

SOP Environmental, health and safety Monitoring Plan

1. Purpose:

Described the elements of environmental, health and safety monitoring program plan to monitor and evaluate the Egyptalum activates impacts.

2. Responsibility:

Sustainability committee and environmental, health and safety committee.

3. Monitoring program Plan Goals:

1. Reduced environmental incidents.
2. Improved company's reputation.
3. Improves marketing and public image.
4. Acts as a fundamental requirement for environmental law no 9/2009 and 4/1994 and its executive regulations.
5. Improves regulatory performance.
6. Lower risk of non-compliance fines thereby saving cost for the company.
7. Employee motivation.
8. Waste reduction (both raw materials and cost).
9. Attracts more stakeholders (customers, investors, shareholders).
10. Increased profits from lower costs.

4. Monitoring program Plan Scope, regime, and Outcome

#	Environment Component	Reference Method	Parameter Standards	Location	Monitoring Regime	Limits	Outcome
1-	Biodiversity Survey for dominant habitat	according to the EPA guidelines and Egyptian environmental law no 9/2009 and 4/1994 and its executive regulations	Indigenous plants. Water Birds Mammals Amphibians Reptiles.	Two locations up wind and down wind.	Biannual (Two different Season) Survey must be implemented by Licensed and approved third part.	Environmental law no 9/2009 and 4/1994 and its executive regulations.	Two Reports a year at two different seasons Published outcome report in the consolidated report: Environmental

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					Testing laboratory must be implemented by accredited laboratory (ISO 17025)		status and uploaded in the Egyptalum website.
2	Drinking water	Reference methods: Standard Methods for the Examination of Water and Wastewater for year 2012.	All parameters listed in the law No. 458 of 2007 issued by the Minister of Health and Population).	1- Intake water. 2- Final product of river Nile treatment plant. 3- Two sample from the farst distribution point (one at factory and other one from the Egyptalum City).	Biannual (Two different Season) Survey must be implemented by Licensed and approved third part. Testing laboratory must be implemented by accredited laboratory (ISO 17025)	The maximum permissible limit of law No. 458 of 2007 issued by the Minister of Health and Population).	Two Reports a year at two different seasons Published outcome report in the consolidated report: Environmental status and uploaded in the Egyptalum website.
3	Treated domestic Wastewater	Reference methods: Standard Methods for the Examination of Water and Wastewater for year 2012.	All parameters listed in the Egyptian Code no. 501 for year 2015 which concerning reuse of treated domestic water in field of agriculture (For long term use).	Out put: Final treated sewage Discharge effluent before discharging to irrigate the wooden plant in the green belt.	Biannual (Two different Season) Survey must be implemented by Licensed and approved third part. Testing laboratory must be implemented by accredited laboratory (ISO 17025)	Treated sewage water results compare against Egyptian Code no. 501 for year 2015 which concerning reuse of treated domestic water in field of agriculture (For long term use).	Two Reports a year at two different seasons Published outcome report in the consolidated report: Environmental status and uploaded in the Egyptalum website
4	Ground water test	Reference methods: Standard Methods for the Examination of Water and Wastewater for year 2012.	All parameters represent in the Egyptian law no.48/1982 – groundwater part.	Well (1): Up flow of underground water stream Well.	Biannual (Two different Season) Survey must be implemented by	All parameters represent in the Egyptian law no.48/1982 –	Two Reports a year at two different seasons Published outcome report in the

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			Fluoride groundwater in	Well (2): Up flow of underground water stream Well	Licensed and approved third part. Testing laboratory must be implemented by accredited laboratory (ISO 17025)	groundwater part.	consolidated report: Environmental status and uploaded in the Egyptalum website
5	Air Dust and gases in work place.	Operation Phase	Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015. Compliance with Part - IV Social and Health Services Article: 216 - Law No. 12 of the Year 2003 Promulgating Labour Law	At all workshop and offices, Safaga, Massara and Alex port and Alex and Cairo office	Biannual (Two different Season) Survey must be implemented by Licensed and approved third part. Testing laboratory must be implemented by accredited laboratory (ISO 17025). Calibrated equipment	Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015. Annex 8	Two Reports a year at two different seasons Published outcome report in the consolidated report: Environmental status and uploaded in the Egyptalum website
6	Noise – Work place	Operation Phase	Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005,	At all workshop and offices, Safaga, Massara and Alex port and Alex and Cairo office	Biannual (Two different Season) Survey must be implemented by Licensed and approved third part. Testing laboratory must be implemented by accredited laboratory (ISO 17025).	Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015. Annex 8	Two Reports a year at two different seasons Published outcome report in the consolidated report: Environmental status and uploaded in the Egyptalum website.

