

Engineering, Environment Health & Safety

Investors Information Kit

Rev.01/HFZA/EEHS/07-07-2017

TABLE OF CONTENTS

S.NO	DESCRIPTION	PAGE			
		NO			
ENGINE	ERING	(3-9)			
1	BUILDING, CONSTRUCTION & DEV. PLANNING	3-4			
	1. PERMITS & CERTIFICATES				
	2. SERVICES				
2	ENGINEERING DEPARTMENT APPLICABLE SERVICE CHARGES	06-07			
3	FLOW CHART FOR PROJECT DEVELOPMENT PROCEDURE	08			
4	ENGINEERING & EHS DEPARTMENT'S WORK PLAN FOR INVESTORS	09			
<u>EHS</u>		(10-34)			
1	ENVIRONMENT, HEALTH & SAFETY (EHS)	10-12			
	1. HAMRIYAH FREE ZONE'S ENVIRONMENT HEALTH & SAFETY AGENDA	10			
	2. HEALTH, SAFETY & ENVIRONMENT	10			
	3. INDUSTRIAL WASTE	11			
	4. VIOLATIONS	11-12			
2	EHS PENALTIES & FINES	13-14			
3	EHS DEPARTMENT FUNCTIONS	15			
4	EHS GUIDELINES FOR SAFE WORK PRACTICES	16-18			
	1. FACTORS TO BE CONSIDERED IN SETTING UP INDUSTRIES AND TRANSFERRING TECHNOLOGIES TO TROPICAL AND SUB-TROPICAL REGIONS	17			
	2. ERGONOMIC AND ANTHROMETRIC FACTORS TO BE CONSIDERED IN SETTING UP INDUSTRIES AND TRANSFERRING TECHNOLOGIES	17			
5	TABLE F.1: CLASSIFICATION AND CHARACTERISTIC PROPERTIES OF DANGEROUS SUBSTANCES	18			
6	TABLE F.2: CRITERIA FOR THE CLSSIFICATION OF SUBSTANCES AS VERY TOXIC OR HARMFUL	18			
7	EHS – FORMS AND PROCEDURES	19-26			
	1. WORKPLACE HOUSEKEEPING – CHECKLIST FOR CONSTRUCTION SITES	19			
	2. NOISE EXPOSURE LIMITS FOR EXTENDED WORK SHIFTS	19-21			
	3. INSPECTION CHECKLIST (SAMPLE CHECKLIST) FOR MANUFACTURING FACILITIES	22			
8	PERSONAL PROTECTIVE EQUIPMENT GUIDE	27			
9	PERMIT TO WORK	28-30			
10	SAFETY PLANNING CERTIFICATE CHECKLIST	31-34			

Building, Construction & Development Planning

PERMITS & CERTIFICATES

The Engineering division of the Hamriyah Free Zone Authority is responsible for the controlling the Construction, Development, Erection and Installation of Building Facilities, Plants and Equipment, by means of issuance of the following documents against applicable fees:

1. Building Permit - Building Completion Certificate - Operation Permit.

Building Permit: This permit is issued for six months, before the start of any new construction and modification to any existing facility. This permit is issued against approval of drawings, documents, NOC's as submitted by investor's appointed consultant & contractor holding valid Sharjah Economic License & HFZA valid registration.

2. Building Completion Certificate: Once the Construction is over the Consultant applies for a Building Completion Certificate along with all requirements as set out in the relevant section of Hamriyah Free Zone's Engineering regulation. The Consultant ensures completion of the building, with the basic electrical, telecommunication, mechanical, fire protection installations, and provision for health, safety, and sanitation/welfare.

Upon request from the Consultant the Authority inspects the facilities to issue a Building Completion Certificate if satisfied. In case the inspection is required to be repeated, charges will be extra.

3. Operation Permit: After obtaining a Building Completion Certificate and showing completion of the installation of plant and machinery, storage facility status as ready for operations, the Investor shall apply to the Authority for the issuance of a Operation Permit. The Authority ensures that full compliance with Free Zones Environmental Health & Safety Rules and regulation is made.

Unless an operation permit is obtained against completion of necessary documentation and payment of applicable fees, the facility operation would not be granted.

SERVICES

The investor's appointed consultant shall apply to the following services providing authorities (departments) for respective services connections, both for the Construction site and the Project, including the pre-built units. The application shall be forwarded in co- ordination with and through HFZA's Engineering Department.

Service Type	Department	
Power-Electricity	SEWA	Sharjah Electricity and Water Authority
Water	SEWA	Sharjah Electricity and Water Authority
Telephone services	Etisalat	United Arab Emirates Telecommunication &
Fire Fighting Prevention and control	Civil Defense	Sharjah Civil Defense Authority
Discharge and disposal to marine waters Industrial wastes, Health Inspection for Food stuffs and related items	Sharjah Municipality	HFZA in coordination with Sharjah Municipality
Ports related facilities and services	SPA	Sharjah Ports Authority
Passing over or close to the LPG pipe ways, Installations, facilities and others	SHALCO / AM0CO & others if required	Authority controlling the LPG terminal, Jetty and other facilities

All services related constructions, preparations, connections, installations and network are subject to inspection and testing and approval according to appropriate regulations and standards.

DESIGN PARAMETERS AND STANDARDS OF CONSTRUCTION

- All designs shall be based on current BS Standards or other acceptable international standards. Structural drawing submittals shall always be supported with design calculation sheets.
- The investor is responsible to carryout necessary ground and soil investigation tests, prior to start of any design work.
- The buildings shall possess a structural safety guarantee for at least 20 years from the date of hand-over.
- The minimum requirements for Structural Steel Works, Concrete Works both for the super and substructural level, Super and sub- sea level constructions to be in accordance with appropriate and international standard and per the current recommendations of HFZA authority.
- Fence Works: The site is to be fenced along with boundary lines within 60 days of the start of the lease and in accordance with the approved plan. The fence and accessories including the gates, security cabins materials type and design shall also to be of an approved specification.
- Road Access: Adequately illuminated Road access, minimum 6 m wide along with inside boundary lines and to all buildings and other facilities. This will also meet the minimum set back requirement from the boundary lines. The finish level of black top by all means shall not be less than 200 millimeters than the nearest main or approach road top. No direct access to ports main roads is permissible.
- Plot level shall be at a minimum height of 350 millimeters from the approach road's edge. Internal clearance to offices ceilings shall be minimum 2.5 meters, for warehouses and shades minimum 5.0 meters.
- The Built-up Area in any case should not exceed the permissible limit of 60% of the total plot area.
- A Minimum setback of 06 meters for any construction from the boundary fence towards the neighboring plot area to be maintained. The same offset shall be kept free from any storage as well.

- Temporary Construction Site Plan: Approval shall be obtained for the setting of all buildings, sheds and temporary' structures sanitary and drainage facility, laydown areas, stores, excavation works for the construction of the new development and shall satisfy, in respect of adequate provisions for safety, health hazards. At the completion of construction all these structures to be demolished in an appropriate manner and the site to be returned to the original or up to the acceptance condition to the authority.
- Investor shall obtain necessary approval for installation of any kind of temporary facilities like portacabin, containers (For HFZ permitted activities only) during construction or post construction period by following all EEHS rules & regulations upon settlement of applicable charges.
- The Investor and its appointed consultant/contractor by will be accountable for any damage to the existing services, utilities, facility and structures.
- Design Calculations: Structural drawing submittals shall always be supported with design calculation sheets.
- Industrial Construction: A third party and independent Inspections and testing agency's certification will be required for all industrial constructions, such as: Racks, Pipe ways, Towers, Cooling Towers, Chillers, Conveyors, Tunnels, Shafts, Chimneys, Storage Tanks, Reservoirs, Boilers, Cranes, Lifting Equipment's, pressure Vessels and wherever applicable.
- Roof System: The roof system shall bear adequate out-fall, leakage free and accessible type, the gradient of the roof shall confirm to an appropriate ratio. The gutter, channels and downspouts etc., shall confirm to the industry standard.
- Sanitary Works: The sanitary facility shall be included with hot and cold water services, appropriate portable water points, proper drainage, traps and gullies, well ventilated, standards filtering and manholes and finished. The facility utilization shall confirm to the following parameter: -

Male			F	emale
Where no urinal	s are provided:			
Up to 100 men	1 WC and 1 wash basin for every 10		Up to 100 women	1 WC and 1 wash basin for every 10
100 men1 WC and 1 wash basin for everyOr more20			100 women upwards	1 WC and basin for every 20
Where urinals a	re provided:			
Up to 100 men	1 WC for every 25			
	1 Urinal and 1 wash basin for every 10			
100 men Or more	1 WC for every 40			
	1 Urinal, 1 wash basin for every 20			

- Telecommunication: Telephones installations shall be in line with Etisalat rules and regulations.
- Electrical Works: All electrical works shall be in accordance with SEWA rules & regulations, instructions and guidelines.
- Water Works: All water works shall be in conformance to SEWA approved drawings, documents, guidelines and instructions.

