



**ARTA PREVEZA LEASE AREA  
ENVIRONMENTAL REPORT 2019**

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## ARTA - PREVEZA LEASE AREA – ENVIRONMENTAL REPORT 2019

### HSE Policies & System, Environmental Studies and Implementation

#### 1. Introduction

The following are representing the implementation of HELPE's policies and methodologies related to the Arta-Preveza Lease Area.

Hellenic Petroleum has operated during the past in this area as an operator and has gained a deep understanding and knowledge of the context, regulations, local communities' relations and management that could guarantee a smoother development process in the Lease Area Arta-Preveza with no impact to the environment and the local communities. On March 16<sup>th</sup> 2018, the Greek State awarded a Lease Agreement for Hydrocarbon Exploration and Production in the onshore area of Arta-Preveza in Western Greece.

Hellenic Petroleum, acting as the sole Operator, is fulfilling its commitments and has planned the exploration work program by implementing the most up-to-date, safe and environmentally friendly technological methods and practices. According to the Lease Agreement and the Provisions of Article 12 for «Environmental Protection», the Lessee (Hellenic Petroleum) *«shall not be liable for any environmental condition or damage existing in the Contract Area prior to the commencement of the Lessee's operation therein. For this purpose, the Lessee shall prepare a baseline report, to detail the condition of the environmental parameters and resources at the time prior to operation commencement. The baseline report will be submitted for review to the Lessor (Hellenic Hydrocarbons Resources Management – HHRM). If no objections will rise by the latter within twenty (20) Business Days of its submission, the report is deemed accepted».*

Furthermore, and according to the Provisions of Article 12 for «Environmental Protection», in case of activities for which an Environmental Impact Assessment (EIA) is not mandatory, but it is reasonably expected that any minor environmental impacts might occur, as in particular for the case of geophysical surveys, the Lessee shall prepare an Environmental Action Plan (EAP). The EAP will aim to determine, assess and mitigate these impacts, focusing on prevention and minimization thereof in accordance with Good Oilfield Practices.

Hellenic Petroleum is planning to execute a 2D Land Geophysical Survey (LGS) with the outmost respect to the local, social and physical environment of Arta-Preveza Lease Area. Before the commencement of the geophysical campaign, Hellenic Petroleum will develop policies, procedures, manuals and studies related to this activity. The related tasks and studies include the following:

- Environmental Baseline Report in order to define and evaluate the state of the Environment in the exploration area.

- Environmental Action Plan for the 2D LGS in order to describe the environmental sensitivities in relation to the activities of the geophysical survey and the measures that have to be taken to avoid any possible damage to the environment, the monuments and/or buildings
- A dedicated Environmental Monitoring Plan (EMP) aiming to minimize any possible impact in the proximity of the identified environmental sensitivities.
- The establishment, organization and operation of a discrete Environmental Unit. This Unit will be organized and operated under the sole responsibility of Hellenic Petroleum, which has been granted the right to explore and exploit hydrocarbons in the Lease Area.

## 2. HSE Studies and Reports

### 2.1. Environmental Baseline Reports & Environmental Action Plan

#### *Environmental Baseline Report*

The purpose of the Baseline Environmental Report is to collect and evaluate the existing data as well as the current state of the environment in the exploration area in order to:

- Survey the condition of the environment within the exploration area before starting any work, to ensure non-liability of the contractor for environmental damage that may occur in the exploration area from other activities.
- Be part of an integrated system for monitoring the condition of the environment in the exploration area, to allow the monitoring of any impact of the individual stages of the exploration program.

The elaboration of the Environmental Baseline Conditions within the Exploration Area, will be based on the requirements of the Joint Ministerial Decision (JMD) 10776/02.03.2017 “Approval of Strategic Environmental Assessment (SEA) for hydrocarbon exploration and production in the area of Arta-Preveza”, according to which environmental indicators, shall be used as fundamentals of monitoring and they shall represent in a comprehensive way, important aspects of developments in the environment.

All environmental data have to be collected and evaluated considering that this information will feed the Environmental Action Plan (EAP), which will be prepared and submitted prior to the commencement of the 2D Land Geophysical Survey. The contents of the Environmental Baseline Report (EBR) will be appropriately adapted to the conditions of the Lease Area and in compliance with Ministry’s requirements for:

- ✓ 1<sup>st</sup> Stage Environmental Baseline Report Arta-Preveza Block
- ✓ 2<sup>nd</sup> Stage Environmental Baseline Report Arta-Preveza Block

The Report shall address the existing physical, biological and socioeconomic environment and sensitivities of “Arta-Preveza” Lease Area and provide any updated information or newly published data not covered in the Strategic Environmental Assessment (SEA).

