camp site will be classified according to type of materiality, characterised by their main and quantified attributes. Subsequently, they will be delivered To a specialized deposit, in this case, the Regional Museum of Iquique, with due preparation, as required by that institution.

For the other identified findings will be implemented a signaling system, highlighting those located less than 30 meters from some work

With regard to the nitrate cemetery and the evidences of the passage of the old railway, it is recommended its signposting and protection by means of the instructions to be requested to the Council of National Monuments, in order to assure its preservation because of its interest Historical.</td><td>10.6</td></tr>
<tr><td colspan="4">Sectorial Environmental Permit Mixed 132-permission to make excavations of archaeological, anthropological and paleontological type.</td><td></td></tr>
<tr><td>Construction

Paleontological findings.</td><td>In the reservoir Sector, 28 main checkpoints were identified, of which in 2 the remains of Quaternary age terrestrial invertebrates from the high hospice gravel.

In the field of the route of the high voltage electrical transmission line, roads of access and service and area of the camp, 47 checkpoints were individualized, of which 3</td><td>The location of the levels with marine and continental invertebrates in the areas of the project represents risk to the integrity of the fossils present in the area, both of collection and direct damage by the transit of officials as by works of excavation and removal Ground, during the construction stage.</td><td>En each one of the individual sectors, the materials will be recovered with authorization of the Council of National Monuments and deposited in an institution that it determines. These will be classified according to type of materiality, characterized by their main and quantified attributes.

It is proposed, before starting construction in the</td><td>10.7</td></tr>
</table>

Stage	Finds	Alteration/affectation	Management Plan	Numeral
	verified the presence of invertebrates of continental origin of presumed age quaternary.		corresponding sector, to prepare the paleontological materials rescued for delivery to a specialized warehouse.	

Source: Self-elaboration

Table 26. Sectoral environmental permits applicable to the project. PAS 138.

Stage	Generation	Treatment	Quantification	Parameter Control	Final disposition	Numeral
Mixed sectoral environmental permit 138-permit for the construction, repair, modification and extension of any public or particular work destined for the evacuation, treatment or final disposal of drains, sewage of any kind.						
Construction	The liquid wastes that will be generated during the construction stage correspond to household waste.	For this stage are considered 3 PlantS Wastewater treatment of activated sludge of the modular type, Ecojet.	Considering a water consumption rate of 150 L/person/day, with a peak of 500 Workers, with a residual rate of 100% of the water consumed, is estimated a generation of 2,250 m3/month of wastewater.	12 annual surveys, the parameters to be complied with are those established in the NCh 1333/1978.	The sanitary effluent shall be treated in a manner which complies with the quality of NCh 1,333 of. 1978 to be used in road humidification.	10.8
Operation	The liquid wastes that will be generated during the construction stage correspond to household waste	For this stage it is considered a L Wastewater Treatment PlantActives of the modular type, Ecojet.	Considering a water consumption rate of 150 L/person/day, with a peak of 50 workers, with a residual rate of 100% of the water consumed, a generation of 225 m3/month of wastewater is estimated.	12 annual surveys, the parameters to be complied with are those established in the NCh 1333/1978.	The sanitary effluent shall be treated in a manner which complies with the quality of NCh 1,333 of. 1978 to be used in road humidification.	

Source: Self-elaboration

Table 27. Sectoral environmental permits applicable to the project. PAS 139.

<table>
<tr><th>Stage</th><th>Generation</th><th>Treatment</th><th>Quantification</th><th>Parameter Control</th><th>Final disposition</th><th>Numeral</th></tr>
<tr><td colspan="7">Mixed sectoral environmental Permit 139 - Permission for the construction, repair, modification and extension of any public or particular work intended for the disposal, treatment or final disposal of industrial or mining waste.</td></tr>
<tr><td>Construction and operation.

