

**Ewan Attawash**



# **Environmental Impact Statement of Lubricant Oil Production**

**Liwa Industrial City – North Al Batinah Governorate  
Sultanate of Oman**

**December 2022**



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## **1 Introduction**

### **1.1 Overview**

Tawazon Environmental Consultancy has been contracted by Ewan Attawash to carry out an Environmental Impact Statement (EIS) for their proposed project of production lubricant oil/Engine oil from base oil in Liwa Industrial City – North Al Batinah Governorate.

The present document presents the description, analyses, and outcomes of the EIS for the referenced project. The EIS has been carried out according to international best practices and the requirements of the Environmental Authority (EA) in the Sultanate of Oman.

Ewan Attawash proposes to develop and operate an oil-based lubricating oils or greases workshop on Plot No. 336 within Liwa Industrial City with a total area of 1050.00 SQ.M.

### **1.2 The Proponent**

Ewan Attawash

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### **1.3 Project Objective**

The main objective of the project is to produce very high-quality type of lubricant oil from blending base oil with lubricant ingredient that would contribute to the increasing demand. This project will produce the lubricant oil with affordable prices and with best available technology.

## **1.4 Project Motivation**

Oman has set out a long-term strategy to enhance and diversify its economic activity away from oil and gas. The government has identified potential sectors for diversification including the manufacturing sector.

The project is developed to contribute to the continuously increasing demand for lubricant oil due to expansion in human settlements and other national development activities.

## **1.5 Need for the EIS**

Production of Lubricant oil is categorized as a Category A project as per EA's classification of projects as indicated in the MD 48/2017 under title activity "Manufacturing of oil-based lubricating oils or greases" thereby necessitating an Environmental Impact Statement (EIS) Report. The present report is undertaken as per the requirements and guidelines of the EA's requirements for conducting EIS studies.

## **1.6 Scope of the EIS**

The objective of this Environmental Impact Statement (EIS) is to establish and address any major impacts might occur by this project and it will also provide appropriate environmental management/mitigation plans necessary to avert the impacts.

Liaison and discussions with the Environmental Authority (EA), Center for Permitting and Assessment relating to the requirement of this project to obtain environmental permit resulted in the decision that an "Environmental Impact Statement" (EIS) is requested.

Ewan Attawash has commissioned Tawazon Environmental Consultancy (TEC) to prepare the EIS. The present report presents the results of the study and analysis of the workshop activity and its potential impacts and recommendations to manage those impacts.

## 2 The Proposed Project

### 2.1 Location and Site

The workshop is already constructed on plot No. 336 within Liwa Industrial City –in North Al Batinah Governorate. The site as mentioned is in an area that is flat and void of any vegetation. The landscape of the project's surrounding is considered as a man-made altered environment for the objective of accommodating industrial development. It is a wide gravel plain characteristic of several areas in Oman.

The plot area boundary's coordinates of the plot as indicated in the Krooki (Annex 1) is shown in **Table 1**.

**Table 1. Area Boundary's Coordinates**

LINE		NORTHING	EASTING	DIST (m)
1	2	2711604.70	450880.57	35.00
2	3	2711633.77	450900.08	30.00
3	4	2711617.05	450924.99	35.00
4	1	2711587.99	450905.48	30.00

**Area= 1050.00 SQ, M.**

The site as mentioned is an area that is flat and void of any vegetation. The site is surrounded by industrial activities of many types. The landscape of the project's surrounding is considered as a man-altered environment for the objective of accommodating industrial development. It is a wide gravel plain characteristics of several areas in Oman. The proposed project is located in Liwa Ind. City in North Al Batinah Governorate and covers an area of 336 sq. m as depicted in **Figure 1**. This site is in area where no residential settlements exist.

**Figure 1. Project Location**



## **2.2 Product Description**

Through the process of blending base oil with lubricant ingredient the product produced is labeled as lubricant oil or engine oil. Below is a list of all lubricant ingredients used.

- **Hitech 12200**
- **Hitech 9890**
- **Hitech 1180**
- **Hitech2250**
- **Hitech 10210**
- **Hitech 5835H Polymer**

### 2.3 Raw Materials

The major raw materials in the proposed project for the production of Lubricant oil comprises of Base oil which is procured from GCC region, in addition the lubricant ingredients which are listed above. For the storage of the Base oil, cisterns will be used to transfer the base oil into its storage tank while the storage tank is located in a paved area with a slope to control and mitigate any risk of spillage. Annually, the project receives 4800 tons of base oil.

### 2.4 The Process

The process description is based on the available information provided by the client.

