

ENVIRONMENTAL BULLETIN OF KAVALA “MEGAS ALEXANDROS” AIRPORT (KVA)

Reference year 2022

Fraport Regional Airports of Greece A S.A.

Issue year: 2023

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1. INTRODUCTION

1.1. Location

Kavala “Megas Alexandros” airport is located at the east part of the Regional Unit of Kavala, at a distance of approximately 31 Km to the south-east of the city of Kavala and of approximately 7.5 Km to the south-west of Chrysoupoli settlement. The airport occupies an area of approximately 988 acres

1.2. Administration

The Airport administratively belongs to the Municipality of Nestos and more specifically to the Municipal Unit of Keramoti and the Municipal Unit of Chrysoupoli in the area Agiasma Kavalas.

1.3. Environmental licensing

Approved Environmental Terms	
E.T. Decision Reference number	84821/95/08.07.1996
E.T. Amendment Decision Reference Number	105624/14.11.2006
	200818/23.07.2012
	172044/09.04.2014
	24353/19.05.2017
	37774/20.12.2017
	55723/3711/19.05.2023

1.4. Airport Basic Data

Airport name IATA / ICAO	KVA / LGKV
Airport location – Airport Reference Point (ARP)	Latitude: 40° 54' 48" N Longitude: 24° 37' 09" E
Altitude	5m
Number of runways	1
Operation hours (summer)	Monday / Wednesday / Thursday / Friday / Saturday / Sunday 07:30 – 22:30 Tuesday 08:00 – 23:00
Operation hours (winter)	Monday / Friday / 07:00 – 21:30 Tuesday / Thursday / 13:00 – 20:30 Wednesday / Saturday 07:00 – 14:30 Sunday 13:30 – 20:30

Runways	Length/Width			Code	
Runway	3,000 m x 45 m			05R/23L	
Full length of parallel taxiway	3,000m				
Number of taxiways	5				
Apron capacity	A	B	C	D	E

	-	-	5	-	1 (MARS)
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Employees	High season (31.08.2022)	Low season (30.11.2022)
Fraport Greece (FG) employees	25	20
Employees of other companies	520	404

Terminal	
➤ Total area (m ²)	8.569

Other buildings and service/storage areas	
➤ RFF Station (m ²)	1.288

Parking Areas	
Car parking spaces	245
Bus parking spaces	15
Taxi parking spaces	24

1.5. Airport facilities

1.5.1. Fuel Handlers

Number of fuel handler companies	
Number of fuel handler companies operating at the Airport	3

Installations inside the airport	EKO	GISSCO	HAFCO
Environmental Management System (EMS)	YES	YES	YES*

*HAFCO facility was not operating during the reference year

1.5.2. Ground Handlers

Number of ground handler companies	
Number of ground handler companies operating at the Airport	3

Installations inside the airport	SKYSERV	SWISSPORT	GOLDAIR
Environmental Management System (EMS)	YES	YES	YES

2. TRAFFIC DATA STATISTICS

2.1. Annual Traffic Data

Annual Traffic Data for the year 2022	
Overall Annual Air Traffic Movements ¹	2.587
Percent of increase or decrease in relation to the previous year	33,3%
Annual passenger traffic	251.615
Percent of increase or decrease in relation to the previous year	68,7%
Annual cargo transferred (tn)	15
Percent of increase or decrease in relation to the previous year	-67,2%

Aircraft types	
Prevailing aircraft types for domestic flights	
Aircraft type	No. of flights
AT76	405
DH8D	178
AT72	89
A320	26
C172	18
AT46	15
A319	13
C208	12
GLF5	9
A32A	8
Other	140
Prevailing aircraft types for international flights	
Aircraft type	No. of flights
A320	427
B73H	202
A32A	196
A319	157
7M8	116
A321	80
B738	80
223	76
A32B	44
F100	38
Other	250

¹ Military and training flights not included.