- Storm Water Drainage: An appropriate System based on zero accumulation of water shall be considered for all exposed surface, including the Roof Tops, Roads, Pavements, Landscaping areas and other areas.
- HVAC: Ventilation and Air-condition requirement shall be taken in co-ordination at design stage for all facilities, confirming to the public and occupational Health requirements. The system shall introduce an efficient odor abatement provisions.
- Fire Protection, Prevention and Control Facilities: At design stage all provision shall be considered for all the internal and external areas in compliance with the investors to satisfy HFZA EEHS and Sharjah Civil Defense requirements. The system shall have a basic objective to protect the people property and assists from any fire or other hazards.
- Utilities: The following are the different procedures and details of the utilities local departments, which has to be followed by investors.
- A. Electricity: The electricity to HFZA is supplied by Sharjah Electricity & Water Authority.

The warehouses have been installed with different electrical power load capacity ranging from 30 kW-150kW. For further power up-gradation shall be considered subject to SEWA approval.

A.1 Requirements for leased plots to build plants/buildings/industries:

Prior to obtain the required Building Permit, leveling & fencing NOCs and drawing approvals are to be obtained from Civil Defense, Etisalat, Gas & SEWA-Water & Electricity. A set of original to be submitted to HFZA-Engineering Department for HFZ review & consideration.

- B. Civil Defence Authority: Fire Preventive and controlling measures are required to be approved by Civil Defense Authority, in accordance with the following rules:
 - B.1 Requirements for leased warehouses, offices or shops. The warehouses, office or shops has its own pre-built fire alarm and firefighting system approved by Civil Defence Authority. No additional approval required unless the nature of business demands so

<u>For Modification Works</u>: If the investor feels it necessary to have modifications in his premises, prior to obtaining the required building permit from HFZA, they should obtain N.O.C. for the below mentioned drawings from Civil Defense Dept. and submit the same in 1 (one) sets to HFZA:

- Plot Plan Layout.
- Fire/Alarm System Layout.

S.N	SERVICE HEAD	DESCRIPTION/ REMARKS		CURRENT CHARGES (AED)
1	Plot Demarcation/Re- demarcation	Up to 20,000 SQM	SQM	800.00
2	Plot Demarcation/Re- demarcation	From 20,000 SQM upto 50,000 SQM	SQM	1,200.00
3	Plot Demarcation/Re- demarcation	Above 50,000 SQM	SQM	2,000.00
4	NOC - Certificate	Leveling & Fencing NOC	Each	50.00
5	NOC - Certificate	Drawing Approval NOC	Each	50.00
6	NOC - Certificate	NOC for Opening File Only	Each	50.00
7	NOC - Certificate	NOC for Permanent Services Connections	Each	50.00
8	NOC - Certificate	NOC for Pipeline routing	Each	50.00
9	Pipeline	Road Cross Cutting and Laying Pipe upto 12" (Each Pipe)	Each	5,000.00
10	Pipeline	Road Cross Cutting Refundable Deposit per Pipe	Each	2,500.00
11	Building Permit	Built up area charges	SQM	2.50
12	Building Permit	Contractor Refundable Deposit	Each	5,000.00
13	Building Permit	Renewal of BP for Six Months	Each	500.00
14	Building Permit	BP amendment Fee	Each	500.00
15	Building Completion Certificate	BCC Issuance Fee	Each	500.00
16	Building Completion Certificate	Renewal of BCC for Six Months	Each	500.00
17	Building Completion Certificate	BCC Re-inspection Fee	Each	500.00
18	Building Completion Certificate	Urgent BCC Re-inspection Fee	Each	1,000.00
19	Operation Permit	Operation Permit (OP) Issuance Fee	Each	500.00
20	Operation Permit	Renewal of OP	Each	500.00
21	Signboard	Investor's Signboard Approval Fee	Each	500.00
22	Signboard	Investor's Signboard Area Charges (AED. 50.00 per SQM)	Each	50.00
23	Drawings	General Affection Plan/Plot Plan (Drawing A4)	Each	100.00
24	Drawings	General Affection Plan/Plot Plan (Drawing A3)	Each	150.00
25	Drawings	General Affection Plan/Plot Plan (Drawing A2)	Each	200.00

HFZA ENGINEERING DEPARTMENT Applicable Service Charges & Penalties

26	Drawings	General Affection Plan/Plot Plan (Drawing A1)	Each	250.00
27	Drawings	General Affection Plan/Plot Plan (Drawing A0)	Each	300.00
28	Drawings	General Affection Plan/Plot Plan (Soft Copy of Plot Drawing-CD)	Each	500.00
29	Drawings	Copy of Service Drawings / All other drawings in CD	Each	500.00
30	Drawings	Copy of Service Drawings / All other drawings in Hard Copy	Each	100.00
31	Temporary Facility/Portacabin	Temporary Portacabin/Container Approval Charges (6 Months Only)	Each	3,000.00
32	Other Charges	Change of Contractor Fee	Each	1,000.00
33	Other Charges	Change of Consultant Fee	Each	1,000.00
34	Other Charges	Warehouse Modification Fee	Each	2,000.00
35	Other Charges	Refundable Deposit for W/H Modification Works	Each	5,000.00
36	Penalty	Construction works not as per the approved HFZA SLP	Each	10,000.00
37	Penalty	Construction without BP	Each	30,000.00
38	Penalty	Operation without OP	Each	20.000.00
39	Penalty	Modification on investor's facilities without obtaining HFZA approval	Each	15,000.00
40	Penalty	Leveling & Fencing without HFZA Approval	Each	5,000.00
41	Penalty	Late Renewal Fee up to 45 days – BP / BCC / OP	Each	500.00
42	Penalty	Late Renewal Fee more than 45 days – BP / BCC / OP	Each	1,000.00
43	Penalty	Late Renewal Fee more than 3 months – BP / BCC / OP	Each	2,000.00
44	Penalty	General Violation		Case to case

Please be advised that the Hamriyah Free Zone reserves the right to revise data and rates when required.

FLOW CHART FOR PROJECT DEVELOPMENT PROCEDURE



ENGG. & EHS DEPARTMENT'S WORK PLAN FOR INVESTORS



Environment, Health & Safety (EHS)

1. HAMRIYAH FREEZONE'S ENVIRONMENTAL HEALTH & SAFETY AGENDA

Being an Environment friendly zone, it is expected that the Free Zone community including the Authority, Investors, Contractors and Suppliers and all employees will be committed to the following principles:

Compliance to Factors of Eco-efficiency: Critical factors for eco-efficiency in a company's operational practices are:

- Reduction of the material intensity of companies' goods and services.
- Reduction of the energy intensity of companies' goods and services.
- Reduction of dispersion of any toxic materials by companies.
- Enhancement to the material re-cyclability.
- Maximization of the sustainable use of renewable resources.
- Extended durability of companies' products.
- Increased services intensity of companies' goods and services.

Protection of the Biosphere: To minimize and strive to eliminate the release of any pollutant that may cause environmental damage to air, water, or earth or its inhabitants. To safeguard habitats. To minimize contributing to the greenhouse effect, depletion of the ozone layer, acid rain or smog. To minimize the creation of waste, especially hazardous waste, and wherever possible recycle materials. To dispose off all waste through safe and responsible methods. To make every effort to use environmentally safe and sustainable energy sources to meet our needs. To invest in improved energy efficiency and conservation in operations. To maximize the energy efficiency of products we produce and sell.

