

OWNER: **MYKINAI S. A**

TITLE: **Semi-Annual Environmental Compliance Report for the Construction Phase of the "Luxurious VIP Exclusive Club on Skorprios Island"**

June 2021 – December 2021

**ATHENS, DECEMBER 2021**

CONSULTANT:



**GREEN 2  
SUSTAIN**

Version:

**20211223-V1**

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SEMI- ANNUAL ENVIRONMENTAL COMPLIANCE REPORT FOR THE CONSTRUCTION PHASE OF THE "LUXURIOUS  
VIP EXCLUSIVE CLUB ON SKORPIOS ISLAND"

MUNICIPALITY OF MEGANISI, LEFKADA

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## 1. Introduction

### 1.1. Description of the Project

The presented project is the Strategic Investment of a "Luxury touristic facility, VIP Exclusive Club on Skorpios island" located in Meganisi Municipality, Lefkada Regional Unit, owned by the company "MYKINAI S.A. "

The Project includes:

- Main hotel facilities, such as central hotel accommodation, individual luxury villas, sports facilities, beach service facilities, amphitheater, port facilities, heliport, and biodynamic farm with a total building area of 17,765 m<sup>2</sup>
- Auxiliary facilities which include road network refurbishment, infrastructure networks, wastewater treatment plants, freshwater, and seawater desalination units, treated wastewater reuse installations, geo-exchange systems, underwater power and fibre optic mainland connections, underwater pipeline for irrigation water.

The island belongs to the main island of Lefkada (together with the islets of Sparta, Madouri, Skorpidi, etc.), part of the wider archipelago of the Televoids or the Taffian islands (along with the islands of Kalamos, Meganisi, Arkoudi, Atokos, Kithro etc.), which in the long run have an aristocratic past, due to the personalities living in them.

In the table below the coordinates (in EGSA '87) of the island's extreme points are listed in each of the eight basic directions on the north-south and east-west axes.

Point in the Island	Axis Coordinates	
	X	Y
North- West	216357,10	4287942,06
West	215936,96	4287518,90
South- West	216255,09	4286739,48
South	216918,55	4286856,99
South- East	217197,75	4287381,74
East	217415,67	4287577,09
North- East	217541,73	4287851,64
North	217131,74	4287904,97
<b>Center</b>	216739,35	4287340,77



Figure 1.1-1: Skorpios Island

## 1.2. Scope of Semi- Annual Environmental Compliance Report

According to the Joint Ministerial Decision (JMD) No 140137/31.12.2020<sup>1</sup>, paragraph 5.1.8:

*"The project operator is obliged to appoint a person responsible for monitoring compliance with the environmental conditions, measures and restrictions set out in the present proposal (...)"*

The Environmental consultant named "**GREEN2SUSTAIN pcc**" is the company that takes on the environmental inspection.

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<sup>1</sup> Approval of environmental terms for the construction and operation of luxury touristic facility VIP Exclusive Club on Skorpios island of Meganisi Municipality, Lefkada Regional Unit, of company Mykinai SA

GREEN2SUSTAIN pcc has to supervise the Project during the construction phase and according to the JMD is responsible about the application of the environmental terms. In addition, the consultant has to deliver to the Owner of the project, two (2) 6- month reports each year until 2023. These reports are going to record the monitoring of the environmental conditions from the construction and operation phase of the project. Also, the consultant is obligated to deliver to the Owner one (1) summary annual report. These reports, above, have to published on Project's website for the public.

### 1.3. Owner of the Project

Project owner is the private company MYKINAI S.A.

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### 1.4. Reporting and Editing Team

The compilation of the study was undertaken by:

#### **GREEN2SUSTAIN pcc**

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The reporting team includes the scientists presented below.

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*Study Team Member*

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## 2. Environmental Features

The analytical elements of the on-site inspection are presented in the following sections. Also, at the end of each section is presented a summary of the findings which observed by GREEN2SUSTAIN's team.

### 2.1. Terrestrial environment

Regarding the man-made environment (and especially the active construction sites and their surrounding area) the general provisions in force followed by all working staff and the various findings are described in the following sections.