Evacuation and disposition of the brine generated in the desalination plant.</td><td>The desalination plant will have the objective of generating potable water from the capture of seawater, which is potabilizará by the reverse osmosis process..</td><td>Reverse osmosis is based on the natural process of osmosis, appliesNdo A pressure greater than the osmotic pressure of the concentrated solution (seawater), reversal the natural process and generating a permeate (pure water) and a rejection (water concentrated in salts).</td><td>Considering a capture of approximately 10 L/s of seawater for the construction stage of the project and of 5 L/s during the operation stage, which will be subjected to pre-treatment, filtering and reverse osmosis processes, a maximum flow of Approximately 5.5 l/s of saltwater discharge in construction stage and 2.75 L/s in Operation stage.

On the other hand, considering that seawater enters the desalination plant with approximately 36,000 ppm (salinity unit) and that the efficiency of the process is around 45%, it is estimated that the salinity of the salt water of discharge will reach Approximately 65,455 ppm.</td><td>In order to monitor compliance with the concentrations established in DS No. 90/01, a chamber will be located to allow sampling of the brine generated, according to the frequency and parameters established in DS No. 90/01.</td><td>LA brine evacuation will be directly fromSde The desalination plant, carried out through submarin discharge ductsA. The download will be located outside the ZPL, according to the coordinates indicated in the following table:
<table><tr><th>Etapa</th><th>UTM N</th><th>UTM E</th></tr><tr><td>Construcción</td><td>7.665.851</td><td>383.250</td></tr><tr><td rowspan="4">Operación</td><td>7.665.677</td><td>383.097</td></tr><tr><td>7.665.694</td><td>383.095</td></tr><tr><td>7.665.697</td><td>383.113</td></tr><tr><td>7.665.679</td><td>383.116</td></tr></table>Datum WGS84 H19S

For the effects associated with the discharge, andL Salt Water of discharge will comply with the DS 90/01 table N º 5, which establishes the quality of the effluents discharged to a marine environment outside the ZPL. With regard to the salt water temperature, it can be noted that this will be similar to that of seawater, since desalination does not consider thermal processes. In relation to The salinity of the effluent will be reduced rapidly, matching its salinity with the natural concentration of the sea. In terms of reversibility, this reversible impact is considered, because once the discharge is stopped the water column will recover its basal condition.</td><td>10.9</td></tr>
</table>

Stage	Generation	Treatment	Quantification	Parameter Control	Final disposition	Numeral
Mixed sectoral environmental Permit 139 - Permission for the construction, repair, modification and extension of any public or particular work intended for the disposal, treatment or final disposal of industrial or mining waste.						
Construction. Truck washing Sector.	During the construction stage, industrial liquid waste will be generated from the washing of gutters and concrete mixers of the mixer trucks with concrete remains.	The management of water from the washing of canoes and betonito Contemplate the HA waterproof pool On which the washing discharge will be carried out. The Water will evaporate In a natural way, and part will be reused In the next wash. The cement with a lower percentage of water is removed from the PIScina as non-hazardous residue. Once the construction stage is finished, at the end of the work, the pool is filled with the previously excavated material.	A generation of 20 m3/month is estimated.	The monitoring program will consist of a daily visual inspection of the pool level so that it does not overflow. In relation to the supernatant water, as mentioned above, part will evaporate in a natural way, and part will be reused in the same process of washing of canoes.	Whereas liquid industrial waste shall be concentrated by the effect of climatic evaporation and that a waterproofed swimming pool shall be enabled for their handling, the evacuation and final disposal of them is not considered necessary. It should also be noted that nOr there will be discharge of industrial liquid waste on cueRPO or receiving course.	10.10

Source: Self-elaboration

Table 28. Sectoral environmental permits applicable to the project. PAS 140.