2.2. High season traffic data

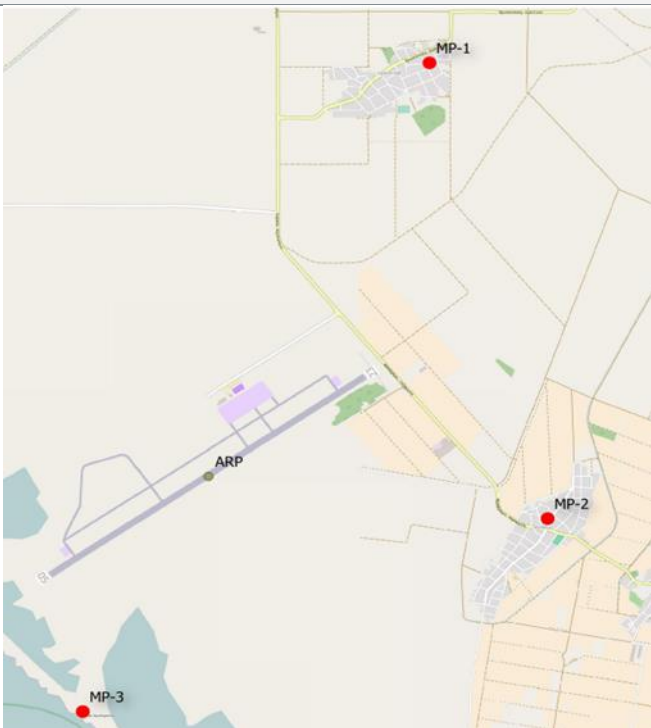
High season traffic data (June-September)	
Highest traffic month	August
Air traffic movements during the month with highest traffic	501
Air traffic movements daily average number during the month with highest traffic	16

2.3. Low season traffic data

Low season traffic data (October-May)	
Lowest traffic month	January
Air traffic movements during the month with lowest traffic	67
Air traffic movements daily average number during the month with lowest traffic	2

3. AIRCRAFT NOISE

3.1. Noise measurements during the reference year

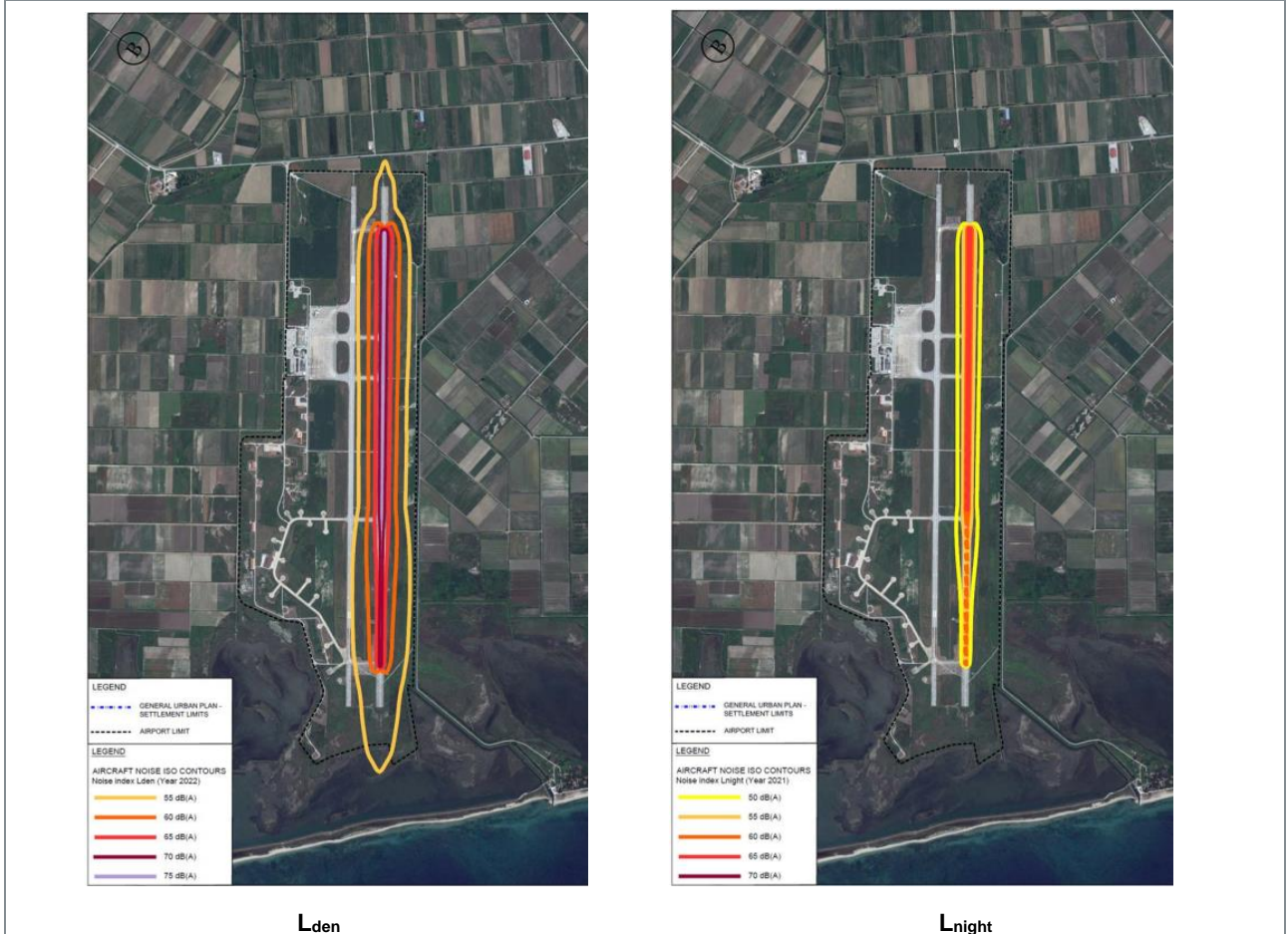
Have noise measurements at the airport’s surrounding area been performed during the reference year?		YES
Measurement points		
		