The proposed project's production process will manufacture lubricant oil from blending base oil with lubricant ingredients. The production process includes the following stages:

- Acquiring the raw material

Before the main operation starts, Base oil is brought from the GCC region and transferred to the site via cisterns, after reaching the site it is then pumped into a designated storage tank which are located in a paved cemented area. The storage tank is supplied with a "fast-lock" connector which allow for the safe transferring of base oil and therefore the oil can be transferred to the storage tank at the site without any kind of spillage or leaks.

- Mixing

At first the Base oil is moved from storage tank into the blending kettle, the blending kettle is supplied with electrically induced heaters to maintain the temperature for blending (40-60 Degree). Later the lubricant ingredients are added in the blending kettle alongside the base oil, depending on the criteria required for viscosity, pouring point the percentage of lubricant chemicals is added. By maintaining the temperature in the blending kettle the base oil and the lubricants are mixed. the entirety of this process is performed inside the closed-blending-kettle-system.



- Drop tank

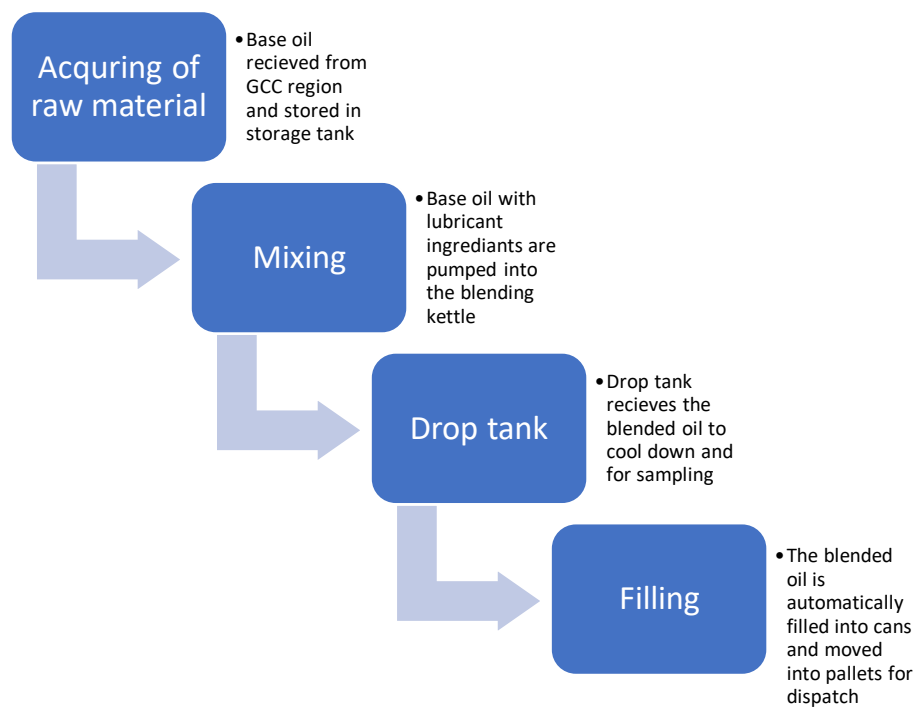
The product leaving the blending kettle is received by the drop tank which allows for the blending hot oil to cool down and then a sample is taken by an approved authorized person for quality control and to test for required grade

- Filling

The operation uses an automated filling labeling machine which takes the blended oil and fills the final product in specialized cans and then sent to the strapping machine which puts them on pallets.

**Figure 2** shows the flow-diagram of the process.

**Figure 2. Flow-Diagram**



## 2.5 Types of Equipment and Utilities

To produce high-quality lubricants, the factory will use state-of-art machinery and equipment **Figures 3 to 6** below depicts the machinery utilized in the operation of blending lubricant ingredients with base oil.

*Figure 3. Storage tank*



The base oil first received in cisterns is pumped through “Fast-lock” connector which is supplied with storage tank.

***Figure 4. Mixer***



The mixer tank or blending kettle is supplied with electrical coils which induce heat within the tank to supply the required heat for blending the base oil with lubricant ingredients.

***Figure 5. Drop tank***



The drop tank receives the blended oil from the mixer where it allows it to cool down and then a sample taken by an authorized member of the staff for quality control and grade check.

***Figure 6. Automatic filling machine***



The automatic nature of this machine allows for fast and safe movement of the final product “Engine oil” into the product cans.