Stage	Type of waste	Estimate	form of storage	Final disposition	Numeral
Mixed sectoral environmental permit 140-permit for the construction, repair, modification and extension of any waste and waste treatment plant of any kind or for the installation of any place intended for the accumulation, selection, Industrialization, trade or final disposal of rubbish and waste of any kind.					
Construction	Domestic or assimilated to domestic.	500 Kg/day	The project considers the habilitation of 5 patios of AlmacEnamiento and Waste Management: • Domestic waste yard and industryNon-hazardous, coastal Sector. • Domestic and industrial waste yard no dangerSOS, Sector Costa – San Marcos. • Yard of domestic and industrial waste not PeligRosos, Sector Costa – Río Seco. • Domestic Waste yard and industrial, Plateau Sector. • Domestic waste yard and IndustriAles, Sector Costa – Camping. During the Operation stage The utilization of the waste yard enabled in the Costa-San Marcos Sector will continue. Each one of them will count With perimeter closure of at least 1.80 meters highBe Installed on compacted soil and will have gaps (movable barriers) to order the various waste, according to type, with their respective signage. The Patio de salvage will have restricted access, in terms that can only be entered by personnel duly authorized by the person responsible. Each Type of waste will be stored In an orderly and segregated mannerUsing Trash cans, which will be plastic, sturdy, sealed with lid, easy to move and	These wastes will be transported to places authorized by the health care, with a frequency of once a week in normal conditions and twice a week in conditions of maximum generation, so as to avoid the accumulation of garbage in slaughter.	10.11
	Non-hazardous industrial.	9,2 ton/month			
Operation	Domestic or assimilated to domestic.	50 kg/day		The withdrawal will take place at least once a week, but in the course of the operation it will be possible to define a period according to the production of waste.	
	Non-hazardous industrial.	200 kg/month			

Stage	Type of waste	Estimate	form of storage	Final disposition	Numeral
			washable. These will be arranged in each installation, which will be distributed in the main generating points of this type of waste. The storage site shall be constructed with a maximum waste storage capacity exceeding 120% of the capacity presented in this permit.		
Mixed sectoral environmental permit 140-permit for the construction, repair, modification and extension of any waste and waste treatment plant of any kind or for the installation of any place intended for the accumulation, selection, Industrialization, trade or final disposal of rubbish and waste of any kind.					
Construction. 5 Collection sectors of excavation Material	Non-hazardous industrial.	Costa Sector: • Near Caleta San Marcos: 960,600 m3. • Near Rio Seco: 472,800 m3. Plateau Sector: • Gathering 1: 1,058,600 M3. • Gathering 2: 1,107,600 M3. • Gathering 3: 2,686,200 M3.	During the construction stage are considered different excavation activities associated with the implementation of the works that compose the project. The material generated will be deposited in 5 collection sectors, Whose Main objective Is Collect the waste from the extracted marine and the surplus materials of the excavations on the different working fronts. This material will be transported through hopper trucks, from the points of excavation, to the indicated billets. Its construction is considered in terraces of 5 m of height, with steps 2 m each, and with a inclination of 5:1. It is estimated that with two terraces will suffice.	The collecting sectors constitute the final disposal areas of the excavation material.	10.12

Source: Self-elaboration

Table 29. Sectoral environmental permits applicable to the project. PAS 142.

Type of waste	Stage	Estimate	form of storage	Storage time	Final disposition	Numeral
Mixed sectoral environmental permit 142-permission for any site intended for the storage of hazardous waste.						
Hazardous waste	Construction	0.95 ton/month	The project will enable 2 Warehouses for temporary storage of hazardous waste to be located at: • Warehouses for temporary storage of hazardous waste, construction stage. - Control and administration Building, Sector Costa, with an area of 4 m2. - Installation of slaughter, Plateau Sector, with an area of 4 m2. • Warehouse of hazardous waste storage, stage of operation. During the operation phase, the winery implemented in the Control and administration building, described for the Costa Sector, will continue to be used. Ehese residues will be stored in drums duly labeled and sealed, in a place specially equipped for a safe temporary collection in the facilities of slaughters complying with all the corresponding legislation.	The frequency of removal of hazardous wastes will depend on the amount generated and the issuance of the permits necessary to remove the waste to its final destination not exceeding 6 months of temporary storage.	The waste will be packaged, labeled and arranged Finally, by a company authorized to whom the service of transfer and final disposition will be hired.	10.13
	Operation	0.2 ton/month				

Source: Self-elaboration

Table 30. Sectoral environmental permits applicable to the project. PAS 146.