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			1095/2011, 710/2012, 964/2015. Compliance with Part - IV Social and Health Services Article: 216 - Law No. 12 of the Year 2003 Promulgating Labour Law		Calibrated equipment		
7	Heat stress	Operation Phase	Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015. Compliance with Part - IV Social and Health Services Article: 216 - Law No. 12 of the Year 2003 Promulgating Labour Law	At all workshop and offices, Safaga, Massara and Alex port and Alex and Cairo office	Biannual (Two different Season) Survey must be implemented by Licensed and approved third part. Testing laboratory must be implemented by accredited laboratory (ISO 17025). Calibrated equipment	Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015. Annex 8	Two Reports a year at two different seasons Published outcome report in the consolidated report: Environmental status and uploaded in the Egyptalum website

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8	Light intensity	Operation Phase	<p>Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015.</p> <p>Compliance with Part - IV Social and Health Services Article: 216 - Law No. 12 of the Year 2003 Promulgating Labour Law</p>	At all workshop and offices, Safaga, Massara and Alex port and Alex and Cairo office	<p>Biannual (Two different Season) Survey must be implemented by Licensed and approved third part.</p> <p>Testing laboratory must be implemented by accredited laboratory (ISO 17025). Calibrated equipment</p>	<p>Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015. Annex 8</p>	<p>Two Reports a year at two different seasons</p> <p>Published outcome report in the consolidated report: Environmental status and uploaded in the Egyptalum website</p>
9	Gaseous emission in work place	<p>HF Fluoride SO2 CO2 CO Benzene (coal tar pitch) TVOCs (coal tar pitch) PAH and NOx in pot room yard HF at SPL and dross storage.</p>	<p>Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015.</p> <p>Compliance with Part - IV Social and Health Services Article: 216 - Law No. 12 of the Year 2003 Promulgating Labour Law</p>	Industrial process (Electrolysis, smelters, refinery, casting, storage of SPL, Dross,	<p>Biannual (Two different Season) Survey must be implemented by Licensed and approved third part.</p> <p>Testing laboratory must be implemented by accredited laboratory (ISO 17025). Calibrated equipment</p>	<p>Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015. Annex 8</p>	<p>Two Reports a year at two different seasons</p> <p>Published outcome report in the consolidated report: Environmental status and uploaded in the Egyptalum website</p>

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10	Stack emission	<p>TSP CO SO2 Total fluoride. Tar (Anode) TVOCs Hg vapor, Pb, Cu, &Ni HF H2S (casting) Cd, Co, Cr (casting) Stack(s) physical parameters.</p>	<p>Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015.</p>	<p>Industrial process stacks or Boiler stacks (any type).</p>	<p>Biannual (Two different Season) Survey must be implemented by Licensed and approved third part. Testing laboratory must be implemented by accredited laboratory (ISO 17025). Calibrated equipment</p>	<p>Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015 Annex 6.</p>	<p>Two Reports a year at two different seasons Published outcome report in the consolidated report: Environmental status and uploaded in the Egyptalum website</p>
<p>For Good practice stack measurements:</p> <ul style="list-style-type: none"> • Be sure stack with adequate height 2m – 4 m. • The flow rate at the measurement points must be uniform • 100 mm sampling points will be required at each of the sampling points in order to accommodate the sampling probe, pitot tubes and nozzle; • Be sure there are two perpendicular sampling points (100 mm). • Adequate and safe sampling platforms or scaffolding capable of carrying 250 kg/m2 will be required each of the sampling points; • 220v electricity will be required at each of the sampling points. • Law requirement and reference standard method required (US EPA method for monitoring stack emission). 							
11	Ambient Air pollution	<p>Monitoring for 24 hrs. or 8 hrs.</p> <ul style="list-style-type: none"> • CO • CO2 • NOX • O3 • TSP • PM10 • PM2.5 • NH3 • Total fluoride in dust 	<p>Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005, 1095/2011,</p>	<p>4 sample point outside the factory fence. 1- Near resident public village. 2- Egyptalum city 3- up wind monitoring point. 4- Downwind. monitoring point.</p>	<p>Biannual (Two different Season) Survey must be implemented by Licensed and approved third part. Testing laboratory must be implemented by accredited laboratory (ISO 17025). Calibrated equipment</p>	<p>Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005, 1095/2011,</p>	<p>Two Reports a year at two different seasons Published outcome report in the consolidated report: Environmental status and uploaded in the</p>

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			710/2012, 964/2015.			710/2012, 964/2015 Annex 5	Egyptalum website
12	Ambient Noise	Measured two shifts as the following: 1- 7am -10 pm 2- 10pm – 7 Am	Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister’s Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015.	4 sample point outside the factory fence. 1- Near resident public village. 2- Egyptalum city 3- up wind monitoring point. 4- Downwind. monitoring point.	Biannual (Two different Season) Survey must be implemented by Licensed and approved third part. Testing laboratory must be implemented by accredited laboratory (ISO 17025). Calibrated equipment	Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister’s Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015 Annex - 7	Two Reports a year at two different seasons Published outcome report in the consolidated report: Environmental status and uploaded in the Egyptalum website
13	Solid and Hazardous waste storage zone and agriculture waste.	Official document for compliance	Law no.202 /2020 and its executive regulation no.722/2022	1- Storage area must be comply with law. 2- Collected solid waste company must be licensed by WMRA and EEAA. 3- all workshop and offices, Safaga, Massara and Alex port and Alex and Cairo office	Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister’s Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015	Up on the quantity released.	two different seasons Published outcome report in the consolidated report: Environmental status and uploaded in the Egyptalum website

