



**FIFTH SEMI-ANNUAL
ENVIRONMENTAL
MANAGEMENT REPORT
01.07-31.12.2010**

Environment Department OLYMPIA ODOS S.A.



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Introduction

Based on the Concession Agreement (article 11.2.2), OLYMPIA ODOS S.A. is obliged, throughout the entire Concession Period to deliver to the Service, a semester environmental report, within a month after its drafting. This is the fifth semi - annual Environmental Management Report and covers the period 01.07.2010 to 31.12.2010.

The above six-month and annual reports shall be publicized in the internet site **www.olympiaodos.gr** created and maintained by the Concessionaire, in accordance with the Concession Agreement.

During the motorway's construction and operation, both the constructor as well as the operator comply with all pertinent provisions, as they are recorded in the Greek Legislation, ensuring the same for their contractors and subcontractors.

Within this framework and as a part of its Environmental Management System, the constructor, JV APION KLEOS has developed the "Environmental Legislation Monitoring Procedure", incorporating all existing pertinent legislation and updated in case the latter is amended or updated. This procedure is communicated to all parties who are obliged to then communicated to all cooperating sub-contractors.

Appendices

- APPENDIX 1 Section: Elefsina - Korinthos (excluding kakia skala)
- APPENDIX 2 Section: Ancient Korinthos I/C – k1 patra by-pass I/C
- APPENDIX 3 Section: Midilogli I/C - Amaliada
- APPENDIX 4 Section: Amaliada – Pyrgos - Tsakona
- APPENDIX 5 Archaeological investigations for Korinthos – Patras – Pyrgos - Tsakona
- APPENDIX 6 Quantitative data regarding environmental protection during construction and operation
- APPENDIX 7 U.P.A.R. approval Sythas, Ellisonas, Finikas river bridge 's files design
- APPENDIX 8 Amendment of consultancy agreement for the acoustic design of noise barriers methodology report measurement program pm 2,5&10 – vibration for the Sections "Korinthos - Patra" and "Mintinogli – K. Achaia"

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Progress of the environmental agenda

General

Appendix A of Annex 2 of the Concession Agreement states the Common Ministerial Decisions (CMD) and the Law comprising the Project’s environmental licensing and forming the main framework for the monitoring of the progress of the Project’s environmental issues.

More specifically:

1	Law 2338/1995 Thiva I/C – Elefsina Toll Plaza
2	CMD 126393/16.02.2007 Elefsina – Korinthos (excluding Kakia Skala section)
3	CMD 108569/18.10.2006 Kakia Skala
4	CMD 92073/16.05.1994 Isthmos – Ancient Korinthos I/C
5	CMD 104892/16.06.2006 Ancient Korinthos I/C – Patra By-Pass K1 I/C
6	CMD 106321/28.07.2006 Patra By-Pass K1 I/C – Mydilogli Semi-I/C
7	CMD 102696/30.05.2006 Mydilogli I/C - Amaliada
8	CMD 100163/30.05.2006 Amaliada – Tsakona

In the construction as well as in operation phase, the procedures and directives for the works’ environmental management are implemented by the Constructor, aiming at the in compliance with the terms and constraints of the above decisions.

APION KLEOS submits to OLYMPIA ODOS S.A. monthly reports regarding the progress of the construction related works.

Within the framework of the contractual obligations the Constructor has developed an Environmental Management Plan (EMP) for the Project in accordance with ISO 14001:2004.

The EMP includes the organizational structure, planning actions, duties allocation, technical methods, procedures as well as processes for the development, implementation, achievement, revision and support of the Constructor’s environmental policy as well as the compliance with the Project’s environmental terms.

The EMP constitutes the basic and overall framework for the management of environmental issues, whereas the procedures and directives area tool for the rational handling/ management of each environmental issue, taking into account the pertinent legislation and the decisions applicable to each case.

The EMP as well as the environmental management procedures/ directives are at the disposal of the competent authorities involved in the Project.