Stage	Objective	Species, sex and number of specimens to be captured	Methodology	Conditions of transport and facilities	Numeral
Mixed sectoral environmental Permit 146. Permission for the hunting or capture of specimens of animals of protected species for research purposes, for the establishment of breeding centres or breeding grounds and for the sustainable use of the resource.					
Construction	Avoid the loss of copies by relocation in an area that will not be intervened by the execution of the project, in order to increase the abundance of the populations existing in that area.	It is considered the capture of 2 species, both belonging to the Reptiles class: • Stolzmann Dragon, *Liolaemus Stolzmanni* • Large North Salamanqueja, *Phyllodactylus Gerrhopygus.* The measure considers the capture of copies of both sexes. 100% of the specimens detected during the rescue work will be captured.	Because the general conditions of the habitat determine the presence of the individuals of fauna in general, and of the reptiles in particular, rescue efforts will be developed only in specific sectors of the zone of sighting. This methodological approach is consistent in the rest with the baseline sampling strategy, since it was focused on a targeted search, associated among others with sand stones or substrates. In this way, the rescues of individuals will be made in the microhabitats where they were sighted (or the bibliography indicates) the 2 species E This kind of vertebrates. It should be mentioned that in order to avoid recolonization of the rescued area, the time between the rescues and the start of the works should be as short as possible. As already mentioned, the implementation of this measure and certain methodological details will ultimately be defined by technical aspects specified in the exempt resolution authorizing the capture work. The manual capture technique is to be	Transport. The transport of individuals, From capture areas to release sites, it will be done In containers previously enabled with substrate and temporary shelters appropriate to the nature of each species. Facilities The specimens will be placed in plastic containers specially adapted for the captivity of specimens of the aforementioned species. Place of Capture The catches will be carried out in the area of the reservoir, which corresponds to the only areal work of a surface that justifies the implementation of the measure. Place of Release The specimensIs captured will be released in SItios where the species to be relocated are present CThe release and whose CHabitat Aracterísticas Are SimilarIs To the place of origin.	10.14

Stage	Objective	Species, sex and number of specimens to be captured	Methodology	Conditions of transport and facilities	Numeral
			used, which consists In the active search for specimens of these species, in their potential shelters. The captured specimens will be held captive, transported and finally released.		

Source: Self-elaboration

Table 31. Sectoral environmental permits applicable to the project. PAS 155.