Risk Reduction: To minimize the environmental health and safety risk to our employees and the communities in which we operate by employing safe technologies and operating procedures and by being constantly prepared for emergencies.

Marketing Safe products and Services: To sell products or services that minimize adverse environmental impacts and that are safe as consumers commonly use them. To inform consumers of the environmental impact of our products or services.

Damage Compensation: To take responsibility for any harm we cause to the environment by making every effort to fully restore the environment and to compensate those persons who are adversely affected.

Disclosure: To disclose to our employees and to the public incidents relating to our operations that cause environmental harm or pose health or safety hazards. To disclose potential environmental, health or safety hazards posed by our operations, and we will not take any action against employees who report any conditions that create a danger to the environment or pose health or safety hazards.

Environment Directors and Managers: To continue to improve management resources to implement the Principles. This includes monitoring and reporting implementation efforts, and sustaining a process to ensure that the Board of Directors and Chief Executive Officer are kept informed of and fully responsible for all environmental matters.

Assessment and Audit: To conduct and make public an annual self-evaluation of our progress to implement these Principles and in complying with applicable laws and regulations throughout our operations. To work towards the timely creation of independent environmental audit procedures which we will complete annually and make available to the public.

2. **HEALTH, SAFETY & ENVIRONMENTAL**

- Report of Accident: Any serious injury and fatal accident shall be reported in accordance with the procedure ٠ given in HFZA's Engineering Environment Health & Safety Regulations. The first immediate verbal report should be made to HFZA Security Control Room at Phone # 5263070 and HFZA Health & Safety Executive on 056-2353116. An operator is available 24-hours and will do the needful to inform the police and concerned management etc.
- Collection of Domestic Wastes: Free Zone Authority has set and implemented in the zone a Domestic Waste Management System. Necessary facilities and services in this regard are available. Charges in this regard will be as per the applicable tariff.
- Domestic Sewerage: At the moment all the facilities are operating on a septic tank and collection tankers system.

Charges in this regard will be to the reigning applicable tariff.

- Chimneys: The minimum height of any chimney shall not be less than 3m above the ridge of any building to ٠ which it is attached or adjacent. Chimney heights shall be assessed on the basis of estimated ground-level concentrations of the residual gases and taking account of local circumstances and recognized air quality standards or criteria. For any major industry/flare stacks chimneys height to be calculated through modelling study. Further stack height shall be decided after discussions and approval from EHS Department.
- Warehouse Internal arrangement: Arrangement in the warehouse shall confirm to international standards, the internal clear passage shall confirm to the requirement of safe maneuvering, in case of fire and emergency quick evacuation and minimum danger to the assets and storage goods. The Stack Piling shall be arranged in appropriate manner, preventing any collapse and by all means minimum 1.5M clearance to be provided from the ceiling. Heavy loose materials should not be kept at heights. Shelves shall confirm to stable and strong structural conditions. Shelves shall preferably consist of non-combustible materials. Adequate clearance shall be provided and coatings. The goods shall be kept with a suitable clearance from the edge of the shelves, wherever applicable.

Storage: •

> Documentation: In all documents relating to dangerous goods the correct technical name of the goods shall be used and the correct description given with the U.N. goods classification. The precautions to be taken for different goods classes depending on their hazardous nature, could be keeping the dangerous goods for example:

- Separate from other goods classes
- Keeping it cool
- Keeping in the dark
- Keeping it dry

- Keeping it in fireproof place. •
- Keeping it under inert gas
- Keeping it in ventilation along the floor. •
- Keeping it under inhibitors •

Liquefied Gas Storage:

Bulk storage of liquefied gases can be serious safety hazard unless correctly designed, erected and maintained. Safety shall be given prime importance at the design and planning of the facility. Storage for liquefied gases can be:

- 1. Fully-refrigerated, where the liquid is stored at its bubble point at near-atmospheric pressure; or
- 2. Full pressure, where the liquid is stored at ambient temperature; or
- 3. Semi-refrigerated, an intermediate approach where the liquid is stored below ambient temperature but at a vapor pressure above atmospheric.

Use of ods - ozone depleting substances

U\E is a signatory of Montreal Protocol for Ozone depletion substances; HFZ\ is committed to complement the Govts. Efforts/Instructions for controlling the "OSD's" include ozone depleting substances, including CFCs, HCFCs, HBFCs and Halons. HFZ encourages the use of environmental friendly alternatives and substitutes for ODS, such as HFCs, HCs and PFCs etc. in all the applied sectors including:

- a) Refrigeration and Air Conditioning.
- b) Aerosols
- c) Sterilants.
- d) Fumigants.

- e) Solvents
- f) Fire Extinguishers.
- g) adhesives
- h) Coatings/Inks.

3. INDUSTRIAL WASTE

Liquid: All liquid waste should be pre-treated at investor's facilities. The treatment must be done in accordance with the standard of Free Zone's Environmental Regulations. The investor will co-ordinate with the Free Zone Authority and other concerned authorities to seek approval to discharge the treated effluent to receiving medium, such as Municipalities Treatment Plant in Sharjah City, Land or Sea etc. Charges in accordance with the reigning tariff Structure.

Solid: Industrial solid waste confirming to nonhazardous class can be disposed of to Sharjah Municipality's yards in Sharjah, in accordance with the Municipality's criteria and applicable charges.

Hazardous Waste: The investor will be required to make special arrangements with the concerned authorities in this regard. Presently HFZA approved contractors are made available within the Free Zone for both the liquid and solid hazardous wastes.

Wastes Management: Management of all kind of waste to be in accordance with Free Zones applicable rules and regulations.

Hazardous Chemicals Handling: Chemical will be required to follow OSH\ guide # 3111 for "Hazard Communication Guideline for Compliance". This guideline is a part of Free Zones EHS-Regulation.

4. VIOLATIONS

Any violation related either to immediate or potential and of a Minor Case of Danger to Environment, Health & Safety, may be concluded by EHS Department on-the-spot verbal or off site written notification and instructions, which may be of the following categories: "Warning Notice", "Correction/Remedial Action Notice" and "Prohibition and Case of Operations Notice".

Materials Handling and Storing: Investor and its employees shall follow "OSHA MATERIAL HANDLING & STORING" guideline # 2236, which is a part of Free Zones EHS Rules and Regulations. This guideline covers, Potential Hares, Methods of Prevention, Moving, Handling Storing Materials, Use of equipment, Ergonomic Safety and Health Principles.

Material Safety Data Sheets: For investor dealing in Materials and Chemicals, are required to submit a materials Data Sheet for all the materials including Raw Materials, Additives, Admixtures and End Products. A guideline to prepare "MSDS" is provided in HFZ\'s EHS- Regulations.

No any kind of labour accommodation and illegal cooking activity is permitted in temporary or permanent facilities as per HFZA rules & regulations.

Job Site Safety: Safety at the job site is required for all active Construction, Development and maintenance projects. A guideline in this regard is provided in the Free Zones, EHS-Regulations.

Ground Seepage Control: The facilities installation should be made seepage proof by providing controlling measure including sealed layer of membranes.

Provision of Sanitary Facilities: Toilets: Toilet rooms should be well lit, ventilated to external air and should have self-closing and tight-fitting doors. European type water closet apartments should always be provided with supply of toilet paper and Asiatic type water closet apartments should be fitted with water tap at approximately 1 foot from floor level on the user's left hand side. All toilet rooms and fixtures should be kept in good repair and in a sanitary condition.

The use of common toilets in case both sexes are employed is strictly prohibited.