### **3 Baseline Environmental Setting**

This section presents the existing environmental and social setting in the wider project area as well as site. The information presented is based on relevant previous studies for the area and other published information. The environmental baseline information on meteorology, geology, hydro-geology, ecology, socio-cultural aspects and socio-economics was collected from secondary sources including government departments, non-governmental organizations and previous EIA studies for the area/region.

Al Batinah Governorate (North & South) is a 25-kilometer-wide coastal plain that occupies an important location on the coast of Gulf of Oman and it located in between Khatmat Malahah in the north and up to Wilayat Barka in the south, and confined between Al Hajar Mountains in the west and the Gulf of Oman in the east. Most of Oman's population were in that region, because of the green plains between the Hajar Mountains and the sea. The region is known for its Khawrs and mangroves and wadi stretch, most of them are proposed as

National Nature Reserves (NNR), National Scenic Reserves (NSR) and National Resource Reserves (NRR) areas by the IUCN (1986). Although not considered as center of endemism, the biological richness in the region is comprised at least 375 species of marine and terrestrial vertebrates; including 320 birds' species (68 breeding resident), 18 mammals (15 are native), 35 reptiles and 2 amphibians. The terrestrial plant community has more than 83 species of which at least three species are geographically restricted to the Arabian Peninsula.

### **3.1 Socio-Economic Indicators**

The Governorate of North Al Batinah consists of the six Wilayats: Sohar, Shinas, Liwa, Saham, Al Khaboura and Suwayq. Al Batinah was one of the regions of Oman. However, on 28 October 2011, Al Batinah Governorate was split into North Al Batinah and South Al Batinah. The region occupied an important location on the coast of Gulf of Oman. It lay between Khatmat Malahah in the north and Ras alHamra in the south and confined between Al Hajar Mountains in the west and the Gulf of Oman in the east. Most of Oman's population were in that region, because of the green plains between the Hajar Mountains and the sea, Sohar is the capital and largest city of North Al Batinah Governorate. It is a populous city with a corniche, fish souq and numerous mosques. It was considered an ancient capital of the country that once served as an important Islamic port town, Sohar has also been credited as the mythical birthplace of Sinbad the Sailor. Sohar is a well-developed town with activities such as construction, industry, trade, and agriculture. It is also famous for copper mining. Al Shamma fort represents one of its famous historical inheritances.

### **3.2 Ecological Setting**

The project hinterland is mainly a gravel plain with thin and spatially fragmented vegetation cover. The area's natural habitat has been disturbed due to its transformation into and industrial land use. No faunal species are observed during the survey, and the vegetation is scarce. Therefore, no ecological importance could be assigned to the area and yet the project site.

### 3.3 Surface Drainage

The project site is located within an area generally characterized as gravel plain. The Liwa Industrial City is transacted by some minor surface drainage channels. No major wadis are observed. The site itself is away from major channels. In this regard, no impacts from flash floods are expected.

## 4 Regulatory Framework

The Environmental Authority (EA) is the regulator for all matters and issues related to the protection of the environment, climate affairs and nature conservation.

The Omani Laws on environmental protection, control and management are covered under three basic laws: the "Law for the Conservation of the Environment and Prevention of Pollution" (RD 114/2001), "Law for Natural Reserves & Conservation of Wild Life" (RD 6/2003) and Chemical Handling and Control Law (RD 46/95). The regulations issued under MD 48/2017 provides for organizing environmental permitting. The relevant articles promulgated under this regulation with regard to the project development are listed in the mentioned regulation.

Specific regulations are issued to regulate and control certain activities, components, and areas of releases to air, water, soil as well as other outputs like solid and hazardous waste. Other regulations deal with chemicals, radiation, and climate change.

Defining the environmental regulations relating to the current proposed project were carried out through a systematic review of the input material, processes outputs as well as the nature of the receiving environment during its operational and construction phases. Main regulations providing the environmental framework of this project are summarized in **Table 2.**

**Table 2. Regulatory Framework of the Factory**

<b>Ministerial Decision (MD)</b>	<b>Environmental Theme/Area of Coverage</b>
MD 48/2017	Issuance of Environmental Permits
MD 79/94	Regulations to Control Noise Pollution in the Public Environment
MD 80/94	Regulations to Control Noise Pollution in the Work Environment
MD 145/93	Regulations for Wastewater Re-use and Discharge
MD 55/2002	Amendment of Regulation for Wastewater Re-use and Discharge
MD 421/98	Regulations on Septic Tanks, Borrow Pits and Holding Tanks
MD 17/93	Regulations for the management of Non-Hazardous Wastes
MD 57/2002	Amendment on Regulation on Management of Non-hazardous Solid Waste
MD 25/2009	Regulation Packing, Packaging and Labelling of Hazardous Chemical