Measurement points coordinates	Measurement points description	
MP-1: 40° 57' 07" N 24° 38' 39" E	Located in Eratino, northeast of the runway in the yard of a private house. Affected by arrivals RWY 23 and departures RWY 05.	
MP-2: 40° 54' 36" N 24° 39' 26" E	Located in Agiasma, southeast of the runway on the roof of a private house. Affected by arrivals RWY 23 and departures RWY 05.	
MP-3: 40° 53' 32" N 24° 36' 21" E	Located in Agiasma Beach, south of the runway in the yard of a private house. Affected by departures RWY 23 and arrivals 05.	
Measurement period	29.06.2022 – 30.06.2022	
Noise indicators	L _{den} & L _{night}	

Summary of measurement results:

Noise levels are monitored according to the airport’s monitoring program and new approved environmental terms. No exceedance of the noise indicators levels L_{den} = 70 dB(A) and L_{night} = 60 dB(A) was observed.

3.2. Noise levels calculation based on noise simulation software

Aircraft noise levels calculation based on noise simulation software	YES
Software used: IMMI Premium (according to CNOSSOS-EU and JMD ΥΠΕΝ/ΔΚΑΠΑ/13757/255/B/16.02.2022)	
Noise indicators and respective contours calculation: L_{den} , L_{night}	




Summary of results:

For the year 2022 no buildings inside official settlement boundaries were found to be exposed to noise levels higher than the limits $L_{den}=70$ dB(A) and $L_{night}=60$ dB(A).

4. AIR QUALITY

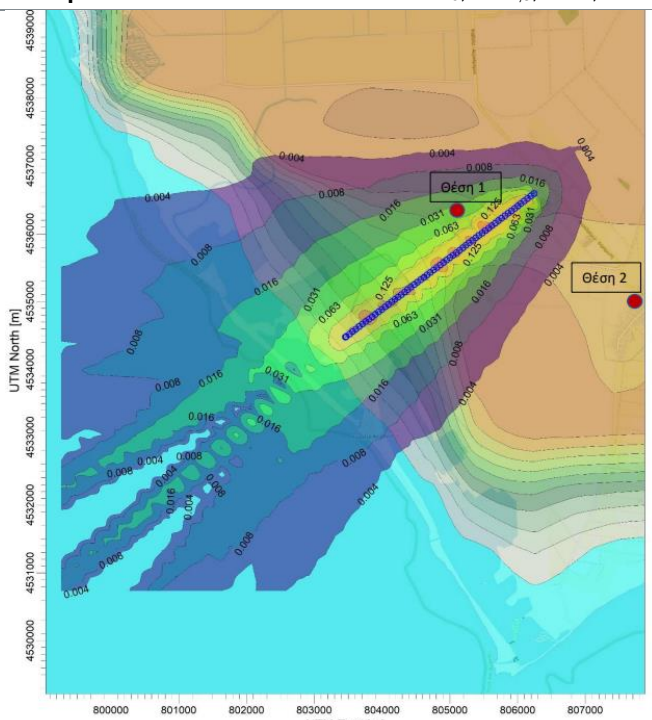
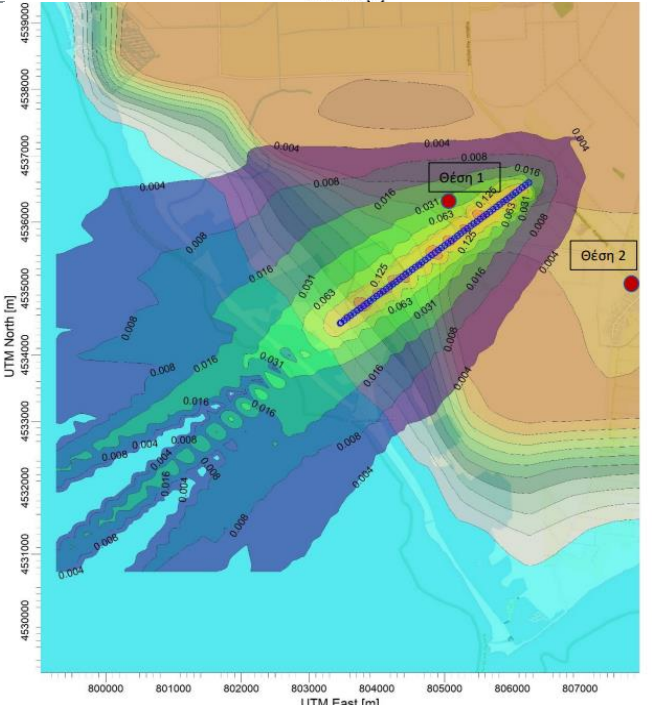
4.1. Air quality measurements during the reference year

