



Hamriyah Free Zone Authority

Government of Sharjah

P.O. Box : 1377

Sharjah

United Arab Emirates

ENGINEERING, **E**NVIRONMENTAL **H**EALTH & **S**AFETY

Investors Information Kit

(01 – 06 – 2004)

ID-I-Kit:02nd/04
Updation : 30/05/2004

TABLE OF CONTENTS

S.NO.	DESCRIPTION	PAGE NOS.
1.	BUILDING, CONSTRUCTION & DEV. PLANNING	01 - 04
	1. Permits & Certificates	01
	2. Services	01
2.	FLOW CHART FOR PROJECT DEV. PROCEDURE	05
3.	ENGINEERING & EHS DEPARTMENT'S WORK PLAN FOR INVESTORS	06
4.	ENVIRONMENT, HEALTH & SAFETY (EHS)	07 - 11
	1. Hamriyah Free Zone's Environmental Health & Safety Agenda	07
	2. Health, Safety & Environmental	07
	3. Industrial Waste	08
	4. Violations	08
5.	EHS PENALTIES & FINES	10
6.	EHS RELATED FACILITIES, SERVICES, FEES & PENALTIES SCHEDULE	11
7.	EHS GUIDELINES FOR SAFE WORK PRACTICES	12
	1. Factors to be considered in setting up industries & transferring technologies to tropical & subtropical regions	13
	2. Ergonomic & Anthropometric factors to be considered in setting up industries & transferring technologies	13
8.	TABLE F.1 : CLASSIFICATION & CHARACTERISTIC PROPERTIES OF DANGEROUS SUBSTANCES	14
9.	TABLE F.2 : CRITERIA FOR THE CLASSIFICATION OF SUBSTANCES AS VERY TOXIC, TOXIC OR HARMFUL	14
10.	EHS FORMS & PROCEDURES	15 - 21
	1. Workplace Housekeeping – Checklist for Construction Sites	15
	2. Noise Exposure Limits for Extended Work Shifts	15
	3. Inspection Checklist (Sample Checklist) for Manufacturing facilities	18 - 21
11.	PERSONAL PROTECTIVE EQUIPMENT GUIDE	22

12.	PERMIT TO WORK	23 – 27
	1. Safety Planning Certificate check list.	26
13.	EHS FACT SHEET	28 - 30
14.	MAXIMUM EXPOSURE LIMITS	31 - 32
15.	UTILITIES	33
	1. Electricity	33
	2. Water	34
	3. Telephone	34
	4. Waste Disposal	34
	5. Civil Defense	34
16.	DEPARTMENT OF SEA PORTS & CUSTOMS	35 - 40
	1. Conditions of Use : Notice to Masters	35 - 36
17.	GENERAL PORT INFORMATIONS	37 - 40
18.	EHS GUIDELINES FOR RESTAURANTS, CAFETERIAS & CATERERS	41 - 42
19.	FIRE EXTINGUISHER	43 - 44
	1. Marks or Numbers affixed on the Extinguishers	44
20.	SHARJAH MUNICIPALITY RECOMMENDED HEALTH INSPECTION FACILITY CHECKLIST	45 - 49
	1. Premises	45
	2. Sanitary Facilities	46
	3. Equipment	46
	4. Personal	47
	5. Pest Control	48
	6. Transportation & Storage	48
	7. Recall System	49

LEGAL REFERENCES FOR PERFORMANCE STANDARDS

All federal and local government Laws, Rules and Regulations are applicable and to be referred to in day to day activities and operations including, but not limited to FEA-Law No-24/1999 and its supplements, Federal Labour Law No.8 and relevants. In addition to the above, all international standard EHS Laws, Regulations and Standard of Practices can be referred to, if deemed necessary.

- ✧ UAE's Federal Environmental Agency. Federal Law No. 24(1999). Hamriyah Free Zones Guidelines, Fact Sheet & "Discharge Ceilings"
- ✧ Closed competitors Applicable Standard.

Regional standard such as "Royal Commission" for the Industrial Cities of Jubail and Yanbu in Saudi Arabia.

Applicable suitable and reasonable International Standard of practices. Agreed control measures as indicated during Technical Reviews of Licensing Application.

Approved Operational Manual.