## 5 Potential Environmental Impacts

This section presents the identification and assessment of potential environmental impacts from the project activities were reviewed for their potential to interact with an environmental receptor. Environmental impacts are defined as any change to the



environment resulting from the factory's activities. The activities with potential to impact the environment (i.e., the environmental aspects) were identified considering the following:

- Environmental Impact Statement (EIS) scope
- Project information
- Baseline information
- Applicable Legislations/Regulations
- Standard international environmental management practices

### **5.1 Generic Impacts**

The main generic environmental impacts associated with the proposed factory during operation are:

- Air
- Noise
- Wastewater
- Solid waste

Although site location and setting are important for impact assessment. However, for this project the site is not located within any environmentally sensitive area. It is in the industrial area and the existing development context of the site is compatible with the activity.

### **5.2. Project-Specific Impacts**

Impact assessment includes two main steps namely, impact identification and impact evaluation/prediction. For the first step, an impact identified interactive matrix was used as shown in **Table 3** Impact evaluation and prediction were carried out based on the following basic impact evaluation criteria (impact characteristics):

- Magnitude
- Duration

- Reversibility
- Sensitivity of the Receptor

#### ***a. Impact identification***

No impacts were identified on ecology due to the lack of any habitats or species of conservation importance. In addition, the whole area is transferred to industrial activities. Also, no impacts are forecasted on land use and aesthetics due to the same reason mentioned before and as the project will totally blend with the surrounding land use and landscape of the industrial area. Most importantly, no negative impacts are identified on human settlements as the site is far from any human dwellings.

***Table 3. Impact Identification Matrix***

Project Activities	Air	Noise	Groundwater	Ecology	Solid waste	Wastewater	Surface Drainage
<b>Operation</b>							
<i>Acquiring Raw Materials</i>	✓	✓	-	-	-	-	-
<i>Mixing in the blending kettle</i>	✓	-	-	-	-	-	-
<i>Drop tank - cooling</i>	-	-	-	-	-	-	-
<i>Filling and Labelling</i>	-	✓	-	-	✓	-	-

✓ = Impact Identified

- = Impact not anticipated

**Operation Phase Impacts:**

- Air

Dust and air emissions from vehicular movement within the premises. Dust emissions if not controlled can cause nuisance or damage to property or vegetation. Respiratory diseases can result from the inhalation of dusts created during the process and the mixing

- Noise

Noise generated from the factory during operational phase would mainly be from the machinery used.

Public/environmental health of the workers and nuisance issues associated with noise can arise from production activities and may have adverse effects on potential neighboring location if not controlled.

- Wastewater

The main sources of wastewater during operation can be generated from cleaning and washing of equipment.

- Solid waste

The manufacturing process itself produces little waste material other than packaging waste. Most of the solid waste will be pieces of labels, packing material, and plastic shrink wraps.

Other wastes include dust from abatement equipment, wooden pallets, and packaging materials.

The following **Table 4** depicts the main sources of the impacts with what may arise during the operation phase of the factory.

**Table 4. Operational Impacts**

<b>Impacts</b>	<b>Description</b>
Air	<ul style="list-style-type: none"> <li>- Dust and air emissions from vehicular movement within the premises</li> <li>- During the mixing process in the activity</li> </ul>
Noise	<ul style="list-style-type: none"> <li>- Noise from the factory during operation phase arises from the machinery used.</li> </ul>
Wastewater	<ul style="list-style-type: none"> <li>- Sanitary wastewater generated from toilets and washing of machinery. This wastewater transferred to the STP.</li> </ul>
Solid waste	<ul style="list-style-type: none"> <li>- Most of the solid waste generated during operational phase would come from the packaging material.</li> <li>- Other sources include wooden pallets and empty drums are also considered to be solid waste.</li> </ul>

**b. Impact Evaluation**

In this step, impacts identified in the previous step were evaluated based on the evaluation criteria (impact characteristics) stated previously. Then, impacts were categorized as High, Medium, and Low categories based on the overall impact evaluation as shown in **Table 5** below.

Usually, High category impacts would require mitigation and management to bring them to acceptable levels.