#### 2.1.1. Roads & Movement

##### **General provisions**

- New road construction is not allowed.
- Existing road and path widening is not allowed.
- Road regular maintenance is allowed.
- Any permanent asphaltting or cementing of surfaces that do not meet the necessary operational needs of the activities is prohibited
- Machinery and trucks should move only on covered surfaces and not on natural soil to avoid soil compaction. Overloading thereof should be avoided.
- Regular wetting of non-paved roads and surfaces should take place.
- Speed limit 15km/h on non-paved roads or roads in bad condition.
- All movement corridors should be clean and wetted.
- The project's vehicles must be properly maintained and should be issued a certificate by a certified Test Center ('KTEO').
- The improvements of the forest road network should be done separately from other activities according to the plan submitted within the EIA. Working sections should not exceed 250 m.
- All movements of machinery and vehicles outside road network is prohibited.
- Car drivers and pedestrians should be sufficiently warned about the movements of trucks in the ports (signs visible 24h, personnel with flags throughout works, etc.)
- Appropriate improvements to the dock at Perigiali to enable use of 30 t trucks and other machinery.
- The maximum truck movement at Nydri or Perigiali is 8 per hour (4 for each direction).
- Average truck speed at Nydri or Perigiali: 30 km/h.
- Ship itineraries: Up to 10 per day for materials; Up to 5 per week for machinery

### Findings by the Environmental Consultant

- Average ship itineraries for the reporting period are below or equal to the imposed by the JMD limit.
- All in-island paved network is clean and is regularly wetted during summer to prevent airborne dust. Wetting is done from 3 to 5 times during working hours regularly and from late October on call when deemed needed.
- Speed limits are respected by all personnel.
- Warning signs about truck traffic and collision hazards are present on all the road networks.
- Trucks and machinery are moving outside paved roads only inside the limits of the various construction sites.



*Figure 2.1-1: Main Road warning signs.*



Figure 2.1-2: Warning signs and protective net in Local construction site near the sea.



Figure 2.1-3: Truck commuting from excavation area to construction sites.

### 2.1.2. Machinery

#### General provisions

- All machinery presents should have their exhausts turned upwards or on their side to prevent dust.
- **IMPORTANT:** the noise limits for construction sites are not clear for this construction. They are subject to control by regional authorities. It is important that excess noise should be avoided.
- A daily log of fuel consumptions for all machinery is kept at site manager's office.
- The dropping height during bulk materials handling is kept to the minimum possible according to GMPs.

#### Findings by the Environmental Consultant

- All trucks and machinery are in good shape and their certifications are available at the site managers office.
- Exhausts are not facing the ground.
- Fuel logs are available at the site managers office.

### 2.1.3. Working Sites

#### General provisions

- Marking of the project's working spaces with suitable fences should take place.
- Construction sites should have appropriate fencing, so that it is not possible for unauthorized persons to pass through them and to ensure the realization of the works within the fenced area
- Simultaneous use of machinery within a 50 m area should be avoided and idle machinery/trucks should be set off, to minimize emissions
- Site access should be hardened, maybe with leftovers from concrete preparation, or recycled gravel or crushed materials.
- Wheels' cleaning should be used to avoid dirtiness at entrance/exit.
- Reduce leaks that may occur (mainly embankments), avoid earthworks during heavy rainfall in the area. In any case, care should be taken to avoid dispersion of the deposited material by the rain.
- Paving or soil compaction should be done only, if necessary, for safety reasons.
- No maintenance of vehicles or machinery should take place on-site. The repair of vehicles within the worksite area is forbidden. Maintenance should take place in properly licensed installations.
- Access roads should have appropriate marking to protect pedestrians and vehicles. The signs should be visible day and night.
- In the working site, there should be night security lighting.
- Lighting at construction sites should be limited to areas where it is deemed necessary for the smooth execution of work and the safety of staff.
- Any rock surfaces that will be uncovered during works and they are not part of landscaping design, should be rehabilitated and covered with plants and/or soil (depending on geotechnical characteristics)
- Take all necessary measures to prevent accidents for both employees and visitors. For this purpose, place warning signs of possible dangers that run through the above.
- Keep daily log of start-end of works at site manager's office.
- Chemical toilets or regular toilets should be available to the construction personnel.
- After the completion of the construction works, the space must be rehabilitated according to the provisions of the EIA.

#### Findings by the Environmental Consultant

For the reporting period all of the above provisions were found to be respected and the various sites were fully compliant.

- Night lighting in construction sites is not being used yet as no works are in progress after sunset, to minimize nuisance to the natural environment.
- Fencing is present to mark the limits of the work areas. In several sites fencing on one side is not installed since they border with forest areas.