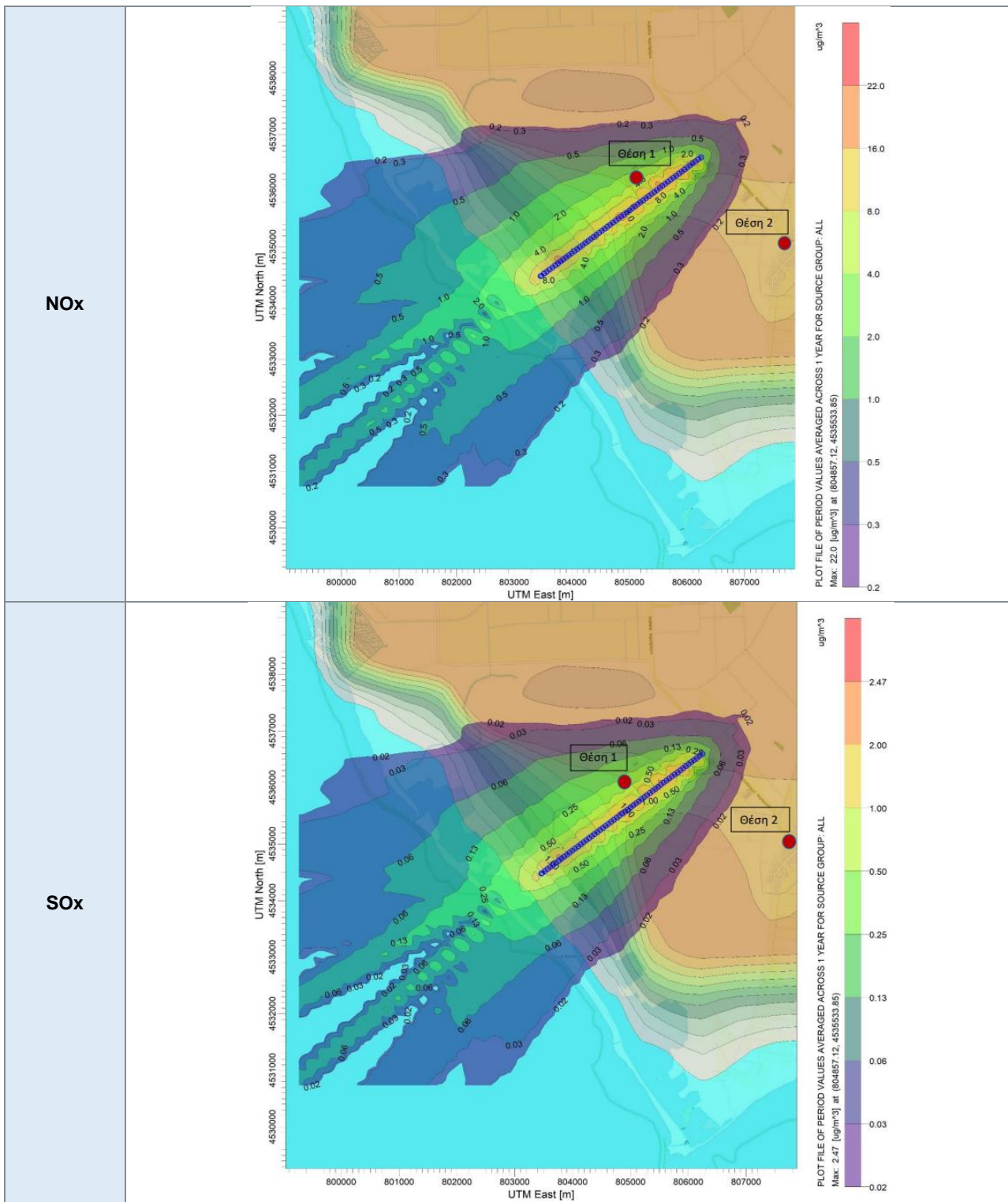
Have air quality measurements at the airport's surrounding area been performed during the reference year?		YES
Measurement points		
		