**Table 5. Impact Evaluation Matrix**

Identified Impacts	Impact Evaluation Criteria				Impact Category*
	Magnitude	Duration	Reversibility	Receptor Sensitivity	
Operation Phase					
Air	Low	Long	Yes	No sensitivity	L
Noise	Low	Long	Yes	No sensitivity	L
Wastewater	Low	Long	Yes	No sensitivity	L
Solid Waste	Low	Long	Yes	No sensitivity	L

\* L = Low; M = Medium; H = High

Use of machinery and heavy vehicles will be limited and there are no facilities for maintenance or repairs inside the site. Therefore, it is not anticipated to observe any impacts on groundwater through percolation from the soil, taking into consideration that the whole ground of the plant will be fully cemented. The site is away from any major surface drainage/wadis in the area. Thus, no impacts were identified in these regards.

## **6 Assessment Of Impacts**

Many factors determine the magnitude and importance of environmental impacts. For the project in hand and based on the information available about the site, the following main points are identified and are presented in **Table 6** as a summary of potential impacts during the operation phase of the proposed activity.

**Table 6. Summary of Potential Impacts**

No.	Environmental components	Potential impacts	Potential Source of Impact	Control Through EMP	Impact Evaluation
1	Air Quality	Dust and Emissions	Vehicular movement	Regulate site access and abide the speed limit.  Maintain machinery and vehicles in good working conditions to minimize fugitive emissions.	No impact on air quality
		Odor	Blending kettle.	Install industrial ventilation system, and ensure that all pipes are sealed properly. Through control room all processes and operation will be observed and checked in addition leak detection programme will be provided.	No impact on air quality

2	Noise Quality	Noise Pollution	Noise from vehicular movement.	Install noise reduction equipment, such as mufflers, silencers, enclosures, or barriers on or around noisy equipment and machinery.	No significant impact
			Noise from machines	Equip workers with earplugs or mufflers to protect workers from noise pollution. Maintain machinery, equipment, and vehicles in good working conditions to minimize noise generated.	

				Restrict noise generating activities and heavy vehicular movement to morning hours to reduce nuisance to near-by receptors.	
3	Waste	Solid Waste	Quantities of solid waste generated from packing material.	<p>Method of collection by specialized waste management company.</p> <p>The waste management approach will be based on the principles of reduce, reuse, and recycle.</p> <p>A waste management plan will include waste collection, storage, transport, and disposal in an environmentally sustainable manner.</p>	<p>Since solid waste is going to be collected in special bins and handled by the authorized company, and all control measures will be taken, waste impact is negligible.</p>



4	Waste Water	Ground and water contamination  Wastewater impurities	Waste water from sanitary wastewater  Water is not utilized in the operation therefore no wastewater impurities	Water supply and efficiency measures will be evaluated (e.g. reduce, reuse, run-off reduction, storage, etc.) to reduce impacts on surrounding resources.  Due to the limited quantity of wastewater extracted, it will be stored and transported to approved STP in the Industrial Area.	No impact on ground water quality  No impact
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## 7 Environmental Management Plan

The project's environmental management plan (EMP) consists of a set of mitigation, monitoring and administrative measures to be taken into consideration during its operation phase to eliminate adverse environmental impacts or reduce them to acceptable levels. The EMP will be frequently updated by the project team to reflect the activities on site.

The project's EMP will consists of the following:

- **Mitigation measures** to identify feasible and cost-effective measures that will reduce potentially significant adverse environmental impacts to acceptable levels.
- **Monitoring plan** during project implementation to provide information about key environmental aspects of the project, particularly to monitor environmental impacts of the project and the effectiveness of mitigation measures.

Environmental management and mitigation of potential impacts arising from industrial activities have many benefits for the business. Among those benefits are the following:

- ✓ Improved work environment and worker safety.
- ✓ Reduced liability.
- ✓ Increased efficiency.
- ✓ Fewer regulatory requirements.
- ✓ Better environmental protection.
- ✓ Enhanced marketing and public relations opportunities.

The main practices recommended to achieve good environmental performance and ensure project sustainability are presented below.

### 7.1 Mitigation Measures

#### *a. Air Quality Control*

Necessary abatement measures will be taken such that all emissions from the factory comply with the environmental regulations. Mitigating measures will include:

- Install industrial ventilation system
- Ensure that all pipes are sealed properly
- Provide leak detection and repair program.

- Maintain access roads compacted, and if necessary graveled.
- Maintain the low-speed limit around the factory.
- Maintain machinery and vehicles in good working conditions to minimize fugitive emissions.
- Develop, implement, and update a simple management plan to include waste collection, storage, transport, and disposal in an environmentally sustainable manner. This should include operation waste to avoid accumulation of waste which will create dust.