	Male		Female
Where	e no urinals are provided:		
Up to 100 men 1 WC and 1 wash basin for every 10		Up to 100 women	1 WC, 1 wash basin for every 10
100 men or more 1 WC and 1 wash basin for every 20		100 women upwards	1 WC and basin for every 20
Whe	ere urinals are provided:		
Up to 100 men	1 WC for every 25		
1 Urinal and 1 wash basin for every 10			
100 men or more 1 WC for every 40			
	1 Urinal, 1 wash basin for every 20		

HFZA EHS Department Applicable Service Charges & Penalties

SN	Services	Charges	Unit	D	ocuments Required	Remarks
5.N	Services	(AED)	Unit		(if any)	i temarks
1	Initial amount charged in Lease Profile for Plot- based companies	10,000	1	1. 2.	Project Profile Environment Aspect Study	Being collected for Lease Profile as EH & S service fee
2	Environmental Impact Assessment/Risk Assessment report review charge	7,500	1	1. 2. 3.	Environmental Consultant Appointment Letter Submission of EIA/RA Scope of Work (SoW) EPD SoW approval	AED 7,500/- being the service charges for EIA/RA report review. No additional charges to be levied for this service
3	NOC to Sand Transfer	100	Per trip		Request Letter with No. of trips required/transferred	Already in practice formal approval may be granted
4	NOC to Ministry of Health (MoH)	500	1			3 to 7: already in
5	NOC to Ministry of Environment & Water (MoEW)	500	1			practice. Formal approval may be granted.
6	NOC to Sharjah Municipality – Food Control Section (FCS)	500	1	-	Request Letter along	
7	NOC to Sharjah Municipality – Environmental Protection Section (EPS)	500	1		with the License	
8	NOC to Bee'ah	500	1			
9	NOC to Dubai Municipality	500	1			8 & 9: Similar to the
10	NOC to Sharjah Ports & Customs	500	1			requested.
11	Ambient Air Quality Monitoring (PM10, PM2.5, TSP, SO ₂ , NO/NO ₂ , NOx, TVOC, CO.	3,000	Each Location	-		
12	Noise Monitoring	750	Each Location		Charges approved by Top Management	Already in practice with approval
13	NOC for Hydrotesting	500	Per Tank/Pipeline	1. 2. 3. 4.	Request Letter HFZA registration copy of contractor Hydro testing schedule HFZA registered 3 rd Party Laboratory appointment	
14	NOC for disposal of hydrotested water	500	Per disposal	1. 2. 3. 4. 5.	Request Letter HFZA registration copy of contractor Water Test Report RT Dosage Report Route Map	

15	N1OC for Dewatering	500	1	 Request Letter HFZA registration copy of contractor Water Test Report Disposal Mechanism Routing Currently these services are free of any charges. Approval is requested
16	NOC for Wet Commissioning	500	1	1. Request Letterfor the proposed2. Wet Commissioning Procedurefor the proposed charges.3. Risk Assessmentfor the proposed4. Emergency Planfor the proposed5. Checklistfor the proposed
17	Permit To Work for Radiography Testing	500/3 days 750/5 days 1,500/mo.	Per cycle	 Request Letter HFZA registration copy of contractor RT Dosage Information RT Safety Officer Details Risk Assessment Route Map (for Pipelines) RT Schedule
18	Trial Operations Inspections & Permit Charges	1,500	1	 Request Letter Trial Run Procedure Risk Assessment Emergency Plan Checklist Currently these services are free of charges.
19	Vehicle Accident & NOC related Charges	Repair Charge + 250 per NOC	1	 Accident Report Emirates ID License Copy Quotation for rectifying the damages Approval is requested for the proposed charges
20	EHS Violations – Minor	1,000	1	Based on verification of complaints or uponApproval is requested for the proposed charges
		XX	XX	routine inspections As per Director's approval on a case to case basis.

Please be advised that the Hamriyah Free Zone reserves the right to revise data and rates when required.

HFZA EHS Department Functions

S.No	Activity / Services	List of Documents required from investor
1)	i. New Projects / Licence ii. Additional / Change in Activities / Licensee	 i. Project Proposal ii. Preliminary Environmental Documents (as per checklist)
2)	Setting Layout Plan	 Appointment of HFZA approved Environmental Consultant
3)	Building Permit	i. Appointment of HFZA approved FF/FA Contractor
4)	Building Completion Certificate	i. Original Inspection Certificate from Civil Defence
5)	Operation Permit	 i. Environmental Impact Assessment (EIA) & Risk Assessment (RA) ii. Assembly & Evacuation Plan iii. EHS Method of Statement
6)	Operation Permit Renewal	 i. Environmental Audit (EA) ii. EHS Method of Statement (if operation is changed) iii. Copy of valid Annual Maintenance Contract (AMC) for existing FF/FA System iv. copy of valid Defence Certificate
7)	Environmental Clearance	 i. Appointment of HFZA approved Environmental Consultant ii. Scope of work for Environmental Impact Assessment (EIA) & Risk Assessment (RA) Study iii. Environmental Impact Assessment (EIA) & Risk Assessment (RA) Report
8)	Environmental Audit	 i. Appointment of HFZA approved Environmental Consultant ii. Scope of work for Environmental Audit (EA) Environmental Impact Assessment (EA) Report
9)	No Objection Certificate for Chemical Import/Export and Store	 i. Investor Request Letter ii. Material Safety Data Sheet iii. Precursor and chemical trade (if applicable) iv. Bill of Lading/Truck way bill v. Invoice vi. Country of Origin vii. Packing List viii. AMC for firefighting ix. Third Party certificate of Storage Tanks x. License Copy

EHS Guidelines For Safe Work Practices

Factors to be considered in setting up industries and transferring technologies to tropical and sub-tropical regions

- 1. The effect of heat on the skin.
- 2. The acceptability of PPE/C and the protection provided by it.
- 3. The effect of high temperatures on the rate of absorption of toxic substances through the intact skin.
- 4. The effect of high levels of sunlight.
- 5. Heat stress problems in non-acclimatized persons, particularly when they have to wear PPE/C.
- 6. The effect of climate on the stability of chemical substances.
- 7. The effect of climate on equipment operation and maintenance.
- 8. The effect of climate on sampling and monitoring equipment and results.
- 9. The combined effect of the increased respiratory rate, the absorption of chemicals and altered level of normal bodily functions resulting from work at high temperatures.
- 10. Parasitic, bacterial, viral and other biological conditions.
- 11. The physiological characteristics of workers in tropical regions.
- 12. The effect of climate on occupational exposure limits developed and established in temperate climates.
- 13. Special precautions to protect HS monitoring and analytical instruments and to ensure their proper operation and accuracy.

Reference

- 1. International Labour Office, Safety, health and working conditions in the transfer of technology to developing countries
 - An ILO code of practice, Geneva, (1988).

Ergonomic and anthrometric factors to be considered in setting up industries and transferring technologies

- 1. The energy requirements for heavier work and the need for machines to prevent undue fatigue.
- 2. The efficient and economy of physical work, especially lifting.
- 3. The appropriate design for seated and standing work taking posture and body movements into account.
- 4. Instrument dials and displays to suit the worker, taking cultural factors into account.
- 5. Face and head shapes and dimensions to ensure proper fit of PPE,
- 6. Aspects of body size, reach, grasp and muscular strength of machine operators to ensure that machine and plant, dials, control levers and panels suit the workers who will use them.
- 7. Environmental conditions such as temperature, air movement, humidity, noise, vibration, lighting, air contaminants and radiation to ensure that these do not stress workers unduly or damages their health.
- 8. Reduction in the length of the working day when the technology transfers results in environmental conditions which have an adverse cumulative effect.
- 9. The provision of adequate relief personnel to allow rest periods in cases where continuous work is required.
- 10. The provision of rest booths or rooms protected from adverse conditions of the working environmental, when warranted.
- 11. The provision of emergency showers, special washing facilities and other facilities as required.
- 12. The prohibition of any payment scheme providing incentives for unsafe operation of a transferred technology.