Under physical and biological environment, topics to be included are topography and landscape, soil condition, geological characteristics, hydrographic network (including surface and underground water parameters), ecosystems (including flora & fauna), wildlife protected sites and conservation areas. Also including, the description of the main characteristics of the existing socioeconomic environment, such as land use, infrastructure, cultural heritage sites commercial and touristic activities comprising also atmospheric and acoustic characteristics of the Environment.

In addition, the development of an environmental indicators catalogue is an essential element of the organization and monitoring of the state of the natural and human environment, as

well as of the significant environmental impacts on individual environmental parameters. Environmental indicators are a numeric or descriptive classification of a large number of environmental parameters, which have the objective to provide information extraction, which may become very useful in the assessment of environmental quality. The use of indicators facilitates the comparison of environmental quality in different geographical areas and different periods. Based on the aforementioned, the most appropriate means and methodologies will be developed to address the most important decisions as far as the protection of the physical and human environment is concerned.

On August 23<sup>rd</sup> 2018, the final Environmental Baseline Report (EBR) has been submitted for review and approval by the Competent Authorities and there were no objections made on that time within the twenty (20) days by the Lessor, the Hellenic Hydrocarbon Resources Management (HHRM). Thus, according to the Lease Agreement and the Provisions of Article 12 for «Environmental Protection», the report was deemed accepted.

An unofficial opinion received from Amvrakikos Management Body upon EBR and HELPE Arta - Preveza, incorporated the major comments. Thus, an updated version of EBR resubmitted to HHRM (EDEY) on May 20<sup>th</sup> 2019. Finally, EBR's positive acceptance by the Environmental Licensing Department (DIPA) of the Ministry of Environment and Energy (YPEN) was sent officially to HHRM on 12<sup>th</sup> of August 2019.

### ***Environmental Action Plan (EAP)***

The main objectives of the Environmental Action Plan are the following:

- the assessment and evaluation of impacts of the proposed activities on the environmental components;
- the assessment and evaluation of any potential environmental risks during the geophysical acquisition activity;
- the proposition of mitigation measures in order to minimize any potential risks and impacts (if any)
- the relevant environmental monitoring during the project activities.

In particular, in the Decision of the approval of the SEA study the following requirements of the Environmental Action Plan were set as below:

- To identify the best option for the environment between technically suitable methods of vibration, especially regarding the choice between controlled mild explosions or mechanical soil vibrator.
- To prevent any potential damage to monuments and buildings.
- Identification of appropriate locations and time schedule of explosions or vibrations in order to minimize disturbance of ecological functions in areas with protected natural environment as well as anthropogenic activities in urban and rural areas.
- Implementation of an environmental monitoring program and environmental management procedures throughout the period of the works by a specialized Environmental Unit.

- Sets environmental commitments in order to reduce any potential environmental impacts from the implementation of the 2D Geophysical Survey.
- Identify mitigation measures for the protection of sensitive elements of the biotic, abiotic, cultural and anthropogenic environment.
- Also, to ensure the application of the following requirements:
  - Compliance with all safety rules to prevent accidents with an impact on humans and the environment,
  - Adjusting the parameters (charges, depths, distances etc.) to minimize permanent soil surface alterations.

During the preparation and completion of the Environmental Action Plan (EAP) for the Lease Area "Arta-Preveza", the aforementioned objectives will be considered in a way that ensures the quality of the results under the existing environmental legislation and according to the best practices used for the implementation of two - dimensional (2D) land geophysical acquisition surveys internationally.

In the context of the Environmental Action Plan (EAP), the potential impacts of the project activities will be identified, with regard to abiotic, biotic and human environment. Through the objectives set out in the Joint Ministerial Decision (JMD) for the approval of the Strategic Environmental Assessment (SEA) of "Arta-Preveza" Lease Area, the EAP should foresee potential impacts that may be observed as a result of key aspects or activities of the geophysical acquisition program.

Thus, the Environmental Action Plan will define the existing conditions and restrictions in the proposed immediate areas of the geophysical acquisition program. Early recognition of the impacts that may occur in the area of the execution of the proposed program minimizes the likelihood of long-term adverse environmental effects and allows the proposal and subsequent implementation of mitigation measures in order to avoid, reduce or address any potential complications.