Measurement points	Measurement points description	
Point 1	Airport's parking area	
Point 2	Agiasma settlement, 4 km away of the airport	
Measurement period:	17.08.2022 – 02.09.2022	
Pollutants measured:	NO _x , SO ₂ , CO, O ₃ , C ₆ H ₆ , PM ₁₀ και PM _{2,5}	

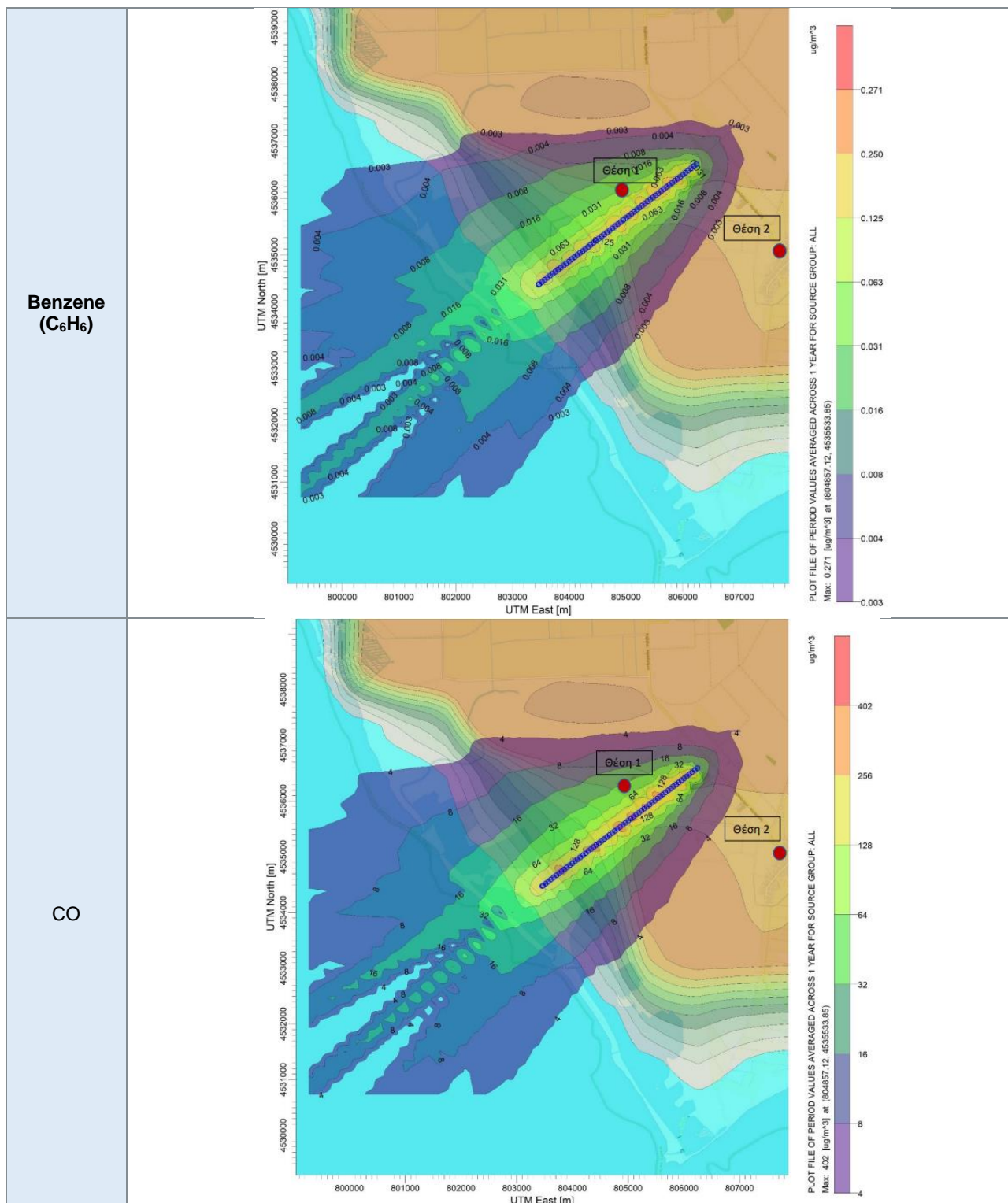
Summary of measurement results:

Air quality is monitored according to the airport's monitoring program, and the new approved environmental terms. No exceedance of the air quality limits was observed for NO_x , SO₂, CO, O₃, C₆H₆, PM₁₀ και PM_{2,5}

4.2. Air pollutants emission and dispersion modelling

Calculation of air pollutants concentrations based on an emission and dispersion modelling software		YES
Software used: Aviation Environmental Design Tool (AEDT) - US Federal Aviation Administration & US Environmental Protection Agency AERMOD		
Pollutants concentrations and respective contours calculation: PM ₁₀ , PM _{2.5} , NO _x , SO _x , C ₆ H ₆ , CO		
PM₁₀		PLOT FILE OF PERIOD VALUES AVERAGED ACROSS 1 YEAR FOR SOURCE GROUP-ALL Max: 0.410 [ugm ³] at (864857.12, 4535533.85)
PM_{2.5}		PLOT FILE OF PERIOD VALUES AVERAGED ACROSS 1 YEAR FOR SOURCE GROUP-ALL Max: 0.410 [ugm ³] at (864857.12, 4535533.85)





Summary of results:

Air quality is monitored according to the airport’s monitoring program.
No exceedance of the air quality limits was observed.

5. WASTE MANAGEMENT

Waste	Collection	Management/Disposal
Recyclables (paper, plastic, metals, glass)	Separate collection by the Municipality of Nestos	Disposal at material recovery facility or transshipment for recycling
Residues (Mixed Waste) and Bulky Waste	Collection by the Municipality of Nestos	Disposal in landfill

Notes:

1. Regarding the different categories of the MSW (recyclables, mixed waste, bulky waste), the Airport Users handle their waste together with Fraport Greece A (central management).
2. Regarding the “alternative management’ waste categories (Waste lubricant oil WLO, WEEE, etc.):
 - i. Waste Lubricant Oil (WLO): Collection and management by authorized collector “CYTOP S.A.”
 - ii. Waste Electrical & Electronic Equipment (WEEE): Collection and management by alternative management system “Appliances Recycling S.A.”
 - iii. Accumulators: Collection and management by alternative management system “Re-Battery S.A.”
 - iv. Small batteries: Collection and management by alternative management system “AFIS S.A.”
 - v. Used tires: Collection and management by alternative management system “ECOELASTIKA S.A.”
3. The total quantities of the hazardous waste further to the above-mentioned and produced at the airport, are managed by licensed private companies which have a contract with Fraport Greece A, according to the provisions of the legislation in force.
4. The total quantities of the produced waste by category resulting from all activities of the airport, the collectors and final recipients, are recorded by Fraport Greece A and submitted in the Electronic Waste Registry of the Ministry for Environment and Energy via the Annual Waste Producer Report according to the provisions of the legislation in force.