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14	Environmental register and waste register	Official document for compliance	Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015.	Collect All aspects and data up on the form prepared by law. implemented by Licensed and approved third part.	Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015	Annually	two reports per each Published outcome report in the consolidated report: Environmental status and uploaded in the Egyptalum website
15	Soil and vegetation plant and animal monitoring	Testing Fluoride	Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015.	One sample per each type to check impact.	Biannual (Two different Season) Survey must be implemented by Licensed and approved third part. Testing laboratory must be implemented by accredited laboratory (ISO 17025)	Biannually	two different seasons Published outcome report in the consolidated report: Environmental status and uploaded in the Egyptalum website
16	Hospital stack air emission pollution	Physical parameters TSP Dioxin and Furan Heavy Metals Combustion gases (CO, CO2, NOx, O2, SOX) HCL HF Heavy metals (Co, Cu, Cd, Cr, pb, Tl, Zn, Hg, Ni, V, As.		Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015.	Biannual sampling .	Biannual (Two different Season) Survey must be implemented by Licensed and approved third part. Testing laboratory must be implemented by accredited laboratory (ISO 17025)	two different seasons Published outcome report in the consolidated report: Environmental status and uploaded in the Egyptalum website

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17	Flet: vehicles working by gasoline and diesel	For gasoline vehicles (CO ₂ , CO, HC, and O ₂) For Diesel vehicles only opacity	Plan to check all twice a year.	Law No. 4 of 1994 and its Executive Regulations No. 1741 of 2005, amended by Law No. 9 of 2009 and its amendments issued by Prime Minister's Decisions Nos. 1741/2005, 1095/2011, 710/2012, 964/2015.	Prepare for maintenance required after testing.	Measurement must be implemented by Licensed and approved third part. Testing laboratory must be implemented by accredited laboratory (ISO 17025)	two different seasons Published outcome report in the consolidated report: Environmental status and uploaded in the Egyptalum website
18	Training and awareness	<ol style="list-style-type: none"> 1- Raising awareness of environmental issues and improving your company's environmental performance 2- Meeting the fundamental requirement of ISO 14001 (Environmental Management System) – the awareness across the organization 3- Providing a simple, flexible and interactive training experience for employees. 4- Standardizing meeting for all subcontractors, community, consumers ...etc. to raise awareness 		<ul style="list-style-type: none"> • Air quality • Water quality • Global warming • Waste management • pollution source, impact and prevention techniques. • Carbon foot print. • Water management. • Etc. according to needs 	Keep training records	Publish in the environmental, social and governance report.	
19	Coal license Medical incinerator license	Comply with Standards for the handling of coal and petroleum in ports, docks, intermediate storage and transportation stations, and standards and requirements for use.			Quarterly	Four report a year	
20	Compliance with Part - IV Social and Health Services Article: 216 - Law No. 12 of the Year 2003 Promulgating Labour Law	Compliance with Part - IV Social and Health Services Article: 216 - Law No. 12 of the Year 2003 Promulgating Labour Law			Quarterly	Four report a year	

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21	Continuous emissions monitoring systems (CEMS)	Monitors for physical parameters for stacks and gases HF, SO ₂ , CO, CO ₂ , NO _x , SO _x and TSP	Apparatus must be approved by US EPA requirement and with Environmental law requirements		Year 2024
22	Checking the functionality and verifying the performance of CEMS	European standard EN 14181	QAL1 aims to find out whether the selected measuring equipment for a plant is effective enough and meets not only the required legal criteria, but also the needs of an industry operator. This includes the analyzer system itself (such as an FTIR), as well as the sample delivery and sample conditioning system (sample probe, sample lines etc.), so it is an assessment of a complete measuring system.	QAL1	Certificate
		defined in the site's environmental permit (Egyptian Environmental law 9/2009 and 4/1994 and their executive regulations.	<p>QAL 2:</p> <ol style="list-style-type: none"> 1. Installation of the AMS 2. Functional test(s) of the AMS 3. Parallel measurements with the SRM for each parameter (as defined in the sites Environmental Permit) 4. Data evaluation 5. Calculation of variability of the AMS measured values 6. Test of variability of the AMS measured values and validity of the calibration function 7. Reporting 8. Inputting QAL2 Calibration Factor(s) 	The laboratory performing the measurements with the SRM shall be Laboratory must be accredited for this task according to EN ISO/IEC 17025	Every five years Reports



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		<p>Their purpose is to verify the continuing validity of the calibration function, and the requirements and responsibilities for carrying out the AST tests are the same as for QAL2.</p>	<p>AST covers the following items:</p> <ol style="list-style-type: none"> 1. functional test of the AMS 2. parallel measurements with the SRM 3. data evaluation 4. calculation of variability of the AMS measured values 5. test of variability of the AMS measured values and validity of the calibration function 6. reporting. 	<p>The laboratory performing the measurements with the SRM shall be Laboratory must be accredited for this task according to EN ISO/IEC 17025</p>	<p>Annually Report</p>
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