Additionally, a Letter was sent by HELPE Arta – Preveza to Epirus Water Directorate and specifically to the Department of Water Resources Monitoring and Protection in order to advise on the compatibility of the full seismic acquisition program with the River Basin Management Plan of the Epirus Water District. The Letter was sent on 25/6/2019 and a positive response was received on September 17<sup>th</sup> 2019.

Moreover, a mini-EAP concerning the test-line and the immediate areas of the related activities has been submitted by HELPE Arta-Preveza, on February 6<sup>th</sup> for review and approval to the relevant authorities. On August 12<sup>th</sup> of 2019 the positive acceptance of the mini-EAP for the test line was sent by DIPA to HHRM.

The main objectives of this particular mini EAP is to study an area within a 500-meter corridor on either side of the 6,5 km long section of the geophysical survey line AP LINE 07 (test line). The test line is aiming to assess and estimate the parameters of the total geophysical survey (i.e. testing the pairs charge and depth for different lithologies (e.g. limestone and flysch), laid out the line of geophones using a shot line of around 6 km with a pair of shots at every Shot point). In addition, Technical Description of the terrestrial geophysical survey program of the

lease area "Arta - Preveza" was submitted to the related Forestry and Antiquities Authorities for approval.

The mini-EAP for the test line was sent by HELPE Arta-Preveza to the Minister of Environment & Energy (YPEN) for approval and signing on October 10<sup>th</sup> 2019.

On October 9<sup>th</sup> 2019, the final main EAP report for the full 2D Geophysical Survey submitted by HELPE Arta-Preveza for approval to the relevant authorities.

In the context of the relevant LGS permitting HELPE Arta-Preveza has already requested and obtained all relevant permits issued from the involved Forestry Offices and Archeological Services of Epirus as well as from the Central Archeological Council (Ministry of Culture and Sports).

## **2.2. Environmental Monitoring Program**

For a complete protection and sustainable management of the local environment, special care should be taken to prevent, limit and address the environmental impacts on the lease area during the period of the related activities. To this aim, a major objective of the submitted Environmental Action Plan for Arta - Preveza is the establishment of the requirements for setting up a specific Environmental Monitoring Program and an Environmental Unit throughout the course of the 2D Land Geophysical Survey (LGS) works. Thus an environmental unit has been established by the HELPE Arta-Preveza Exploration and Production of Hydrocarbons S.A. according to the Joint Ministerial Decision (JMD) No. 11573\_07032017 article B.II.1. The Environmental unit teams are expected to start their works in parallel with the LGS by the 1<sup>st</sup> quarter of 2020 (March 2020). Such a teams will be in the field of the survey and will implement the environmental monitoring program through a multidisciplinary team of scientists: i.e. Ornithologists, Archeologist, Biologists, and Environmental Engineers etc. These personnel will monitor the field works on a daily basis, before, during and after the completion of the works.

- 1.) The impact of the implementation of the "Project" will be assessed, the adequacy of the mitigations measures shall be confirmed as well as the Contractor 's restoration work shall be overseen by this team. The Environmental Unit teams will consists of three main sub-teams: Environmental Monitoring Teams (Acoustic Noise Monitoring Team and Vibration & Waters Monitoring Team)
- 2.) Natural Environment Team
- 3.) Cultural Heritage Team

Moreover, according to the above Joint Ministerial Decision (JMD No. 11573\_07.03.2017), an Environmental Monitoring Plan will be prepared in order to address the monitoring activities to be undertaken during the LGS activities. A four (4) Seasons monitoring will enable to identify the important and protected fauna and flora species and the most appropriate protection measures to be addressed as early as possible. The Environmental Monitoring Plan will be implemented during all aspects of the activities associated with the Project. The

following monitoring activities will enable immediate responses to any potential impacts of the activities:

- Water quality and surface level monitoring
- Noise and Vibration monitoring
- Atmospheric Environment - Air Quality monitoring
- Restriction Measures in the Abiotic Environment
- Ecological monitoring - Restrictive and protective measures for the physical Environment
- Restrictive and protective measures for the anthropogenic Environment (Socio-Economic Environment, Infrastructures- Historical and cultural heritage).

### **2.3. Project HSE Plan and Bridging Documentation for the 2D Land Geophysical Survey**

HELPE Arta - Preveza Exploration and Production of Hydrocarbons S.A. has an active Health, Safety, Societal and Environment protection Policy for its Hydrocarbon Exploration and Production activities, which is based on its commitment to:

- ✓ *Compliance*: Full compliance with all HSE relevant international legislations (laws, resolutions, regulations) and other requirements.
- ✓ Collaboration with competent authorities and organizations in the above areas.