Stage	Hydraulic work	Water quality	Measures to prevent water pollution	Numeral
AllowMixed sectoral environmental 155. Permission for the construction of certain hydraulic works.				
Construction	The central work corresponds to the Reservoir which will have a capacity greater than fifty thousand cubic meters and will have Aqueducts What will have a flow greater than two cubic meters per second. The sectors containing hydraulic works correspond to: • Submarine Sector: Underwater take/unload work. • Underground Sector: Lower Tunnel, machine Cavern and Upper Tunnel, whose objective is to pump, to drive to unload the seawater used in the process. • Plateau Sector: Reservoir, whose main objective is the storage of the extracted water. The reservoir is located on the altitude 584 M.A.S.L. approximately, will have an approximate surface of 375 ha and take advantage of two natural basins of the sector that will unite by means of the construction of a connecting channel. It will achieve a normal operating volume of 25 million m3.	In relation to the quality of water without project, this corresponds to the seawater, which will be pumped and stored in the sector of the reservoir. Although to analyze the situation with project, it is required that the reservoir is already operating-for which the owner undertakes to perform a characterization of the latter once the construction stage is completed, and to the extent that the volume of water stored it Allow-, a system modeling was performedIn order to determine the behavior of the of the physical and chemical parameters of the system. The modeling carried out determined that the evaluated system has a marked stratification for much of the year due mainly to variations in temperature in the vertical (thermal stratification), while the salinity is practically Constant in the reservoir and does not vary in time. The results show the development of a thermocline in mid-November which is maintained until the month of July, where the system loses heat on the surface and produces the complete mixture of the water column. Regarding the quality of water discharge to the sea, it is indicated that the most sensitive parameter is the temperature, due to its high range of annual variation within the reservoirs (> 10 °c). However, the normal operation of the system shows that in 96% of the events of discharge will have a ΔT, between the discharge and the marine environment, less than 3 °c approximately, which allows the dilution of the excess of temperature modeled for the scenario of Normal operation.	During the construction and in order to protect the works and Avoid the entry of fish or any other element that affects the aquatic life of the area, It will implement a work of taking and unloading with a diameter of the intake of 10 m, considering A concrete ring of 16 m diameter and 1 m high anchored on rock. A 5-metre high protection side grille will be installed on this ring with a 50 mm pass-through light. A 10-m diameter concrete cover and a protective upper grille will be installed on this gate. About the tunnels, éHese will be built in rock. Finely The reservoir will be isolated from the soil by a bituminous membrane, which has certification of safety for potable water storage and whose waterproofness protects the soil from possible seepage.	10.15

Source: Self-elaboration

Table 32. Sectoral environmental permits applicable to the project. PAS 157.

Stage	Works	Features	means to Minimize Effects on water quality	Numeral
Sectoral environmental Permit Mixed 157. Permission to carry out works of regularization or defense of natural channels.				
Construction	is contemplated Affecting two natural streams by the developmentOr a new projected path, which corresponds to the North Access road ProjectWhose Home Is In the route CH-1 in the sector of Rio Seco to about 85 km to the south of Iquique, with a length of 15.3 Km in direction south-east, So what It ends at its junction with the route A-750, about 4 km to the northeast of Caleta San Marcos.	Within the North access road, two crossing sewers will be built, one for the main ravine (big), and another for a lesser ravine (girl). The first of these consists of 2 pipes of 1.5 m in diameter of HDPE, while the other one will be 1 pipe of 1.0 m of diameter of the same material. The gutters by the cross of the roads to the ravines, are located in the Following Coordinates (WGS 84 H19S): • Cruce de Quebrada Chica: 381,273 East, 7,678,190 North • Cruce de Quebrada Grande: 381,806 East, 7,677,800 North	During construction, the trucks will be cared for, circulated or parked on the ravines. The installation of the gutters will be done minimizing the intervention of the channel. The project has defined the optimal section of the gutters by the cross of roads. It will be privileged that the works in channels are carried out to the end of the season of summer and beginning of autumn. During the operation the projected crossover works (HDPE sewers) do not produce any change in water quality under the works, as well as the concrete walls that are at the entrance and exit of these.	10.16

Source: Self-elaboration

Table 33. Sectoral environmental permits applicable to the project. PAS 160.

Installation	Works	Type of soil	Ability to use soil	Total area affected (m2)	Numeral
				Has	
Area of operations	Workshop building, warehouse and diesel group, warehouse for temporary collection of hazardous waste.	Coastal Terrace	Viii	00265	10.17
		Washout batter	Viii	00004	
Camp	Casino, offices, Bodega, 87 quadruple, 42 singles, 50 doubles, infirmary.	Coastal Terrace	Viii	1.0356	
Control Area	Control Board and Reservoir communication	Fan Aluvio-Colluvial	Viii	0.002	
Camp Facility	Offices and dining Room	Coastal Terrace	Viii	0.022	
Installation of work for the construction phase	Offices, dining room, maintenance workshop, hazardous waste, machinery warehouse, warehouse for electromagnetic equipment, exchange room.	Coastal Terrace	Viii	0.7163	
Reservoir Facility	Offices, dining room, parking and warehouse of machinery, maintenance workshop, hazardous waste, exchange room.	Fan Aluvio-Colluvial	Viii	0.8555	
Dry River Operations Installation	Offices	Hills	Viii	0.5287	