#### 2.1.4. Materials & Waste Management

##### General provisions

- The speed of movement of the vehicles of the construction site inside the field does not exceed 30 km/h.
- The transport of excavation / demolition materials, as well as all materials that will be used in the project in quantities that require more than five trucks per day, to be carried out according to a material transport plan.
- The building materials that will be used for the construction of the projects should be environmentally friendly, free from organic solvents and other substances harmful to health and the environment.
- It is forbidden to place rubble, tools, equipment, construction materials, waste, offices, locker rooms, etc. inside streams, forest areas, seashore line and other areas governed by protective protocols other than machinery or vehicles that are necessary for the construction of the project.
- The needs of the project in concrete are covered as a priority by legally operating existing units.
- Uncontrolled washing of concrete production or transport equipment and dumping of liquid residues in the work area as well as in the wider project area is prohibited. Liquid concrete residues, if this comes from external suppliers, should be returned under the responsibility of the supplier to the concrete production facility.
- Any storage of materials outside the area of the construction is forbidden.
- Waste produced during the construction phase of the project should be collected in suitable areas within the worksite and/or in suitable containers.
- Waste oils and lubricants should not be disposed or temporary stored on any natural ground, but on closed, secluded, and lined structures.
- Earthworks and soil piles should be wetted regularly from May to October.
- In case of any leakage of fuel or lubricants, have suitable absorbent materials stored in an easily accessible place on the construction site (e.g. sand, sawdust, etc.). After their use the absorbent materials are collected carefully in barrels, and then be managed according to current hazardous waste management provisions.
- In case of strong wind and dust plumes, special measures should be taken, to be decided per case.
- It is forbidden to burn any kind of materials (tires, oils, etc.).
- If excess excavation materials are required to be deposited in storage chambers, they should be located outside forest and reforested areas, sensitive ecosystems, which are approved after the submission and evaluation of a relevant Technical Environmental Study.
- The excavation material should be prioritized to be utilized, if that is possible, for the coverage of various needs of the project, e.g., geomorphological smoothing of individual areas/parts of the works, slope support etc., taking all possible care for the minimization of the alteration of the existing morphology of the area.
- Construction and demolition waste (including excavation material) should be done according to legislation, considering the provision for their maximum reuse.

- The excavation-embankment balance is intended to be zero by re-using the appropriate quantities of excavations for the necessary embankments.
- Daily logs are kept at the site-manager's office for:
  - excavation material,
  - processed material,
  - reused material,
  - Volume of excavated material,
  - Quantity of in-situ concrete,
  - Number of workers (minimum-maximum).
- Apply separation at source and separate collection of waste at the sites.
- Hazardous waste to be collected in suitable sealed containers and delivered to licensed hazardous waste collection and transport companies
- Suitable bins for the disposal of urban-type solid waste are available at the worksite area.
- The management of hazardous waste, if such exists, should take place in accordance with respective legislation. In particular, hazardous waste should be collected in suitable sealed containers and forwarded to companies licensed for the collection and transport of hazardous waste.
- Pollution of surface and groundwater by any kind of runoff is prohibited, as well as discharge of any non-biodegradable substances on the ground
- In any construction activity where there is a possibility of emission of dust or odors, equipment should be operated to ensure a drastic reduction of these emissions, while the times of these processes should be minimized.
- Loading - depositing of loose materials and the routes of construction vehicles within the construction zone, during the dry periods of the year to be done under wetting or in an equivalent way of dust reduction.
- In case of use of fixed mechanical installations that due to functional characteristics cause vibrations, they should be based on anti-vibration soles or special elastic anti-vibration layers to avoid relevant nuisance and the propagation of ground-borne noise.
- Excavations using explosives should be limited to what is absolutely necessary and blasting should be as low-intensity as possible.
- During the controlled micro-blasting, use a protective cover (e.g., rubber), dust control equipment to minimize hazards and to prevent rocks or debris from escaping from the work area.

### Findings by the Environmental Consultant

For the reporting period all of the above provisions were found to be respected and the various sites were fully compliant. All the mentioned logs are kept at the site manager's office for reference.

- It is noted that from August 2021 and on, a new entrance-exit corridor is in operation for the materials, machinery, and waste transportation in Perigiali providing safer access for the trucks and personnel to the dock.



*Figure 2.1-4: Loading of ferry to Perigiali port.*



Figure 2.1-5: Excavation material transport with Covered trucks.