The Operator in order to comply with the Project’s environmental terms and the implementation of an Environmental Policy has elaborated a Environmental Management Plan for:

- controlling, monitoring and dealing with the environment impact of the project
- optimum management of liquid and solid waste of the Project
- promotion of optimum practices to reduce energy and resources consumption

Permits - Designs related to construction

In the framework of complying with the Concession Agreement environmental requirements, the approved environmental terms and the required environmental permits:

- a. Requests are submitted, when required, in order forest and archaeology related permits and official opinions to be issued.
- b. Special Technical Implementation Designs (STID) and when required, Technical Exploitation Designs for related works are compiled and submitted to EYPE/MEECC in order to obtain approval and permit. In herein 1, 2, 3 & 4 Appendices are presented in detail all the submitted/ approved studies in 2010.
- c. Cooperation is in progress with the Public Utility Organisations in order to relocate various networks located within the Project.
- d. In the cases where new roads opening was considered necessary in order to provide access for the drilling equipment at the test boring areas, so as to verify the stratum quality in the tunneling area, the consent and the supervision of the local Fire Service and Forest Inspection has been asked. For this purpose, "Forest Road Designs" were developed (NERCO - N. Chlykas & Co), and submitted to the local Forest Services for approval.

These earthen roads shall be up to four meters (4m) wide and designed in such way, so as to be utilized in the future as fire protection areas.

Already in this direction, the modification of project sections, as they are described in the EIS, is conducted according to the necessary process foreseen by article 13 of CMD No 11014/703/F104/14.3.2003 (H.G.G.332/B), pursuant to the approved environmental terms.

Following the aforementioned measures to address the environmental impact stated in the EIS (ch. 9) and with respect to Ancient Korinthos I/C – Patra By-Pass K1 I/C section, the Constructor is submitting a full file for approval to the competent EPAE in order to integrate the Kerinitis, Selinountas, Meganitis, Foinikas, Krathis, Sithas and Elissonas river bridges as best as possible into the landscape of particular aesthetic value (the file also contains the bridges' architectural design).

In Appendix 7 are presented the positive opinions by S.E. Korinthia/Town Planning & Environment Directorate/'EPAE' regarding the design files submitted pertaining to the Sytha river and Elissonas river bridges and by S.E. Achaia/Town Planning & Environment Directorate/'EPAE' regarding the design file pertaining to Phoinikas river bridge.

Environmental management, hazardous and non hazardous materials and waste management

During the motorway's construction and operation, both the constructor and the operator as well as the cooperating contractors and sub-contractors comply with all pertinent provisions, according to the Greek Legislation.

JV APION KLEOS in the frame of its Environmental Management Plan has developed procedures for the management of wastes. The respective "Waste Management Procedure" has been prepared for the management of waste, documenting the existing legislative framework and the means/ directives for their management.



Nea Peramos OMC



Nea Peramos OMC

The respective "Hazardous Materials Selection and Procurement Procedure" has been prepared describing all the constructor's actions contributing to the prevention of the uncontrollable use of hazardous materials during the Project's construction period.



Kiato TB



Akrata TB

During the construction and the operation of the project, waste of any nature is managed based on the pertinent legislation and the constraints/ requirements imposed by the approved environmental terms, both for the Project's existing and new sections. The respective "Waste Management Procedure" has been prepared for the management of waste, documenting the existing legislative framework and the means/ directives for their management.

The results of the Project's environmental performance, such as material recycling, mineral oil, batteries, vehicle tyres, hazardous materials, polluting substances, area restoration, excavation and demolition products etc management are presented in the Appendix 6 of this Report.

Environmental parameters, monitoring programme (noise, traffic load vibrations, air quality, water)

Air quality management as well as noise obstruction minimization due to the motorway's construction are amongst the main objectives of the Project's Constructor and its Operator.

The Constructor, based on the relevant study, designs, elaborates and implements a programme for the Project's environmental monitoring and audit (ΣΣΕ & Περιβάλλον Α.Ε.) , in order to ensure compliance with the Project's environmental requirements.

For that purpose, the Constructor develops a programme for the Project's monitoring and audit during construction.

Existing Sections

The Project's monitoring and control programme carried out during construction at the existing sections of "Elefsina - Korinthos" and "K1 Patra By-Pass I/C - Midilogli Semi-I/C" has already begun.

In these sections and in the framework of "Special Acoustic Design for sound barriers installation" was carried out a Complete Recording Programme of the daily hourly variation rate of the appropriate Road Traffic Noise rates. Moreover, a 24-hour acoustic measurement assessment of the exceeded rates was carried out in selected rates, located in proximity to the existing road sections, which are in a distance equivalent or smaller

than 200m from the nearest edge of the approved land-use plan. The above distance is calculated taking pavement's or structure's edge as starting point.