Building, Construction & Development Planning

PERMITS & CERTIFICATES :

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

Building Permit - Building completion Certificate - Operation Fitness Certificate.

1. **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 UAE registered consultant.
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, sanitation/welfare.

Upon request from the Consultant the Authority inspects the building to issue a **BUILDING COMPLETION CERTIFICATE** if satisfied. No fee is charged against issuance of this certificate. In case the inspection is required to be repeated, charges will be extra.

3. **Operation Fitness Certificate:** 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 an **Operation fitness certificate**. The Authority ensures that full compliance to Free Zones Environment Health & Safety Rules and regulation is made.

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

SERVICES

The investor's appointed and approved 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 & related services Authority
Fire Fighting Prevention and control	Civil Defence	Sharjah Civil Defence Authority
Discharge and disposal to marine waters Industrial wastes, Health Inspection for Food stuffs and related items	Sharjah Municipality	Sharjah Municipality Corporation and Authority
Ports related facilities and services	SPA	Sharjah Ports Authority
Passing over or closed to the LPG pipeways, installations and facilities	SHALCO / AMOCO	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 sub-structural level, Super and sub-sea level constructions to be in accordance with appropriate and international standard and per the current recommendations of HFZA authority.

- A third party and independent Inspections and testing agency’s certification will be required for all industrial constructions, such as: Racks, Pipeways, Towers, Cooling Towers, Chillers, Conveyors, Tunnels, Shafts, Chimneys, Storage Tanks, Reservoirs, Boilers, Cranes, Lifting Equipment’s, pressure Vessels and wherever applicable.
- **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 minimum than 200 millimeters than the nearest main or approach road top. No direct access to ports main roads is permissible.
- **Finish Floor Level:** Buildings finish floor level shall be at a minimum height of 350 millimeters to the approach road’s top. Internal clearance to offices ceilings shall be 2.5 meters, for warehouses and shades 5.0 meters.
- **Built-up Area Limit:** The permissible total built-up area is 60% only of the total plot area
- **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 conditioned to the authority.
- **Damages:** Any damage to the utility and other existing services and facility and structure will be the entire responsibility of the investor and its appointed contractor and consultant.
- **Design Calculations:** Structural drawing submittals shall always be supported with design calculation sheets.
- **Ground Conditions Investigations:** The investor is responsible to carryout necessary ground and soil investigation tests, prior to start of any design work.
- **Structural Works:** The minimum requirements for Structural Steel Works, Concrete Works both for the super and sub-structural level, Super and sub-sea level constructions to be in accordance with appropriate and international standard and per the current recommendations of HFZA authority.
- **Industrial Construction:** A third party and independent Inspections and testing agency’s certification will be required for all industrial constructions, such as: Racks, Pipeways, 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 be confirm to an appropriate ratios. The gutter, channels and downspouts etc., shall confirm to the industry standard. A copy of latest rainfall data from Sharjah Airport can be obtained from HFZA’s Engineering Department.
- **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		Female	
Where no urinals are provided:		Where no urinals 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 urinals are provided:			
Up to 100 men	1 WC for every 25 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		

- **Telecommunication:** Telephones installations shall be in co-operation with Etisalat Guide book and regulations.
- **Electrical Works:** All electrical works shall be in conformance to SEWA 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 following Standards and other Instructional, Regional and Local Standards. The system shall have a basic objective to protect the people property and assists from any fire hazard.
- **Utilities:** The following are the different procedures and details of the utilities local departments, which has to be followed by the different investors.

A) Electricity: The electricity to HFZA is supplied by the local Dept., Sharjah Electricity & Water Authority. The electricity supply voltage level is as described below:

1. Low voltage – 415V, 3ph 50HZ
2. High voltage – 11,000V, 3ph 50H

The charge for electricity is Dhs. 0.20/KWH

A.1) Requirements for leased warehouses, offices or shops

For Power Connections: A request for warehouses, office or shops to be submitted to HFZA – Engg. Dept. together with a refundable deposit of Dhs. 500/- and a non-refundable deposit of Dhs. 250/-

For Modification Work: For modification works the following drawings are to be submitted (in 2-sets) to the Engineering Department, HFZA and prior approval obtained. Also, the local authorities i.e. SEWA approval to be obtained and copies submitted to HFZA.