Reference

International Labour Office, Safety, health and working conditions in the transfer of technology to developing countries

-An ILO code of practice, Geneva, (1988)

Table F.1	Classification	and ch	naracteristic	properties	of dan	gerous substances
1 4010 1 11	olacomoation	4114 01	anaotoriotio	proportiod	or aarr	901040 04001411000

ſ

Classification	Characteristic properties							
Explosive	A substance which may explode under the effect of flame or which is more sensitive to shocks or friction than dinitrotoluene.							
Oxidising	A substance which gives rise to highly exothermic reaction when in contact with other substances particularly flammable substances							
Extremely flammable	A liquid having a flash-point of less than 0oC and a boiling of less than or equal to 35oC.							
Highly flammable	A substance 1. May become hot and finally catch fire in contact with air at ambient temperature with any application of energy.							
	2. Is a solid and any readily catch fire after brief contact with a source of ignition and which continues to burn or to be consumed after removal of the source of ignition.							
	3. Is gaseous and flammable in air at normal pressure.							
	4. In contact with water or damp air, evolves highly flammable gases in dangerous quantities; or							
	5. Is a liquid having a flash-point below 21oC							
Very toxic	A substance which if it is inhaled or ingested or if it penetrates the skin may involve extremely serious acute or chronic health risk							
Toxic	A substance which if it is inhaled or ingested or if it penetrates the skin may involve serious acute or chronic health risks and even death.							
Harmful	A substance which if it is inhaled or ingested or if it penetrates the skin may involve limited health risks.							
Corrosive	A substance which may on contact with living tissues destroy them.							
Irritant	A non-corrosive substance which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.							

Table F.2 Criteria for the classification of substances as very toxic, toxic or harmful								
Category	Median	Median lethal concentration (LC50) absorbed by						
	Absorbed orally In rat (mg/kg)	Absorbed percutaneously in rat or rabbit (mg/kg)	Inhalation in rat (mg/litre) (4 hours)					
Very toxic Toxic Harmful	< 25 > 25 to 200 > 200 to 2000	< 50 > 50 to 400 > 400 to 2000	< 0.5 > 0.5 to 2 >2 to 20					

EHS - Forms and Procedures

Workplace Housekeeping - Checklist for Construction Sites

What is an example of a workplace housekeeping checklist for construction sites?

DO

- Gather up and remove debris to keep the work site orderly.
- Plan for the adequate disposal of scrap, waste and surplus materials.
- Keep the work area and all equipment tidy. Designate areas for waste materials and provide containers.
- Keep stairways, passageways and gangways free of material, supplies and obstructions.
- Secure loose or light material that is stored on roofs or on open floors.
- Remove or bend over nails protruding from lumber.

DO NOT

- Do not permit rubbish to fall freely from any level of the project. Use chutes or other approved devices to materials.
- Do not throw tools or other materials.
- Do not raise or lower any tool or equipment by its own cable or supply hose.

Flammable/Explosive Materials

- Store flammable or explosive materials such as gasoline, oil and cleaning agents apart from other materials.
- Keep flammable and explosive materials in proper containers with contents clearly marked.
- Store full barrels in an upright position.
- Keep gasoline and oil barrels on a barrels rack.
- Store empty barrels separately.
- Post sign prohibiting smoking, open flames and other ignition sources in areas where flammable and explosive materials are stored.
- Store and chain all compressed gas cylinders in an upright position.
- Mark empty cylinders with the letters "mt", and store them separately from full or partially full cylinders.
- Ventilate all storage areas properly.
- Ensure that all electric fixtures and switches are explosion-proof where flammable materials are stored.
- Use grounding straps equipped with clamps on containers to prevent static electricity buildup.

Noise Exposure Limits for Extended Work Shifts

Are there guidelines for noise exposure on shifts longer than 8 hours?

Most standards and guidelines concerning noise exposure are based on an 8-hour work shift and also provide levels for shorter working days. In real life conditions, longer working days are common. When calculating exposure limits for an extended work shift such as a 12-hour shift, one must take into account information on health effects related to noise exposure and those related to a 12-hour shift work. The final answer has to come from a study of actual work places that might have experimented or adapted such work practices.

A change from an 8-hour shift to a 12-hour shift must consider the following issues:

- Eight-hour time-weighted noise exposure level in dB(A)
- Problems related to use of hearing protectors for such a prolonged work shift
- Combined effect of stress factors related to a 12-hour shift and noise

EHS - Forms and Procedures

How do I calculate the exposure limit?

1. Equal Energy Rule

Table 1 TWA Method								
Duration of Work shift (h) Noise Exposure Limit (dB(A)) - TW								
8	90.0							
9	89.5							
10	89.0							
11	88.6							
12	88.2							
13	87.9							
14	87.6							

The noise exposure limit for a 12-hour shift, based on the equal rule, is 88.2 dB (\). In other words, if the noise level is kept below 88 dB (\) then, according to equal energy concept, the maximum permissible limit is not exceeded.

1. An alternative method

An alternative method, called the Brief and Scala method, is sometimes used to calculate TLV Threshold Limit Values) for chemicals but it can also be used to calculate modified noise exposure limit for extended work shifts. This method is more conservative than the TW\ method described above. It takes into account the decreased hours of recovery. The exposure limits for extended shifts, based on this method, are listed in Table 2.

Table 2 Noise Level extended shift according of Brief and Scala Method								
Noise of Work shift (h) Noise Exposure Limit (dB (A))								
8	90.0							
9	89.2							
10	88.5							
11	87.7							
12	87.0							
13	86.3							
14	85.5							

With this method, the limit for a 12-hour work shift is 87 dB (\), which is lower than that allowed by the TW\ method.

EHS - Forms and Procedures

Which method do I use?

The authority responsible for noise regulation recommends the acceptable method for calculating the noise limit for an extended work shift. For example, in Ontario, noise exposure limits are provided by the Ministry of Labour. You should contact the agency responsible for health and safety regulations applicable to your workplace and inquire about the recommended procedures for calculating exposure limits for extended work shifts.

What is some additional information about noise and extended work shifts?

- The consequence of an extended work shift on hearing loss is not known. The 90 dB (\) limit was determined for an 8- hour shift and the effect of the same noise dose spread over a 12-hour shift remains to be evaluated. This would include studying the effects of shorted recovery times between shifts.
- If hearing protectors are to be used, the feasibility of their proper and efficient use during an extended shift may need some thought. It is a well-known fact that there is a wide variation in the effectiveness of different protectors. Problems related to comfort must be considered as well.
- The stress related to a 12-hour shift has been studied by a number of researchers. There have been mixed feelings about the acceptability of the 12-hour shift in general.

Inspection Checklists - Sample Checklist for Manufacturing Facilities

What is an example of an inspection checklist for a manufacturing facility?

The examples outlined below do not list all the possible items for manufacturing facilities. The best checklist for your workplace is one that has been developed for your specific needs. Whatever the format of the checklist, provide space for the inspectors' signatures and the date.

INSPECTORS:

Date (0) Satisfactory (X) Requires Action

EHS - Forms and Procedures

TRAINING	Location	Condition	Comments
Is training provided for each person newly assigned to a			
Does initial training include a thorough review of hazards and accidents associated with the job?			
Is adequate instruction in the use of personal protective equipment provided?			
Is training for the use of emergency equipment provided?			
Are workers knowledgeable in the "Right to Refuse" procedures?			
ENVIR0NMENT Are resources available to deal with very hot or very cold conditions (drinking water, lined gloves, insulated boots)?			
Is the rain gear that is provided comfortable, and light enough so as not to constitute a hazard?			
Are work surfaces and grip surfaces safe when wet?			
Do workers know the symptoms of heat cramps, heatstroke?			
W0RK PR0CESS Are repetitive motion tasks properly paced and kept to a minimum?			
Do joint committee members have access to material safety data sheets?			
Are workers informed (by hazard signs and tags)?			
Have all trucks, forklifts and other equipment been			

EHS - Forms and Procedures	
Are fire extinguishers chosen for the type of fire most likely in that area?	
Are there enough extinguishers present to do the job?	
Are extinguishers location conspicuously marked?	
Are extinguishers properly mounted and easily accessible?	
Are all extinguishers fully charged and operable?	
Are special purpose extinguishers clearly marked?	
MEANS 0F EXIT Are there enough exits to allow prompt escape?	
Do employees have easy access to exits?	
Are exits unlocked to allow egress?	
Are exits clearly marked?	
Are exits and exit routes equipped with emergency lighting?	
WAREH0USE AND SHIPPING Are dock platforms, bumpers, stairs and steps in good condition?	
Are light fixtures in good condition?	
Are all work areas clean and free of debris?	
Are stored materials properly stacked and spaced?	
Are tools kept in their proper place?	
Are there metal containers for oily rags and for rubbish?	
Are floors free of oil spillage or leakage?	
Is absorbent available for immediate clean-up of spills and leaks?	
Are all Class I products stored in Class I approved building or outside the warehouse?	
LOADING/UNLOADING RACKS	

EHS - Forms and Procedures	
Are connections tight and sound?	
Is the general condition of wiring and junction boxes, etc. in good condition (visual inspection)?	
LIGHTING Is the level of light adequate for safe and comfortable performance of work?	
Does lighting produce glare on work surfaces, VDT screen and keyboards?	
Is emergency lighting adequate and regularly tested?	
MACHINE GUARDS Are all dangerous machine parts adequately guarded?	
Do machine guards meet standards?	
Are lockout procedures followed when performing maintenance with guards removed?	
ELECTRICAL Is the Canadian Electrical Code adhered to in operation, use repair and maintenance?	
Are all machines properly grounded?	
Are portable hand tools grounded or double insulated?	
Are junction boxes closed?	
Are extension cords out of the aisles where they can be abused by heavy traffic?	
Are extension cords being used as permanent wiring?	
T00LS AND MACHINERY Are manufactures manuals kept for all tools and machinery?	
Do power tools conform to standards?	
Are tools properly designed for use employees?	