Besides the above, extra rates, which are considered acoustically sensitive, were explored, even though no complete monitoring record is held for the current acoustical environment conditions, as the those rates were not included in an approved urban design of a city or settlement. Special self-propelled, appropriate modulated, noise stations, equipped with special static

noise analysers and all-weather microphone were developed in order to satisfy the requirements of the relevant European directive regarding the environmental noise (measurement high of 4m).

Hourly rate analysis of traffic noise to the overall acoustical measurements, in combination with the geometric and town planning features of the area, which is in direct proximity to the motorway, and traffic features were the calculation basis for the final detailed structural design pertaining to length - height - sort - density and materials for the sound barriers.

Measurements have been conducted along these sections within the framework of the "Noise-Barriers Implementation Special Acoustic Design"



Sound barriers installation along Project's existing sections

elaboration which has been approved via document No 122052/8.3.2010 by EYPE/MEECC where – among others – the noise-barrier type is determine.

The construction/installation of the noise-barriers commenced and its completion is expected within 2011.

Additionally, during the motorway's operation test sound measurements shall be conducted while at the same time monitoring the traffic load per six months or less.

Air-pollution & basic meteorological data monitoring

It is provided to install self-propelled air pollution stations and basic meteorological data measurement stations, in locations, which shall be approved both by EYPE/MEECC and by the Project's Independent Engineer, in accordance with provisions of the Concession Agreement and the approved environmental terms.

Technical Design (TT & Environment S.A.) describing the technical requirements and the position of the required monitoring stations, was submitted to EYPE/MEECC in order to be approved. The positioning of the stations was carried out by taking into account the results of the "Measurements Programme for vibrations and suspended particles assessment design" which was elaborated for the sections in issue.

Along Motorway's new sections and within the framework of the "Special Final noise protection Design & Special Design for sound barrier application" were elaborated acoustical measurements in order to register the current traffic noise conditions (TT & Environment S.A.) for "Ancient Korinthos I/C - K1 Patra By-Pass I/C", "Midiligli I/C - Kato Achaia" and Rion - Antirion bridge access roads.



Pollutants monitoring motor station

Measurements Programme for vibrations and suspended particles AS 2,5 & 10 is assigned (TT & Environment S.A.) not only for the motorways sections, which presented exceeded T.N.R. (during the recent acoustical measurements programme), but also for the locations of operative working sites.

The relevant methodology report is given in the herein Appendix 8.

During Project's construction are taken measures in order to minimize vibrations produced by construction activities in buildings and in sensitive rates within the Project's zone of influence. For this purpose, apposite systems (EXORIXI S.A. or working sites privately owned equipment) were installed in critical locations, in order to measure and monitor all important variants of the phenomenon.



Measurements register the current traffic noise conditions

In parallel, the Operator carries out traffic counts at the Project's toll plazas. More specifically, each month the company drafts an operation report, including precise traffic data, i.e. number of vehicles passing through all toll plazas and the traffic composition; said report is duly submitted to the competent supervising Services of the Ministry of Infrastructures, Transport and Networks. The company has at its disposal both the primary and the processed traffic data.

Environmental parameters, monitoring programme (noise, traffic load vibrations, air quality, water)



Έλεγχος δονήσεων κατά την κατεδάφιση της γέφυρας Πάχης

Water resources management

Water resources are being managed according to the pertinent legislation and the restrictions/ limitations imposed by the approved environmental terms both for the Project's existing and the new sections.

In order to facilitate the efficient management of both surface and underground water resources, the respective "Water Resources Management Procedure" has been developed, documenting the existing legislative framework and the means/ instructions of their management.

Hydraulic Designs were developed (D. Sotiropoulos & Co, Hydro-Rationalising "L.S. Lazaridis & Co") with the aim to ensure the uninterrupted flow of surface water (e.g. rivers, streams etc) by constructing all necessary structures and taking into account a flood recurrence interval of at least 50 years.

Hydro geological Design (AQUATERRA – Ch. Kapopoulos - E. Psarropoulou & Co) is close to completion in order to be submitted to the competent Public Service. The above pertains to new water collection works, so as to cover the irrigation, fire fighting and other needs that shall arise in the

Project's short-term parking areas.