### 2.1.5. Water Management

#### General provisions

- Each construction site should have a drainage ditch at an upstream location, so running waters do not wash-away materials. The ditch should have a collection trap for debris.
- Debris from running waters should be blended with excavation materials only if it is clean of macroscopic indications of waste or oily substances
- When materials are stockpiled, the natural watercourses should not be blocked. Suitable box or cylindrical culverts should be used to maintain natural drainage flow.
- Monitor water consumption at the site.

#### Findings by the Environmental Consultant

- Water consumption at the construction sites is logged. Separate human consumption, wetting consumption and building activities consumption. A daily-log is kept at the site-manager's office.
- A policy is in place to reduce water consumptions to the minimum.
- All active construction sites have sufficient drainage ditches.
- No perturbation observed to the ground waters by the construction.

### 2.1.6. Personnel Health and Safety

#### General provisions

- All personnel must accept and comply with the health and safety poliAll personnel using noise-producing devices or working in distance of less than 50 m from such, should wear Personal Protective Equipment.
- All personnel should be made aware of the Good Management Practices adopted and if needed should be trained to apply these provisions.
- Site manager must ensure there is adequate and appropriate supervision in place.
- All employees must have instruction and training in how to deal with the possible construction risks (by the site manager or the subcontractors).
- No entrance to any construction site is allowed without the minimum PPE (shoes, helmet, reflective vest).

#### Findings by the Environmental Consultant

The provisions regarding Health & Safety are all followed, and all the sites are fully compliant.

- All personnel are very conscientious with the use of PPE.
- All possible preventive measures to avoid accidents are in place.
- A doctor is always available on site to provide first aid in case of accidents.
- Due to Covid-19 all health protocols applied by the state are strictly followed to ensure compliance. Vaccination certificates or recent tests are checked upon entrance.

### 2.1.7. Fire safety

#### General provisions

- During the operation of the worksite all fire protection measures should be taken for the case of fire from the operation of machinery, repairs etc. and for the minimization of the danger of spreading to nearby areas/buildings.
- The fire protection method of management should be inspected and approved by the competent Firefighting Service before the commencement of the works, where applicable.
- If construction work is carried out during the summer, be duly informed of the Fire Service.

#### Findings by the Environmental Consultant

- The island's fire truck stations at various sites during the construction hours.
- A permanent fire protection network exists in the island with numerous water outlets, along the road network, which is inspected periodically to ensure good operation.
- A Fire Safety Plan (FSP) is in force and is kept at the manager's office.



*Figure 2.1-6: Firefighting station*



*Figure 2.1-7: Fire truck for fire protection.*

## 2.2. Natural environment

Regarding the natural environment of the island and its protection the general provisions in force and the respective findings from the supervision team are presented in the following sections.

### 2.2.1. Forest areas

- The deposition of materials, even temporary, in forest areas, in parts of the hydrographic network as well as in the sea area is prohibited.

#### Findings by the Environmental Consultant

- The forest areas of the island of Skorpios are intact and in good condition with no signs of human activity present in them.
- The boundaries of the forest area are marked on areas next to the various construction sites with colored poles to be clearly visible by all staff.
- Several trees (mainly pines) outside forest areas have been cut at various sites-locations for safety reasons. The extended and complicated root system of this species does not allow its safe relocation. The cuts were approved by the local Forestry Agency.
- Lower vegetation was cleared also for safety reasons.



Figure 3.2-1: Marked poles defining forest area boundaries at main construction site K2 area.



*Figure 2.2-2: Lower Vegetation cleaning.*

### Morphological and topological characteristics

There is no change on the morphological and topological characteristics of the area. Though it is noted that according to the JMD 140137/31.12.2020 (article 6, par. 5.2.3) to maintain the morphological characteristics there is a provision:

*"To utilize the existing vegetation to every possible extent as an optical barrier to hide the construction sites from the sea around the island"* and respectively from the nearest villages Nydri and Meganisi.

For the reporting period it is found that compliance with this provision was achieved on July 2021 and onwards. With the progress made on several excavations the existing vegetation at most areas can cover the constructions worksites and the machinery operating in them from the sea and Nydri village.