*b. Noise Control*

Necessary precautions will be taken to ensure noise emitted from the factory is within permissible limits as per the environmental standards for noise regulations. All operations should be carried out during normal hours as determined by the reputed local authority. The following specific measures will be adopted:

- Maintain machinery, equipment, and vehicles in good working conditions to minimize noise generated.
- Locate equipment staging areas away from sensitive noise receptors.
- If necessary, provide sound-dampening equipment for the workers.
- Perform proper maintenance on all noise producing equipment to prevent excessive rattling and vibration of metal surface.
- Supply protective hearing equipment for workers.

*c. Wastewater*

- Any water used to wash and clean of machinery and equipment should be transferred to local STP.
- Evaluation water supply and water efficiency measures (e.g., recycling, reuse, run-off reduction, storage, etc.) to reduce impacts on surrounding resources.
- Use of water will be optimized to minimize wastage.

*d. Sanitary wastewater*

Sewage generated from the factory will be collected from the onsite adequately sized septic tanks and transported to nearby municipal sewage treatment plant (STP) for treatment.

*e. Solid waste*

All solid waste generated shall be collected, segregated and disposed-off to municipal landfills through authorized transporters. The following specific measures will be taken:

- Municipal solid wastes to be regularly collected in bins or waste handling receptacles and disposed of.
- No waste of any type to be disposed of in the surrounding environment.
- The solid waste during operation will be managed in accordance with the relevant regulation.
- The solid waste during operation of the factory will be managed in accordance with the provisions of MD 17/93. The waste management approach will be based on the principles of reduce, reuse, and recycle.
- Local contractors should be sought to transport waste regularly to prevent accumulation of waste on site.

## **7.2 Monitoring Plan**

The monitoring program is an essential element of the environmental management scheme of the project. It provides information for periodic review and adjustment of the environmental management plan as necessary ensuring that environmental protection is achieved through early detection of negative environmental impacts.

For this project, periodic monitoring is required due to the nature and the size of the factory and as per EA regulation. The factory shall provide Environmental Performance Report EPR to the EA every three months during operation.

## 8 Environmental Conditions

1. The owner must fully comply with the production capacity specified for this factory by the Ministry of Trade and Industry.
2. The factory must only produce lubricants which are allowed by this environmental permit.
3. The factory must fully comply with and implement all control and mitigation measures stipulated in the environmental impact study.
4. The general housekeeping shall be maintained clean and tidy.
5. The factory floor should be paved with concrete, especially the manufacturing area.
6. The factory site should be in an appropriate slope level in order to contain and direct any oil spill as well as rainwater into one corner of the site and drain them through a channel toward concrete pit.
7. Equipment should be inspected, checked, and maintained regularly to avoid any possibility of leakages.
8. Fire extinguishers should be kept at suitable places within the factory

### الاشتراطات البيئية

1. يجب على المالك التقيد التام بالطاقة الانتاجية المحددة للمشروع من قبل وزارة التجارة والصناعة.
2. بموجب هذا التصريح البيئي يجب ان يقتصر انتاج المصنع على زيوت المحركات المذكورة.
3. يجب ان يلتزم المصنع بكافة اجراءات التحكم والجراءات التخفيفية الواردة في دراسة التقييم البيئي.
4. يجب المحافظة على النظافة العامة في جميع ارجاء المصنع.
5. يجب ان تكون ارضية منطقة التصنيع وجميع المرافق مبطنة بالأسمنت.
6. يجب ان تكون ارضية الموقع ذات انحدار مناسب باتجاه احدى الجوانب بحيث تمكن من تجميع اية زيوت منسكبة بما في ذلك مياه المطار عن طريق انشاء شبكة تصريف مناسبة (قناة مسطحة) وتكون ذات انحدار مناسب باتجاه حفرة تجميع مسطحة.
7. يجب فحص المعدات وصيانتها بانتظام لتجنب أي احتمال لحدوث تسرب.
8. يجب الاحتفاظ بطفائيات الحريق في أماكن مناسبة داخل المصنع، وينبغي توفير عالقات تحذير كافية.
9. ال يسمح للمصنع باستخدام، أو إعادة تدوير، أو معالجة المواد الخام، أو المخلفات التي تحتوي على مواد مشعة أثناء مراحل البناء والتشغيل.
10. يجب ان يتبع المصنع أفضل الممارسات البيئية وأفضل التقنيات المتاحة في تخزين المواد الخام والمنتجات.

- and adequate warning signs should be provided.
9. The factory is not permitted to use, recycle, or treat raw materials or residues containing radioactive during construction and operation phases.
  10. The Factory must implement best environmental practices and best available technology for storing of raw materials and final product.
  11. Waste cooking oil unloading area should be carefully equipped so that the unloading process does not result in any leakage of oil to the ground.
  12. The Factory must prepare a comprehensive Emergency Plan.
  13. After three years of operation and /or any environmental issues accrued in future the factory must appoint an environmental consultant registered with EA to carry out environmental audit at the factory and submit the audit report to EA.