EHS - Forms and	Procedures
PERS0NAL PR0TECTIVE EQUIPMENT Is required equipment provided, maintained and used?	
Does equipment meet requirements? Is it reliable? Is personal protection utilized only when it is not reasonably practicable to eliminate or control the hazardous substance or process?	
Are warning signs prominently displayed in all hazard areas?	
MATERIALS HANDLING AND STORAGE Is there safe clearance for all equipment through aisles and doors?	
Is stored material stable and secure?	
Are storage areas free from tipping hazards?	
Are only trained operators allowed to operate forklifts? Is charging of electric batteries performed only in designated areas?	
Are dock boards (bridge plates) used when loading or unloading from dock to truck or dock to rail car?	
Are necessary warning devices and signs in use for railway sidings?	
Are specifications posted for maximum loads which are approved for shelving, floors and roofs?	
Are racks and platforms loaded only within the limits of their capacity?	
Are chain hoists, ropes and slings adequate for the loads and marked accordingly?	
Are slings inspected daily before use?	
Are all new, repaired, or reconditioned alloy steel chain slings proof-tested before use?	
Are pallets and skids the correct type and inspected? Do personnel use proper lifting techniques? Is the size and condition of containers hazardous to workers?	

PERSON\L PROTECTIVE EQUIPMENT GUIDE

	P. P.	APPROVED CLOTHING/ COVERALLS/	HARD HAT	APPROVED F00TWEAR/B00TS	APPROVED GENERA PURPOSE GLOVES	DUST MASK	RESPRATOR CARTRDGE TYPE	EAR PLUGS	EAR DEFENDER	GOGGLE MULTIPURPOSE	FACESHIELD	SAFETY HARNESS & LINE	CHEMICAL RESSISTANT SUIT	CHEMICAL RESISTANT CAUNTLETS	RUBBER B00TS	AIR FLOW HOOD/ APPRON/GLOVES	SAFETY SPECTACLES	WELDING HELMET JERKIN/GLOVES	DOSE / SURVEY METER READING	FILM BADGES	DISPOSABLE COVERALLS, GLOVE SHOE COVERS&
	\CID H\NDLING	Х	Х	Х						Х	Х		Х	Х	Х						
	B\TTERY M\INTEN\NCE	Х	Х	Х						Х	Х			Х							
	C\USTIC SOD\ H\NDLING	Х	Х	Х						Х	Х		Х	Х	Х						
	CEMENT H\NDLING	Х	Х	Х	Х	Х				Х											
	CHEMIC\L H\NDLING	Х	Х	Х			Х			Х	Х		Х	Х	Х						
	CHIPPING	Х	Х	Х	Х	Х															
	DEGRE\SING	Х	Х	Х						Х	Х		Х	Х							
	DRLLING	Х	Х	Х		Х		Х									Х				
	DUST \TMOSPHERES	Х	Х	Х		Х	Х			Х											
	ELECTRIC\L	Х	Х	Х																	
≻	GRINDING	Х	Х	Х	Х	Х		Х		Х	Х										
5	GRIT BL\STING	Х		Х												Х					
E	HIGH WIND CONDITION	Х	Х	Х		Х		Х		Х							Х				
Α	HEIGH \BOVE 2 METERS	Х	Х	Х								Х									
¥	J\CKH\MMERING	Х	Х	Х	Х	Х		Х	Х	Х	Х										
Q	OILSPLLS	Х	Х	Х									Х	Х	Х						
5	P\INTING (SPR\Y)	Х	Х	Х			Х			Х											
	R\DIOGR\PHY	Х	Х	Х															Х	Х	
	WORKING IN HIGH NOISE LEVEL	Х	Х	Х				Х	Х												
	WET WE\THER CONDITIONS	Х	Х	Х									Х		Х						
	WELDING	Х		Х														Х			
	L\BOR\TORY	Х		Х													Х				
	ENTRYTOL\B./WORKSHOP	Х		Х													Х				
	WORK IN VICINITY OF WELDING	Х	Х	Х													Х				
	S\NDING M\CHINE OPER\TIONS	Х	Х	Х		Х	Х	Х		Х											
	\SBESTOS H\NDLING	Х	Х	Х																	Х
	M\CHINE TOOLS	Х	Х	Х						Х											
NOT	NOTES : This chart shows PPE that should be considered it does not mean that the identified PPE is always necessary nor sufficient.																				
WAT	TASKS OF A MORE HAZARDOUS NATURE E. G. 1. CONFINED SPACE ENTRY 2. TANK CLEANING 3. H2S & ACID CONTANINATION 4. WORK OVER WATER WILL REQURE SPECFIC P.P.E.																				

Investors Information Kit

PERMIT TO WORK

1. AREA/TANK/VESSEL/EQUIPME									
EXACT LOCATION:									
2. WORK TO BE DONE			COMP	ANY:			No	of Mer	ו:
			Man in	Charge:					
			Attenda	nt for Lir	ne Breaking	is:			
3. SAFETY PRECAUTIONS:	Time								
a) Gas Tests (when applicable)	Flammable								
Vaporous									
(Results and initials in boxes)	Toxic Gases								
b) Protective Equipment to be worn									
(ring items which apply)									•

1. Safety	2. Saf	ety	3.	4. Face	5. Updraft	6. ∖ir	7. Self-	8.	9. Dust	1.0 Ear
	_		Chemical	Shield			contained	Compresse	Mask	Muffs
Helmet	Specta	acles	Goggles		Helmet	Hood	C.\.B.\	d		
								\ir-line		
								В.\.		
11. Glove	S	12. F	Rubber	13.	14.	15.	16.	17.	18. Plant	19. Safety
P.V.C.		Boot	ts	Protective	Botersuit	PVC	Neoprene	Disposable	Overalls	harness
		(S	iteel			Suit	Suit	Suit	Rubber	
General		Toec	aps)	Footwear					Overboot	
			. ,						s Rubber	
Special									Gloves	

c) Other Precautions

	No. of	Depressuriz	Positive	Tagged	Valve	Initials as	Not	N
STAFF OF ISOLATION	LINES	Drained	n		Offity	applicable	ISUIALEU	
Although the job may be isolated						Steam		
and pressurized,						Gas/Vapor		
small residual quantities of hazardous						Liquid		
chemicals						Solids		
may still be present <u>so wear protective</u>						Air		
suitable for the risk.						Nitrogen		

d) All Motive Power has been isolated and any

	logic Control interrupted (LOCK/T\G/TRYYes	NO	N/\	Signed:	Approved Signature
e)	I have place			Signed:	Person undertaking

work

f) Electrical fuses have been withdrawn, all circuits dead

g) Electrical circuits are live for "Troubleshooting" only

Signed:Electrician Signed:Electrician/Inst.

 I certify that a Safety Planning Certificate is not required because the work does not involve projects, Plant Changes, Confined spaces, Hot work in Zone 1 or 2, Open flame, Critical line breaking, Asbestos, Excavations, Mobile Cranes, Roof work or heights > 5m, H.V. Electricity.