6. ECOSYSTEM AROUND THE AIRPORT

6.1. Flora-Fauna

Flora	
Are there protected zones of vegetation/habitats in the broader airport area?	YES
<p>(if YES) Short description: Kavala Airport “Megas Alexandros” is near to the Natura 2000 sites:</p> <ul style="list-style-type: none"> • GR1150010 Delta Nestou and Limnothalasses Keramotis - Evryteri Periochi and Paraktia Zoni (Area: 23,028.11 ha) • GR1150001 Delta Nestou and Limnothalasses Keramotis and Nisos Thasopoula (Area: 14,773.69 ha) <p>GR1150014 - Thalassia Periochi Kavalas – Thasou (Area: 75,686.03 ha) The airport of Kavala is within the limits of the “National Park of Eastern Macedonia & Thrace” (NPEMT). The airport of Kavala is entirely located within Zone C1 of the NPEMT, which is listed as “Eco development Area” and within delimited Zones A1 to A5, which constitute “nature protection areas” of the NPEMT. Based on Joint Ministerial Decision 44549 (Government Gazette 497/Δ/17-10-2008), within Zone C1 of the NPEMT, the following is permitted among others: “... The preservation, conservation, modernization of the airport zone, , based on the applicable provisions”.</p>	
Fauna	
Are there protected species of fauna/birds in the broader airport area?	YES
<p>(if YES) Short description: Kavala Airport “Megas Alexandros” is near to the Important Bird Area GR012: Nestos Delta and Coastal Lagoons (Area: 22,311.70ha) The protected bird species that have been observed at Kavala airport since April 2017 are presented below: Black kite (<i>Milvus migrans</i>), Black tern (<i>Chlidonias niger</i>), Collared pratincole (<i>Glareola pratincola</i>), Dalmatian pelican (<i>Pelecanus crispus</i>), Eurasian skylark (<i>Alauda arvensis</i>), Eurasian spoonbill (<i>Platalea leucorodia</i>), Eurasian stone-curlew (<i>Burhinus oedicephalus</i>), European roller (<i>Coracias garrulus</i>), Glossy ibis (<i>Plegadis falcinellus</i>), Great egret (<i>Casmerodius albus</i>), Great white pelican (<i>Pelecanus onocrotalus</i>), Lapwing (<i>Vanellus vanellus</i>), Lesser grey shrike (<i>Lanius minor</i>), Lesser kestrel (<i>Falco naumanni</i>), Long-legged buzzard (<i>Buteo rufinus</i>), Marsh harrier (<i>Circus aeruginosus</i>), Mediterranean gull (<i>Larus melanocephalus</i>), Montagu’s harrier (<i>Circus pygargus</i>), Pallid harrier (<i>Circus macrourus</i>), Pied avocet (<i>Recurvirostra avosetta</i>), Pheasant (<i>Phasianus colchicus</i>), Red-footed falcon (<i>Falco vespertinus</i>), Slender billed gull (<i>Larus genei</i>), Shelduck (<i>Tadorna tadorna</i>), Spur-winged lapwing (<i>Vanellus spinosus</i>), Stock dove (<i>Columba oenas</i>), White stork (<i>Ciconia ciconia</i>) Other protected animal species observed at Kavala airport: Golden Jackal (<i>Canis aureus</i>)</p>	

7. WILDLIFE HAZARD MANAGEMENT

Wildlife strikes and wildlife hazard management measures	
Wildlife species that suffered a strike	Strikes (%)
Birds of prey, Owls	53%
Small passerines	27%
Gulls	13%
Storks	7%
Wildlife strike risk mitigation measures:	
<p>The presence and behavior of wildlife species at Kavala airport is monitored in regular intervals, daily, from dawn to dusk. Some of the wildlife control methods applied at Kavala airport are: distress calls (bioacoustics), digital sounds, anti-bird laser, pyrotechnics, etc. Preventive long-term actions that are mainly related to habitat management measures (e.g. grass cutting, water body management) are also taken to further reduce the presence of species constituting a risk to flight safety. In addition, a NOTAM is published and regularly updated.</p>	

8. CULTURAL HERITAGE

Have new cultural heritage properties been discovered during the reporting period?	NO
<i>(if YES)</i> Details provided in the table below:	

Location	Date of discovery	Type of discovery	Additional protection measures taken

9. RESOURCES CONSUMPTION

9.1. Energy consumption

Energy consumption (monthly electric energy consumption, in Kwh)	
Total annual electric energy consumption (in Kwh)	1.714.618,99

9.2. Fuel consumption

Fuel consumption		
Number of FG vehicles at the airport	16	
Total annual fuel consumption	Diesel (lt)	19.621,61
	LPG (lt)	238,12
	Unleaded gasoline (lt)	661,40

9.3. Heating oil or natural gas consumption

Heating oil or natural gas consumption	
Total annual heating oil consumption (lt)	-*
Total annual heating natural gas consumption (m ³)	N/A

**Heating and air conditioning is performed via heat pumps*

9.4. Fuel consumption for generator

Fuel consumption	
Total annual consumption (lt)	428,41

9.5. Water consumption

Water consumption	
Total annual consumption (m ³)	8.245

10. GREENHOUSE GAS EMISSIONS & CARBON FOOTPRINT

Greenhouse gas emissions that were included in the carbon footprint calculation are the CO₂ emissions included in scope 1 & 2 of the GHG protocol:

- Scope 1: Direct GHG emissions that occur from sources that are owned and/or controlled by the airport,
- Scope 2: Indirect GHG emissions from the generation of purchased electricity, steam, heat or cooling consumed by the airport.