11. يجب تخصيص مكان مجهز تجهيزا ليا لتفريغ زيت الطبخ المستعمل القادم للمصنع بحيث ال ينتج عن عملية التفريغ اي تسرب للزيت الى الرض.
12. يجب على المصنع اعداد خطة طوارئ فعالة لإدارة المخاطر والحوادث البيئية الطارئة.
13. يجب على المصنع بعد مرور ثالث سنوات من تشغيل المصنع او/وحدوث حالت للتلوث البيئي او ظهور مشكالت بيئية ان يقوم بتكليف استشاري بيئي مسجل لدى هيئة البيئة وذو خبرة عملية مناسبة ألعاد دراسة المراجعة والتدقيق البيئي للمصنع بشكل كامل وتقديم تقرير بذلك للهيئة.
14. يتحمل المصنع كافة المسؤوليات والتبعات عن اية تأثيرات بيئية تحدث اثناء تشغيل المصنع بما في ذلك تكاليف التخفيف والمعالجة ودفع التعويضات وتسوية المستحقات ان وجدت وفقا للقوانين والضوابط التي تحددها هيئة البيئة والجهات الاخرى المختصة في هذا الشأن.
15. يجب ان يقدم المصنع تقرير الداء البيئي الى هيئة البيئة كل ثلاثة اشهر شامل جميع المظاهر والوضاع البيئية للمصنع وذلك بواسطة مكتب استشاري بيئي مسجل لدى الهيئة.
16. يجب على المصنع السماح لمفتشي البيئة من هيئة البيئة بدخول وحدات ومرافق المصنع من اجل القيام بعمليات التفتيش والرقابة البيئية ومعرفة مدى التزام المصنع بالشتراطات البيئية.

جودة الهواء والضوضاء

14. The factory fully bears all responsibilities and consequences for any environmental impacts or damages that occur during factory operation, including the costs of mitigation, treatment, payment of compensation and settlement of dues, if any, in accordance with laws and regulations determined by EA and other competent authorities.
15. The Factory must submit quarterly Environmental Performance Report EPR (every 3 months) to EA and the EPR should include all environmental aspects at the factory.
16. The factory must allow environmental inspectors from EA to enter the factory and check all environmental compliance situation of the factory.

#### Air & Noise Quality

17. The factory must control the emissions from all operations, based on standards of the regulation concerning controlling air pollutants

17. يجب على المصنع التحكم في الانبعاثات المحتملة من جميع العمليات وفق معايير النحة التحكم في ملوثات الهواء من المصادر الثابتة المنصوص عليها في القرار الوزاري (118/2004).
18. يجب على المصنع الالتزام باللائحة جودة الهواء المحيط الصادرة بالقرار الوزاري (41/2017).
19. يجب على المصنع اتباع أفضل التقنيات المتاحة للتحكم في المركبات المتطيرة.
20. يجب استخدام كاتمات الصوت من قبل الموظفين المختصين بالمصنع.
21. يجب استخدام عوازل وحواجز لألصوات حول المعدات المسببة للضوضاء.
22. يجب على المصنع القيام بالصيانة الدورية للمعدات والمركبات لتجنب انبعاث اية ملوثات وضوضاء.
23. يجب أن يقوم المصنع بعمل رصد لملوثات الهواء المحتملة من المصادر الثابتة والانبعاثات الشاردة وجودة الهواء المحيط خلال الأسبوع الثاني من التشغيل لضمان الامتثال للوائح الشروط المنصوص عليها في الشرطين 18 و 19 ويتم تقديم تقرير بذلك الى هيئة البيئة بواسطة مكتب استشاري بيئي.
24. يجب ان يقدم المصنع تقرير الداء البيئي بشكل دوري وكل ثلاثة أشهر الى هيئة البيئة مشتمال على جميع المعايير والعناصر الواردة في القرار الوزاري بشأن الملوثات من مصادر ثابتة رقم 118/2004 والقرار الوزاري بشأن جودة الهواء المحيط رقم 41/2017.
25. يجب القيام برصد الضوضاء في بيئة العمل والبيئة العامة حسب القرارين الوزاريين 94/79 و 94/80.

from point sources stipulated in the MD (2004/118).