#### *Health:*

- ✓ Protection and promotion of health of all employees.
- ✓ Control of health-related hazards and factors, which contribute to health risks, based on suitable standards.

#### *Occupational Safety:*

- ✓ Following preventive occupational safety instructions.
- ✓ Managing safety issues equally with other important issues.
- ✓ Ensuring contractors apply adopted HSE standards in the main office and the field.

#### *Pollution Prevention:*

- ✓ High consideration for environmental protection and pursuit of lower emissions, waste disposal and effluents that potentially have negative impact on the environment.
- ✓ Belief of the management that every employee is responsible for the environmental compliance of the company and its commitment to sustainable development.

#### *Communication:*

- ✓ Responsibility of the management to communicate the HSSE policy to all employees, contractors, vendors, partners, and the public.

*Training and Preventive Awareness:*

- ✓ Establishment of the culture necessary to encourage all employees to share this commitment.
- ✓ Emphasis on HSSE awareness, investigation and recording of relevant incidents and building upon the experience gained.

*Continuous Improvement:*

- ✓ Continuous improvement of all HSSE subjects by adopting international codes, modern practices and best available techniques.
- ✓ Provision of the appropriate resources to implement this policy
- ✓ Periodic audits and reviews of the HSSE Policy and Management System as well as performance evaluation to ensure that they are up-to-date and effectively implemented.

This Policy binds all the company's personnel in Hydrocarbon Exploration and Production activities, it is an integral part of every activity and it is re-examined and amended when necessary by the company. The Contractor is responsible for the safety of his personnel that is working on site.

During the first phase of the exploration period, HELPE Arta Preveza S.A. will conduct Geological studies and onshore 2D and 3D seismic surveys and submit environmental reports and studies.

In order to identify and addresses any relevant issue concerning Hazards and potential Risks on Health, Safety and Environment (HSE) during the **2D Land Geophysical Survey** campaign, HELPE Arta - Preveza Exploration and Production of Hydrocarbons S.A. has assigned RPS Group to provide Consultancy Services for the HSE Services related to the Land Seismic Survey in Arta – Preveza.

HSE elements of executing the project are:

- Assist to the preparation of the Invitation to Tender document for selecting the MSS contractor (drafting of the HSE aspects of the project, checklists and questionnaires for evaluating HSE aspects) – Task completed.
- Participate in the evaluation of the bids submitted for the LSS in relation to the HSE aspects of each bid. Recommend preferred contractor(s) on HSE aspects and review of final proposal - Task completed. LGS contractor selected.
- Provide support to develop HSE bridging documentation between HELPE and the selected Contractor and participate in the contract finalization (acceptance of an HSE Management Process). Provide support to develop Project Health, Safety and Environmental Plan in cooperation with the selected Land Geophysical contractor.-Task ongoing. HELPE is in cooperation with RPS advisor working upon completing the Project HSE documentation.

- Perform regular HSE audits on LGS Contractor and its sub-contractors -vehicles and equipment before the commencement of work (including but not limited to a compilation of an environmental audit report and a full environmental statement of the vehicles' & equipment' environmental performance, impacts and management). Land HSE audits - compliance and regulatory based on IOGP and IAGC. Aviation HSE audits - helicopter facilities based on IAGSA and IOGP. Task will be initiated upon mobilization of the Contractor and before Projects' work commences.
- Review of the HSE plan upon progress of the works and perform periodically site visits and audits

### **3. Stakeholders Engagement and Social Monitoring (incl. in the Environmental Action Plan)**

Prior to the commencement of operations, continuous informative meetings with local communities performed in order to inform and educate upon the upcoming exploration program in Arta – Preveza Lease Area as well as to create an atmosphere of understanding that actively involves project involved or affected people and other stakeholders and that these groups are provided sufficient opportunity to voice their opinions and concerns.

Moreover, according to the Environmental Action Plan (EAP), which submitted to the competent authorities, one of its main objective set the need for the establishment of a specific Social Monitoring Program throughout the course of the 2D Land geophysical program. A dedicated Social Monitoring Program for the anthropogenic environment and more specifically for the socio-economic impact of the Project as well as the potential impact of the program on the productive activities of the 'Project Study Area' are expected to be started in parallel with the LGS by the 1st quarter of 2020 (March 2020).

Social Monitoring Teams will be in the work area and will implement the social monitoring program. The Social Monitoring Teams' personnel will monitor the relevant to the LDS work areas on a daily basis, before, during and after completion of the works.