The Constructor in compliance with article 5 law 3010/2002 and in accordance with the provisions of article 11.2.1 of the Project's Concession Agreement proceeded in the development of stream delineation designs (D. Sotiropoulos & Co & L.S. Lazaridis & Co) for the stream's section extended along the Projects construction zone or abutted to it and along Korinthos - Patras section for five hundred meters downstream. The designs are being submitted to the Technical Services of the local Prefectural Administrations for approval as well as any other administrative act necessary in order to be rendered fully effective.

The respective process for Patra – Pyrgos section is also in progress.



Environmental impact response measures during construction



Sedimentation tank in Panagopoula tunnel

a. Geomorphology - Soil

In order to protect the soil from fuel leaks etc special areas with sealed floor and graded collection drain that ends in a sedimentation basin is provided in order to swill the machinery in each of the construction sites.

In the machinery maintenance or in other suitable and safe area, used oils from black oils change are temporarily stored. The management of the used black oils shall be in accordance with the provisions of PD 82/2-3-2004. By the PD is given priority to collect and dispose black oils for regeneration treatment.

All necessary measures are taken in order to avoid erosion or filtration at the slopes during the tunnel construction and the water and clay supply to the final acceptor. The sediment before being disposed is being treated in apposite sedimentation tanks.



Sedimentation tank in Panagopoula tunnel

b. Geology

Special attention is paid during construction of sections passing by geologically sensitive zones, as in those areas stability problems might emerge at the formations. In those sections shall the least possible interventions are made.

c. Ecosystems - Vegetation

In the areas where the technical structures are constructed, and mostly in the areas where bridges are constructed, all the necessary precautions are taken in order to avoid any impact on the riverside ecosystems. All possible efforts are made in order to use the fewer possible quantity of concrete. Where possible the use of gabions is preferred and the proper application/use of additives (e.g. bentonite), which are used in order to add improved features to the boring effluents during the borings.



Use of gabions



Use of gabions

Bentonite management

The final sediment originated, after works' completion, is apparently semi-solid and, beside bentonite, it contains a large amount of inorganic particles as sludge and sand. The applied method is to dry it in apposite tanks and then disposed in landfills.

Especially during the dry period, in the construction phase, all the necessary measures are taken in order to avoid dust emissions (infusion of earth materials, trucks' load covered with nets).

In some case the cleared vegetation originated materials are cut and temporarily stored in mounds in order to create organic fertilizer for future use in planting technical activities.

After clearance, excavation, collection and temporary disposal of the superficial fertile soil layer follows.



Bentonite reuse tank in Alfios River



Vegetation, planting and road cleaning

The vegetation and planting pertain to the environmental integration and protection of the areas adjacent to the project.

Existing Sections

In order to facilitate the fulfillment of the above obligations, a Final Planting Design (S. Voutsinos & Co) for the surrounding areas, the respective I/Cs, slopes and median strips was elaborated for Elefsina – Korinthos section. This design was approved by the project's Independent Engineer.

The planting of Patra By-Pass is in very good shape due to its "recent" construction and maintenance for the last period of time.