Signed: Permit Signature

5. a) CONFINED SPACE ENTRY (Cancelled if Site Alert (pips0 sounds)

In accordance with Regulation 7 of the Chemical Works Regulations, 1992, and Section 30 of the Factories Act, 1961, I have inspected the above confined space, it has been tested, is fully isolated, has been safely prepared according to the precautions above and Safety Planning

CertificateNo.:	_ and is, therefore, safe to enter fro	m to	
On		Signed: -	
Name of competent Attendant outside ve	essel:		
b) HOT WORK (Zone 1 or 2 or C			-
c) <u>OTHER HAZARDOUS WORK (Se</u> I have inspected the above job whic Planning Certificate No.:	ee Safety Planning Certificate) h has been safely prepared according therefore work may sta	to the precautions outlined a	bove and on Safety _ To on
	Si	gned:	Approved Signature
7. <u>APPROVAL OF PERMIT TO WO</u> I am satisfied that this permit is prope below this job. Work may proceed from Permit Signat	RK rly authorized and that safe access n to ure	is provided and that no wo on Date	rk is taking place above or Signed:
8. <u>ACCEPTANCEOFPERMITTO</u> I have read and understood the above our/my Power Tools and Equipment hav Site and \rea Emergency Plans Signature:	WORK e precautions and agree that for ou ve been registered and inspected as	r/my protection we/I will ob required by Dow Standards	eserve than. I confirm that all and that we/I understand the
9. <u>COMPLETION OF PERMIT TO</u> I certify that this job is complete/incom all Tools and Equipment have been rer Signature	WORK plete (ring appropriate word), that all noved and the Job Site has been left c Time	guards have been replaced lean and tidy.	and secured in position, that
RENEWAL OF PERMIT TO WORK 10. Approved until	CONSECUTIVE SHIFTS ONL	<u>Y)</u> Permit Sig Permit Sig d returned, Should the job n	gnature gnature ot be completed by the time
specified this Permit must be renewed.	This Permit is cancelled if \rea (warble) sounds.	

(A PERMIT TO WORK IS REQUIRED BEFORE WORK STARTS) CERTIFICATE No:

KING'S LYNIN

	Projects	Confined	Open Flame	Asbestos	Mobile Crane	H.V.	Other:
1. FOR WORK	-	Spaces	-			Electricity	
INV0LVING:	Plant	Hot work in	Critical Line	Excavations	Roof work		
	Change	Zone 1 or 2	Breaking		and Heights		
					>5m		

2. <u>CERTIFICATE APPLIED FOR BY:</u> \rea/Tank/Equipment/Pipeline: Exact Location:

Department/Contractor:

WORK TO BE DONE:

	Welding	Gas	Mobile Crane	Mobile Pum	р	Compressor	M/Vehicle	Cold]
<u>T00LS T0 BE</u> <u>USED:</u>	Cutting Equipment	Arc	Excavator	Temporary Lights	110V 24V	Electric Power Tools	Other		
3. USE A MOBILE CRANE: I have inspected this job and it may proceed subject to the following precautions:									
e : 1				. .			5.	N/A	
Signed: 4 EXCAVATIONS: Lbave	a inspected th	uis iob a	Approved Crane	Supervisor:	ne follow	inanrecautic	Date:		
4. <u>EXOXVATIONO.</u> mav		13 100 0	inditinay procee			ingprecaute		N/A	
Signed:			Approved Cons	truction Signa	ature:			Date:	
Signed:			Approved Elect	rical Signatur	e:			Date:	
5. <u>ROOF WORK - WOI</u> following precautions:	RKINGALE	IEIGH	IS AND ASBES	10S: Thave in	spected	I this job and i	t may proceed	I subject to th	е
renewing <u>p</u> rocaditions.									
								N/A	
Signed:			Approved Cons	truction Signa	ature:			Date:	
6. <u>H.V. ELECTRICITY:</u> I	nave inspecte	ea this j	ob and it may pro	oceed subjec	t to the f	bilowing prec	autions:		
the second second second second								N/A	
Signed:			Approved H.V.	Electrical Sig	nature:		Date:		
7. I confirm that the \rea	/Tank/Vesse	l/Equip	ment/Pipeline, a	as described	above. v	vill be safe fo	r the proposed	work provid	ed the
precautions listed abo	ve, together w	ith thos	e ringed on the cl	neck list oppos	site, are t	aken.			
Additional precautions: (if	none, write no	one)							
A permit to-work must be obtained from: before work starts. This Safety Planning Certificate is									
Valid from			hours on		to		hours o	n	
Section 6© on the permit to Work may be signed by									
Signed	Approved S	Safety F	 Planning Certifica	te Signature		Time:	Date:		
0		,	5	5					
8. HOT WORK IN ZONE 1 OR ZONE 2 AREAS OR H.V. ELECTRICAL WORK OR ANY PLANT CHANGE:									
L confirm that the above wo	rk may taka ni		wided all the stat	ed conditions	aro satis	fied		N/A	
	in may take pi				00 3003	licu			
Signed:	A	uthorize	ed Signature			Time:		Date:	
9. <u>RENEWAL:</u> Subject to the provisions and precautions stated above and opposite this certificate is future valid.									
Renewedfrom	hours on		to		hours on	si <u>o</u>	nature (approve	ed SPC):	
Renewedfrom	hours on		to		hours on	ı sig	nature (approve	ed SPC):	
Kenewedfrom	hours on		to		nours on	ı sig	nature (approve	ea SPC):	
· · · · · · · · · · · · · · · · · · ·									

<u>NOTE:</u> (a) \ separate signature is required for Section 8. (b) This Certificate is not valid until all necessary signatures have been obtained.

SAFETY PLANNING CERTIFICATE CHECK LIST (ALL REQUIRED PRECAUTIONS TO BE RINGED)

SIGN	GENERAL	PRECAU	LIONS		SIGN	H0T W0RKcontinued
<u></u>	1 All po	wer tools	and equir	ment		Check welding cables are in good condition and
	(including steps and ladders) must be					where they must cross pipelines a suitable
	registered with	valid lahel a	ffived			insulating bridging must be used to prevent
	2 All power tools must be 110 volts					possible contact. Weld return routing via installed
						aquipment is prohibited
	Thaximum.					444. Cite and sulinders of as to be clear of anorka
	3. Ensure in	at power sup	ply cables to			411. Site gas cylinders so as to be clear of sparks
	transformers and	na welaing se	ets above 110	voits are		and slag.
	less than six re	et long.				412. Check detachable cylinder key in situ.
	4. Suitable s	steps or ladde	ers to be used.			413. Check compressed gas cylinders are used in
	5. Scaffoldir	ng to be erec	ted and inspec	ted by		metal wheeled trolley (not frees standing or fixed
	competent pers	sons and not	ice fixed before	e use		to a structure)
	(mobile or fixe	ed).				414. Test all compressed gas connections using
	6. Provide l	ife-line.				soap solution before work starts.
	7. Use inerti	ia fall arrest o	or (e.g. Sala Blo	ock)		415. Check that oxygen and fuel gases have flash-
	8. Cordon c	off work area,	above and be	low.		back arrestors fitted between regulators and
	9. Notify ad	ljacent plants	/areas.			supply hose and that non-return valves are fitted
	10. Check tha	it all holes, ex	cavations, wor	k areas		between torch and supply hoses.
	wherecoversc	or drains are r	emovedareba	rricaded		416. Check that all hoses are in good condition
	off and warnin	g notices affi	xed. At night a	any such		and located away from traffic. They should not
	hazards must h	e adequately	/ lit.	,		present a tripping hazard to personnel.
	11. Isolate al	ll power drive	en equipment b	pefore		417. Erect screens to safeguard personnel from
	work starts LC	CK. T\G ar	nd TRY.			U.V. radiation.
	12. Check sho	owers and ev	e bath units be	fore		418. Site diesel driven D.C. generating sets in
	work starts					open air to prevent fumes accumulating in work
	13 Instigate s	safe procedur	es for material	s		area
	containing ash	estos to con	noly with King'	slvnn		419 Check that smoke detectors are isolated
	Site Standard	No. 20 Ashe	stos	5 Lynn		
	Sile Standard No. 20 Aspesios.					ENTRY INTO CONFINED SPACES
	014.					500 All ninelines must be isolated either by
	PROTECTIVE CLOTHING					removing spool pieces and blanking off live ends
	100 Protectio	on required.				or hy inserting spade in lines
410		2 Face	3 Undate	4 \ir		501 isolate agitator by removal of fuses followed
	Goggles	Shield	Helmet	-		by I OCK TAG and TRY
	Coggioo			Hood		502 Trained attendant to stand by outside vessel
						(must be named on Permit to Work)
	5 Solf	6	7 Duct	9 Ear		503 Use mini-winch with life-line and full hoister
	D. Sell	0.	7. Dusi Maak	0. Ear		type-safety barness
	contained	Compresse	IVIASK	M		type-salety namess
	C.\.B.\.			wuns		
		B.\.				
	9. Gloves	10. Rbber	111.	12.		
	PVC	Boots	Protective			
		(Steel	Footwear	Suit		
	Gen.	l loecaps)				
	Spec.					
	13.	14.	15. Plant	16.		
	Neoprene	Disposable	Overalls	Sfety		
	Suit	Sit	Rubber	Hrnes		
			Overboots	s		
			Rubber			
			Gloves		•	
		-				