Source Flows	Total CO ₂ Emissions (t)
	2022
Direct emissions form heating fuel (scope 1)	0,0
Direct emissions from fuel used for fleet vehicles (scope 1)	54,3
Direct emissions from fuel used for generators (scope 1)	1,1
Indirect emissions from electricity consumption (scope 2)	720,2
Total (t)	775,6
Kg CO₂ /passenger	3,08

Notes:

Fraport Greece A is committed to the monitoring, management and reduction of its airports carbon footprint. In order for this target to be achieved:

- Direct and indirect carbon emissions from all the emission sources in the airports' boundaries are calculated and reported, based on the GHG Protocol (scope 1 & 2)
- The airport is certified according to ACA (Airport Carbon Accreditation), Level-1

11. HUMAN COMSUMPTION WATER MONITORING PROGRAM

Human consumption water quality	
Water supply (public water network or airport's boreholes)	Municipal Water & Sewage Company (DEYA) of Nestos
Is sampling of the airport's water network performed?	YES
(if YES) Sampling frequency:	Quarterly
Summary of results: The results of the microbiological and chemical analyses show that the parameters analyzed as regards the airport's water network are within the legislative limits defined by the Ministerial Decision Γ1 (δ)/ΓΠ οικ. 67322/ GG 3282 B/19-9-2017 regarding the quality of human consumption water.	

12. RAINWATER

RAINWATER (collection, treatment disposal and recipient)		
Area	Collection/treatment/disposal	[YES/NO]
Apron and manoeuvring area	Collected in drainage ditches leading to the sea	YES
Other runoffs (runway etc.)	Collected in drainage ditches leading to the sea	YES
Treatment of rainwater by oil-separator		NO

Rainwater quality	
Is sampling of the airport's rainwater performed?	YES
(if YES) Sampling frequency:	Yearly
Parameters analyzed: pH, conductivity, TSS, DO, NO ₃ , NO ₂ , Oil & grease, BOD, COD, Total Petroleum Hydrocarbons (TPH), PAHs, BTEX, Heavy metals, PCBs, Detergents	
Summary of results:	
Surface rainwater quality is monitored according to the airport's monitoring program. Due to the absence of designated recipients and relevant national quality limits for surface rainwater, the Environmental Health & Safety Guidelines of the International Finance Corporation (IFC) are adopted. Surface rainwater monitoring for 2022, was not performed.	

13. GROUNDWATER AND/OR SOIL AND/OR SOIL GAS MONITORING

Groundwater and/or soil and/or soil gas quality	
Is sampling of the airport’s groundwater and/or soil and/or soil gas performed?	YES
(if YES) Sampling frequency:	Yearly
Parameters analyzed: TPH, BTEX, MTBE	
Summary of results:	
Groundwater quality is monitored according to the airport’s monitoring program from boreholes managed by Fraport Greece. Groundwater monitoring for 2022 was not performed. According to the approved environmental terms, monitoring of groundwater and air from the Fuel Handlers is not foreseen for the year 2022.	

14. SEWAGE TREATMENT AND DISPOSAL

Sewage	
Sewage network to the municipal waste water treatment plant (WWTP)	YES
Autonomous airport’s waste water treatment plant (WWTP)	NO

Blue water
Collection and disposal: Collection in watertight tank and disposal to the municipal sewage network.

Waste water treatment plant description (where applicable) <i>Description of characteristics and condition of the airport’s WWTP including possible problems. Type and frequency of the effluent quality measurements.</i>	
Degree of treatment of airport’s WWTP	N/A
Treatment method	N/A
Disposal of treated wastewater	N/A
Sludge disposal	N/A
Sampling frequency of WWTP effluent	N/A
Parameters analyzed	N/A
Summary of quality of WWTP effluent	N/A