New Sections

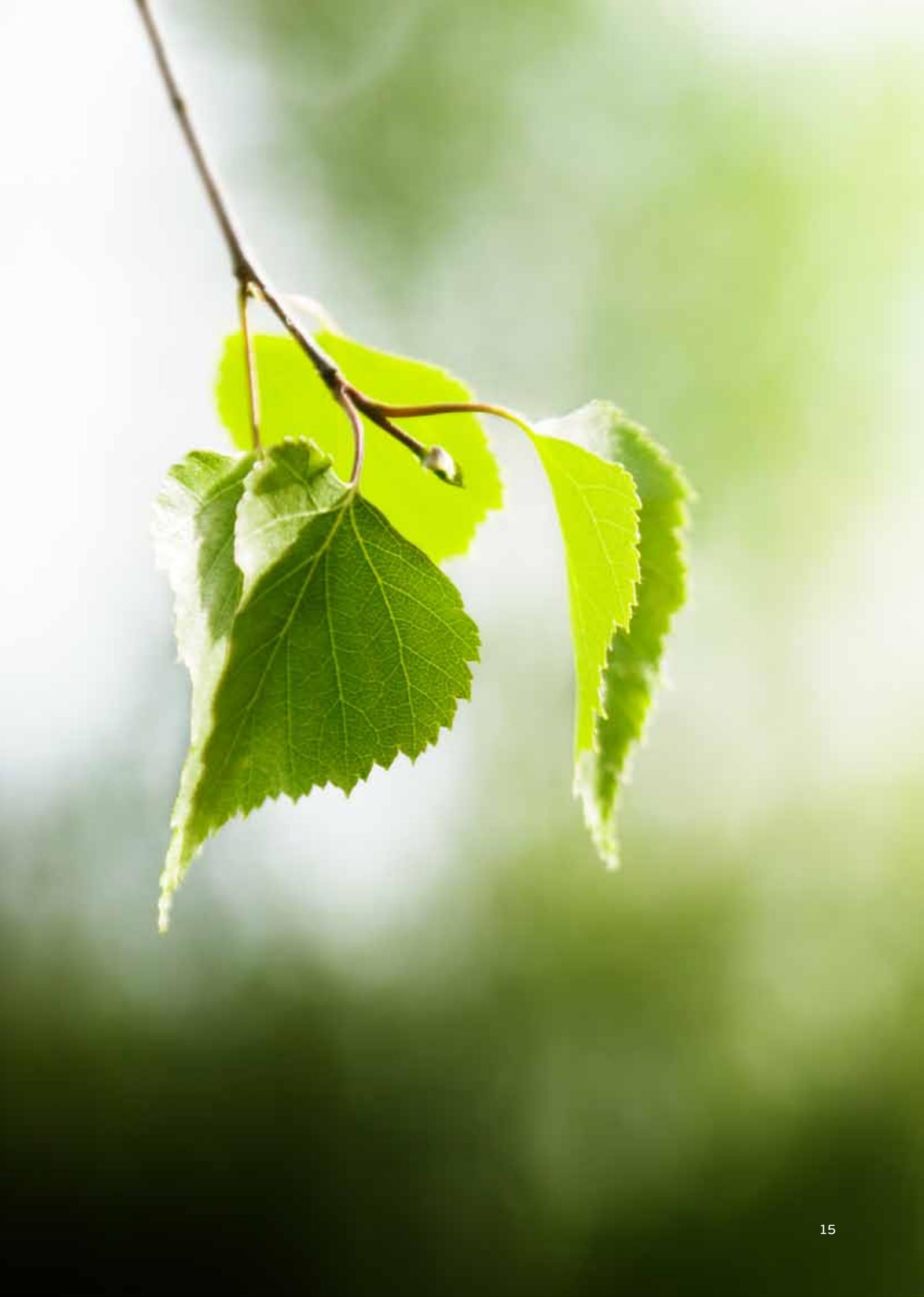
In order to facilitate the fulfillment of the above mentioned obligations the CJV conducted a relevant tender in order to find the suitable designer (agronomist, landscape architect) for the development of Planting-Technical Design for Korinthos – Patra section.

The designer (Klea Volovini) undertook the project, the relevant agreement was made and the data collection commenced towards the development of the Planting-Technical Design for the surrounding area, the respective I/Cs, embankment/cut slopes as well as the sections of the existing national road which will not be included in the motorway. The process is in progress.

The Operator's personnel and the competent subcontractors carried out regular trimming, weeding and cleaning works for the most part of the project, and specifically of 97 km of central reserve, 402 km of shoulders and of the 28 interchanges and their branches, as well as of the 45 parking areas.

Cleaning

During 2010, the Company's personnel in collaboration with external subcontractors carried out and still does regular cleaning works along the entire project (202 km), in the 28 interchanges, the toll stations (lanes, booths, pavement, surrounding area, buildings), in the tunnels and in the 45 parking areas (washing, sweeping, waste removal from bins and surrounding areas). The cleaning encompasses all the project's footprint until the expropriation boundaries.



Confrontation of extraordinary incidents, environmental accident, green areas fire

During the operation of the working sites, all fire prevention measures are taken in order to prevent fire coming potentially from working machinery, working teams, transportation of explosives and to minimize the danger of fire being expanded to adjacent areas. The way according which the fire belt is organised, was controlled and approved by the competent Fire Service before the beginning of the works.



Patrol vehicles

More specifically, fire management measures are taken in order to protect forest areas on both sides of the road.