ATM0SPHERE TESTING

200. Test for flammable vapours (explosimeter) BEFORE WORK ST\RTS/REPE\T EVERYHOURS/ MONITOR CONTINUOUSLY. 201. Test for oxygen BEFORE WORK ST\RTS/ REPE\TEVERY _ _ _ HOURS/MONITOR CONTINUOUSLY 202. Test for toxic gas BEFORE WORK ST\RTS/REPE\T EVERY.....HOURS/MONITOR CONTINUOUSLY.

LINE BREAKING

300. Positively identify by tagging, taping or painting.

301. Before cutting into a pipeline a "test" hole should be drilled in the pipe.

302 Process operator to "stand by" (protected to same standard as craftsman).

303 Check pipeline suspension.

304 Drain and isolate line, look off pump(s).

305 Provide scaffolding - fitter should work at waist height.

306 Blank off open ends of pipelines.

307 Flush area with water after job to ensure no spillage left.

308 Decontaminate tools, protective clothing and boots, gloves, face and eye protection (keep goggles on until last and then remove in safe area wearing clean or disposable gloves)

Odor Total Control

504. Check vessel is cool enough to enter $(<35^{\circ}C)$.

505. Use air mover or fan (must be grounded) 506. Use 24 volt lamp

507. Check adequacy of means of vessel entry/exit

508. Provide portable alarm for attendant.

509. Provide two sets of breathing apparatus outside vessel.

510. Compressed gas cylinders must be kept out of confined spaces.

MOBILE CRANES

600. Simple lift - banksman to be named on Work Permit (3c). 601. Qualified Dow representative in control -

Name

602. Critical lift 0 check list completed -Construction Super visor or Owner's Representative (mech.) in control.

EXCAVATIONS

700.Over 1.2 metres deep - Construction
Department in control
701. Hand dig only
702. Sides of excavation made secure.
703. Test ground water for contamination

HOTWORK	
400. Guard against falling sparks and slag.	R00F W0RK & HEIGHTS GREATER
401. Keep work area and below wet with running	THAN 5 METRES WHERE THRERE IS
water.	NOPERMANENTACCESS
402. Instigate fire watch.	800. Crawling boards must be used.
403. Check area 30 minutes after cessation of	801. Working method and safety devices to be
work.	approved and recorded by Construction
404. Checkworkareaevery minutes.	Signatory. 802. Provide working platform with
405. Run out fire hose.	handrail and toe boards.
406. Provide fire extinguisher, Type.	
407. Clear all combustible materials from work	
area.	
408. Remove all full and empty drums from area.	
409. Use only approved welding set, see safety	
Standard No. 17	

<u>Noise:</u> The allowable noise level for General Industries (Land based) is 7.5 dba with a tolerance of 10 dba and for Pre Built units warehouses/shades 50 dba maximum.

2. Ground Seepage Control:

The facilities and installation should be made seepage proof by providing controlling measures including sealed layer of membranes.

3. Solid Waste

There will be no available facility for both the Hazardous and non-Hazardous Industrial and Domestic Solid Waste disposal.

The investor in his owns capacity will be required to make arrangement with Sharjah and other Municipalities. Import Export and Trading of Hazard Waste is also restricted in HFZ.

4. Chimneys:

Chimney heights shall be determined by the Authority after discussions with the management and shall take in to account all the relevant information on throughput, type of material, quality of emission, type and rate of fuel usage, local circumstances, etc.

The minimum height of any chimney shall not be less than 3m above the ridge of any building to which it is attached or adjacent.

Chimney heights shall be assessed on the basis of estimated ground-level concentrations of the residual gases and taking account of local circumstances and recognized air quality standards or criteria.

Spillage:

There shall be suitable means for dealing with spillages, as agreed with the Authority.

5. Provision of Sanity Facilities:

Toilets: Toilet rooms should be well lit, ventilated to the external air and should have self-closing and tight-fitting doors. European type water closet apartments should always be provided with supply of toilet paper and Asiatic type water closet apartments should be fitted with water tap at approximately 1 foot from floor level on the user's left hand side. All toilet rooms and fixtures should be kept in good repair and in a sanitary condition.

The use of common toilets in case both sexes are employed is strictly prohibited.

	Male	Female		
	Where no uri	hals are provided:		
Up to 100 men	1 WC and 1 wash basin for every 10	Up to 100 women	1 WC and 1 wash basin for every 10	
100 men upwards	1 WC and 1 wash basin for every 20	100 women upwards	1 WC and basin for every 20	
	Where urina	als are provided:		
Up to 100 men				
	1 Urinal and 1 wash basin for every 10			
100 men upwards	1 WC for every 40			
	1 Urinal, 1 wash basin for every 20			

6. Port Health:

All food products entering the U\E must comply to the standards laid down by the Federal and Local Government

and regular importers of known-product brands can clear goods direct at their premises. Certain countries and products require special attention due to circumstances prevalent in country of origin. Health Section assures the importer that all efforts are made to ensure food products released to the general public for consumption are safe. Details listed on the labels are also checked to determine the contents of certain products as well as Halal Certificates for meat slaughtered under Islamic conditions.

7. Warehouse internal arrangement

Arrangement shall confirm to Int'I warehouse standards, the internal clear passage shall confirm to the requirement of safe maneuvering, in case of fire and emergency quick evacuation and minimum danger to the assets and storage goods. The Stack Piling shall be arranged in appropriate manner, preventing any collapse and by all means minimum 1.5 M. clearance to be provided from the ceiling. Heavy loose materials should not be kept at heights. Shelves shall confirm to stable and strong structural conditions. Shelve shall preferably consisting of NON-combustible Materials \dequate clearance shall be provided and coatings. The goods shall be kept with a suitable clearance from the edge of the shelves, wherever applicable.

8. Storage:

Documentation:

In all documents relating to dangerous goods the correct technical name of the goods shall be used and the correct description given in accordance with the U.N. goods classification.

9. Storage of Chemical and Dangerous Goods :

A variety of statutory regulations exist for the storage of chemicals and dangerous goods. It may however be advisable to restrict the accessibility of certain chemicals and dangerous goods to those whose job it is specially to handle them, particularly if careless can have serious consequences.

The precautions to be taken for different dangerous goods classes depending on their hazardous nature, could be keeping the dangerous goods for example:

*	Separate fron	n other goods classes
		geede eldeeee

Keeping it in fireproof place Keeping it under inert gas

- * Keeping it cool
- * Keeping in the dark
- * Keeping it dry

- Keeping it in ventilation along the floor
- Keeping it under inhibitors

10. Liquefied gas Storage

Bulk storage of liquefied gases can be a serious safety hazard unless correctly designed, erected and maintained. Safety shall be given prime importance at the design and planning of the facility. Storage for liquefied gases can be:

a) Fully-refrigerated, where the liquid is stored at its bubble point at near-atmospheric pressure; or

*

*

*

- b) Full pressure, where the liquid is stored at ambient temperature; or
- c) Semi-refrigerated, an intermediate approach where the liquid is stored below ambient temperature but at a vapor pressure above atmospheric.