### 2.2.2. Noise effects and vibrations

It is inevitable that during the construction of such a project there would be variable construction site noise, depending upon the activities taking place and also vibrations due to excavation and demolition works and the several movements of machinery. Noisy activities on site include the use of jackhammers, dump trucks, cement mixers, cement cutters, electric saws, tamping machines and welding machines, as well as noise generated from hand tools such as sledgehammers and drills. The following general provisions are in force for Skorpios construction sites:

#### General provisions

- Wherever noisy equipment is used (e.g., air-hammers), noise barriers should be used at least between the site and inhabited buildings (if they are closer than 50 m) and between site and forest.
- The noise barriers to be used should have a specific weight of at least 8 kg/m<sup>2</sup>, without gaps at the joints.
- Alternatively, noise barriers to be used should have a coverage of mineral wool or straw slabs.
- Noisy equipment should have noise shields and silencers. Quiet hours should always maintain (Police Decision #3, 1996)
- Personnel working on sites where noisy equipment is operated should always wear hearing protection devices (HPDs).
- Noise and vibrations to be monitored periodically by appropriate sample measurements on several sites.

- Avoid to the fullest possible extent the simultaneous operation of machinery in a close range to prevent augmentation of the produced noise.

### **Findings by the Environmental Consultant**

For the reporting period the following conclusions were made:

- Simultaneous operation of machinery within a 50m radius was observed at several sites. This provision is hard to comply with. It is apparent that SIMOPs allow the efficient and timely execution of activities and the progress of the project. However, care should be taken in order to ensure the safe and environmentally sustainable execution of operations in sensitive ecosystems and NATURA protected areas. The site manager and all sub-contractors are aware.
- No noise barriers are in use during the excavation works in Main Residence & Multi Sports Facility areas. All sub-contractors are aware of the need to use noise barriers and noise shields whenever applicable.
- The site manager, pointed out that most noise-producing machinery is designed with some kind of noise protection equipment, such as in-built silencers.
- Noise barriers maybe be used on following phases.
- The supervising team during the reporting period took several sample noise measurements with a certified instrument both on active construction sites but also on other areas around the island to assess "background" noise. A periodic monitoring and logging program is in place in compliance with the Environmental Management Plan (EMP) for the Construction.
- Micro-blasting procedures are followed to reduce noise and progress the excavation faster. During the blasts the vibrations are monitored with a seismograph and are found to be minimal and below limits. Regarding the noise produced, the blasts are fully compliant with minimal noise only for some seconds.



Figure 2.2-3: Local construction site during micro-blast procedure. No dust emissions present.



Figure 2.2-4: Noise recordings at Local construction site.

## 2.3. Marine Environment

Regarding the marine environment and its protection, the following general provisions are in force and followed by all working staff:

- Before work commencement, the boundaries of marine areas (higher part of beaches, fore-shore line, according to official decision) should be marked clearly using a marking tape, which should be maintained until the end of the works in the area.
- No excavation or intervention or embankment or disposal in the sea is allowed.
- In case there are places for temporary storage of excavation materials, near the port facilities, to construct appropriate devices for retaining suspended solids to prevent leaks with solids in the sea. Runoff into the sea is allowed after solids filtration up to about 50  $\mu\text{m}$ .
- Restriction of free anchorage of marine vessels is in place
- A daily log of all itineraries is kept at site manager's office, include scope of itinerary, either for construction or personnel transportation needs.

### Findings by the Environmental Consultant

During the reporting period **no marine works were performed**. Furthermore, all appropriate measures were taken to prevent materials runoff into the sea from working sites in a close range.



Figure 2.3-1: Works in progress at Local construction site near the sea. Silt curtain in place for protection.



*Figure 2.3-2: Seawater quality during GREEN2SUSTAIN inspector’s visit.*

### 3. Conclusion

The company recognizes that our presence in the heart of the Ionian archipelago, is a great historical and social responsibility. We know that despite our efforts, our business will affect the local ecosystem and the local community and so we will make every effort to minimize our footprint, through our commitment to protect the environment and local communities, by promoting education, taking action and promoting awareness to the public, to our employees and to our visitors.

According to the findings and the general measures presented above, it is concluded that the construction of the touristic facility on Skorpios Island, for the time period from June to December of the year 2021, is fully compliant not only with its approved Environmental Terms according to the Joint Ministerial Decision (JMD) but also with the international Best Management Practices (BMP's).

From its inception, environmental and socially sustainable initiatives have been an integral part of Skorpios operational culture. The area is in the centre of the Ionian archipelago, among important marine species, fish, and mammals, and it is surrounded by a robust marine ecosystem, based on *Posidonia oceanica* meadows, where the traditional Ionian way of life centred on the sea and its resources.

Skorpios owner is committed to collaborate with scientists and specialists to continue monitoring of the island's performance in accordance with internationally recognised approaches on environment and biodiversity.