- In the framework of road safety, Olympia Odos Operation S.A. has Patrollers and Intervention Teams patrolling the Project with specially marked vehicles dealing with incidents (immobilized vehicles, accidents, traffic problems etc.) by implementing temporary signage to safely arrange traffic and assist the emergency services (Police, Fire Brigade and Paramedics). In this framework, during the second semester of 2010: 1.945.000 (about 10.570 per day) kilometers of Patrols and Interventions were covered to supervise the road network

- 12.599 incidents were handled with the Company's assistance, such as: 8.074 immobilized vehicles (mechanical failure, flat tire, lack of fuel, abandonment), 3.068 obstacles on the pavement, 805 road accidents (34 with injured and 771 with material damage), 271 user problems (pedestrians, vehicles moving in the opposite direction, non authorized users, dangerous traffic violations), 162 traffic congestions and 219 other emergency incidents (fire, adverse weather conditions, etc.) out of which: 7.254 were handled immediately by the Company, since they were detected (located) by its own vehicles, or by its subcontractors' vehicles
- 5.3452 incidents were handled within 10' in average by the Company, since they were otherwise detected (phone, cameras etc.), while regarding the response of the subcontractors respectively: 17' for light vehicles and 30' for heavy vehicles

The company's competent personnel (Intervention Teams) implement on a daily basis temporary signage for incidents and for the safe execution of works carried out on the road either by the Operation Company or the Construction JV. Regarding Korinthos-Patra NNR special attention is paid due to it features (no central reserve) and the sections with steep turns and limited visibility. The Constructor shall work and cooperate closely with the Environmental Service and other departments of OLYMPIA ODOS S.A. in the application of the procedures – directives for the management of such issues.

Antiquities

Under the principle that cultural heritage and antiquities along the motorway shall be protected, a principle that constitutes prerequisite for the construction of the road, the Constructor has direct contact and collaboration with the competent archaeological services. According to the Concession Agreement and the Design – Construction Contract, CJV is responsible for the execution of archaeological investigations pursuing a recommendation by the pertinent archaeological service.

Works in the positions indicated in the Concession Agreement (article 13.1) and where there is a great potential of Antiquities being revealed are in progress.



Antiquities detailed data/activities are reported in the herein Appendix 5.

Training – briefing and inspection - awareness raising and corporate social responsibility activities

Environmental training aims to reinforce knowledge and raise awareness about the environment, to develop the necessary skills, to form the right behaviour, to activate and make informed decisions and responsible actions.

CJV is organizing training and briefing seminars whereas all internal inspections are accompanied by the training and briefing of all competent persons at working sites regarding issues and developments pertaining to the environment.

Each working site's environmental engineers are regularly organising meetings with all parties involved in the Project's construction, providing them with the suitable training and briefing.

The CJV's Environmental Department in cooperation with the project engineers conduct regular inspections, give the necessary instructions or directions pursuant to the Project's EMP regarding any arising environmental issue. To fulfill that goal, special reports are elaborated documenting the test results, proposing measures to deal with any environmental issues identified and accompanied by a complete photographic survey.

In the frame of its Corporate Social Responsibility regarding society and the environment , OLYMPIA ODOS S.A. supported financially the following projects :

A. Ecological festival «Earth, Wind & Music»

The 1st Ecological Festival for raising environmental awareness has been organized under the auspices of the Municipality of Ancient Olympia.in July 2010. The event has been supported by the Centre of Sustainability and Excellence in cooperation with the non governmental organization My climate base in Switzerland, under the aim to claim the event as a climate neutral event, after the calculation of the emissions made and offsetting them. For five days, Ancient Olympia has been transformed into an interactive territory and the message for environmental protection was apparent throughout the city. Olympia Odos S.A. was one of the companies that supported this initiative.

B. ECOMOBILITY Campaign 2010-2011

Olympia Odos S.A. has supported the ECOMOBILITY Campaign that aims at educating teenagers in the field of mobility and its impacts in the operation of a city and to the environment through experiential approach. This program raises environmental awareness through the message "pupils become researchers, cities are informed, society is sensitized " aiming at improving mobility conditions in the cities and promoting greener transportation habits. The ECOMOBILITY Campaign is organized by ECOCITY for the 8th year in the row and is under the auspices of the Ministry of Education, the Ministry of Infrastructure , the Ministry of Environment and Climate Change, the Ministry for the Protection of the Citizen, the European Commissioner for the environment , with the cooperation of recognized Greek scientific centers and organizations.



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