18. The factory must obey with ambient air quality regulations issued in MD (2017/41).
19. Noise reduction equipment, such as mufflers, silencers shall be used by staff members.
20. Enclosures, or barriers on or around noisy equipment and machinery shall be installed.
21. The factory shall insure that machinery, equipment, and vehicles are maintained in good working conditions and serviced to prevent gases emissions and to minimize noise generated.
22. The Factory must conduct air monitoring for point source potential pollutants, fugitive emissions and ambient during third week of operation to ensure compliance with regulations stated in conditions 18 & 19. The monitoring to be conducted by environmental consultant registered with EA and a report with

26. يجب ان يقوم المصنع بتفعيل نظام تحديد التسرب وإصلاحه في جميع جوانب المصنع. جودة المياه والتربة

27. يجب على الشركة القيام بعادة استخدام المياه المنزوعة من الزيت (النظيفة) في سقي نباتات الزينة وأشجار الظل وكذلك استخدامها في التنظيف
28. يجب على المصنع تصريف المياه الناتجة من دورات المياه الى محطة معالجة مياه الصرف في المنطقة.

#### إدارة النفايات

29. يجب على المصنع الالتزام بالثقة ادارة النفايات الصلبة غير الخطرة رقم 17\2004.
30. يجب أن تشمل خطة إدارة النفايات على عمليات التجميع والتخزين والنقل والتخلص منها بطريقة مستدامة بيئيا.
31. يجب على المصنع تخزين النفايات في منطقة التخزين المخصصة.
32. يجب على المصنع التخلص من جميع النفايات الصلبة غير الخطرة وفقا لشركة إدارة النفايات.

#### إدارة المواد الكيميائية

33. يجب على المصنع التداول والاستخدام للمواد الكيميائية وفق الالئحة 25\2009.
34. يجب على المصنع تنفيذ الالئحة الخاصة بتعبئة وتغليف المواد الكيميائية الصادرة بالقرار الوزاري رقم 248\97.



monitoring results to be submitted to EA.

23. The Factory Must submit periodic Environmental Performance Report EPRs to EA. EPRs should include monitoring reports of parameters indicated in the MD 118/2004 Regulations for Air Pollution Control from Stationary Sources and parameters in the MD 41/2017 Regulation for Ambient Air Quality.
24. Must undertake frequent monitoring of noise in working & ambient environment as indicated in the MD 80/94 and MD 79/94.
25. The factory should use Leak Detection & Repair Program (LDRP) to detect any leak might occur in the factory.

#### Water & Soil Quality

26. The factory must use wastewater (clean water) generated during pre-treatment process to wash machinery, irrigate landscape plants and excess water should be transferred to STP.

35. يجب على المصنع تسجيل جميع المواد الكيميائية المستخدمة والحصول على الترخيص اللازم من خلال نظام البيان الإلكتروني لهيئة البيئة.

#### لبيانات السالمة الكيميائية.

36. يجب على الشركة تخزين المواد الكيميائية في مستودع متخصص وفقا  
يجب على الشركة تقديم تقرير دوري عبر النظام الإلكتروني إلى القسم المختص بدائرة المواد الكيميائية في هيئة البيئة موضحا نوع وجودة وكمية المواد الكيميائية التي تم شراؤها واستخدامها... الخ وذلك كل ستة أشهر من تاريخ إصدار ترخيص تسجيل المواد الكيميائية. ولمزيد من التوضيح يمكن الرجوع الى "دليل لتقديم التقارير الدورية" في موقع هيئة البيئة.

27. Sanitary wastewater must be transferred to local STP.

#### Waste Management

28. The factory must comply with MD 17/93 for Solid Non- Hazardous Waste Management.
29. The Factory must develop waste management plan and it should include waste collection, storage, transport, and disposal in an environmentally sustainable manner.
30. The factory must store the solid waste in designated storage area.
31. The factory must dispose all solid non-hazardous waste in accordance with requirements of waste management company.

#### Chemical Management

32. The Factory must obey Regulations on Handling and Use of Chemicals stated in MD 25/2009.
33. The Factory must obey Regulations for Packing, Packaging and Labelling of Hazardous Chemical stated in MD 248/97.

34. The Factory must register all chemicals used and obtain the necessary license through the electronic bayan system of the Environmental Authority EA.
35. The Factory must store the chemicals in a specialized warehouse in accordance with (MSDS).
36. The Factory must submit a periodic report via the electronic system to the Chemical Department at EA, indicating the quality and the amount of chemicals that were procured and used in their respective facilities every 6 months from the date of issuance of the permit. A guide to submitting periodic reports are available at the EA's website.

## 9 Appendices

## Appendix 1. Krooki