Installation	Works	Type of soil	Ability to use soil	Total area affected (m2)	Numeral
Desalination plant	Desalination plant	Coastal Terrace	Viii	0.015	
Reservoir 1 Magazine	Powder keg	Mount	Viii	0.09	
Magazine Reservoir 2	Powder keg	Fan Aluvio-Colluvial	Viii	0.09	
Magazine Sector San Marcos	Powder keg	Coastal Terrace	Viii	0.09	

Source: Self-elaboration

16.1.8. Commitments ToMbientales VOluntarios

Table 34. Chapter Commitments ToMbientales VOluntarios

Component	Measure Name	Measurement description	Implementation form and opportunity	Compliance indicator	Numeral
Biological oceanography	Technical support on marine issues	To make available to the community, a marine consultant chosen by this one under the context of consensual terms of reference with the community, with the aim of supporting in the reading and comprehension of the studies of marine environment generated by the project owner.	The hiring of the consultancy will be extended throughout the evaluation period of the project and up to 30 days following the dictation of the environmental qualification resolution.	Final report of the holder to the Superintendency of the environment, with documentation proving the hiring of the consultant, within the 90 days following the dictation of the RCA.	15.2.1.
	Participatory monitoring	As has been done so far, the conduct of marine studies or monitoring will be communicated prior to the Union independent workers, shellfish divers and helpers of Caleta de San Marcos; And the neighbors ' board. The holder also agrees to deliver the results in a timely manner.	The prior notice will be sent to the legal representatives of the trade union independent workers, shellfish divers and assistants from Caleta de San Marcos; And the Board of Neighbors, in written form, at least 5 days in advance. The results of the reports shall be made available to the community, at the holder's offices in San Marcos, from the 15 days following receipt by the Project Holder.	Delivery of half-yearly reports with letters of prior notice and results, to the legal representatives of the aforementioned bodies.	
Human environment	Work table	Open work table for all the residents of Caleta San Marcos	This work table will take place in Caleta San Marcos, at least on a semiannual stage during the construction phase.	Lifting of minutes of each work table held.	15.2.2.
	Desalination Plant Infrastructure	Deliver desalinated water to San Marcos Cove that allows them to add value to their productive tasks, allow the growth of service area, and improve the quality of life of the community.	The delivery of desalinated water will take place within 3 months after the construction of the desalination plant. However, this will depend on the local Rural drinking water system being implemented.	Written communication reporting the availability of desalinated water, sent by the project Holder to the legal representative of the Rural Drinking Water Committee.	

Component	Measure Name	Measurement description	Implementation form and opportunity	Compliance indicator	Numeral
Tourism	Installation of tourist viewpoints	To build a viewpoint from a high visibility point in the Cordillera de la Costa, in order to promote the new landscape generated by the seawater reservoir of the "Espejo de Tarapacá" project. This commitment seeks to assess the reservoir in a desert area as a new tourist attraction that can be visited. On the other hand, the second viewpoint located in the North Access road, near Caleta Rio Seco, will aim to facilitate the observation of the sea from a privileged area on the coastal cliff for such purposes. It is also considered the installation of the following signage: • Mirador Reservoir: Informative signage of the project. • Viewpoint North Access: Environmental information signage of the sector, based on the data raised in baseline. In addition, tourism-type signage will be installed in the cemetery sector for better identification of this area of patrimonial interest.	This commitment will take place within the first six months of the operation phase. Access and a esplanade for parking and landscape observation will be enabled.	A photographic record will be made when the construction of the viewpoints has been completed.	15.2.3.

Source: Self-elaboration