1. Plant Layout.
2. Single Line Diagram.
3. Load distribution schedule/connected load.
4. Lighting Layout.
5. Small Power Layout
6. Earthing Layout.

The warehouse has installed capacity of 50KW with a spare capacity of 20KW. All warehouses which need power up-gradation require prior approval from SEWA.

A.2) Requirements for leased plots to built plants/buildings/industries.

Prior to obtaining the required building permit, N.O.C., are to be obtained from SEWA for the following drawings and copies submitted (in 2 – sets) to HFZA – Engg. Office.

Drawings required are:

1. Plot Plan.
2. Plant Layout.
3. Single Line Diagram.
4. Load distribution schedule/connected load.
5. Lighting Layout.
6. Small Power Layout.
7. Plant Earthing Layout.

For Power Connection: A request for power connection to the plot to be submitted to HFZA – Engg. Dept. together with a refundable deposit of Dhs. 500/- and a non-refundable deposit of Dhs. 250/-

B) Water:

The supply of water to HFZA is by the local dept., Sharjah Electricity & Water Authority, Sharjah. The charge for water is 3 Fills/Gallon.

B.1) Requirements for leased warehouses, offices or shops.

For Water Connection: A request for water connection to the rented warehouses, offices or shops to be submitted to HFZA – Engg. Dept., together with a refundable deposit of Dhs. 500/- and a non-refundable deposit of Dhs. 250/-

B.2) Requirements for leased plots to built plants/buildings/industries.

Prior to obtaining the required building permit, N.O.C. are to be obtained from SEWA for the following drawings and copies submitted to HFZA – Engg. Office.

Drawings required are:

1. Plot Plan Layout.
2. Plant Layout and water distribution Layout.
3. Storage Tank Details.
4. Water meter location dwg.

For Water Connection: A request for water connection to the plot to be submitted to HFZA – Engg. Dept. together with a refundable deposit of Dhs. 500/- and a non-refundable deposit of Dhs. 250/-

C) Civil Defence Authority: Fire Preventive and controlling measures are required to be approved by Civil Defense Authority, in accordance with the following rules:-

C.1) Requirements for leased warehouses, offices or shops.

The warehouses, office or shops has its own pre-built fire alarm and fire fighting system approved by Civil Defence Authority. No additional approval required unless the nature of business demands so

For Modification Works: If the investor feels it necessary to have modifications in his premises, prior to obtaining the required building permit from HFZA, he should obtain N.O.C. for the below mentioned drawings from Civil Defence Dept. and submit the same in 2 (two) sets to HFZA.

1. Plot Plan Layout.
2. Fire Alarm System Layout.
3. Fire Alarm System Layout.

C.2) Requirements for leased plots to built plants/buildings/industries.

Prior to obtaining the required building permit from HFZA, he should obtain N.O.C. for the below mentioned drawings from Civil Defence Dept. and submit the same in 2 (two) sets to HFZA.

1. Plot Plan Layout.
2. Fire Alarm System Layout.
3. Fire Fighting System Layout

Item	Charges (Dhs.)
1. a) Building Permit, for buildings, storages, warehouses and other built up areas (6 months) b) Specialized Structures and processes. c) Alternations, additions, modification to existing structure. (6 months) d) Fine against contravention of building permit	2.50 sq. m. 3.50 sq. m. 500.00 1 st count each case 500.00 each subsequent cont.
2. a) Building Completion Certificate b) Any follow up Inspection	No charge (Original Issue) 250.00 Per Inspector /hour
3. a) Operational Fitness Certificate – OPC b) Any follow up Inspection c) Annual Renewal / Replacement (1 year)	500.00 Original Issue 250.00 Per Inspector /hour 100.00
4. HFZA's Engineering & EHS Regulations Document	700.00 Per Issue
5. Electricity Deposit for each Power & Water Connections	0.20/KWH Refundable 500/- per case Non-refundable 250/- per case
6. Water	3 Fills/Gallon
7. Developed area 10,000 sq.m.	5,000
8. Developed area 10,000 – 20,000 sq.m.	10,000
9. Developed area exceeding 30,000 sq.m.	15,000

Note: Exchange rate: US\$ 1 = Dhs. 3.67

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

Data contained in this leaflet is accurate at the time of release: July 1999

HAMRIYAH FREE ZONE

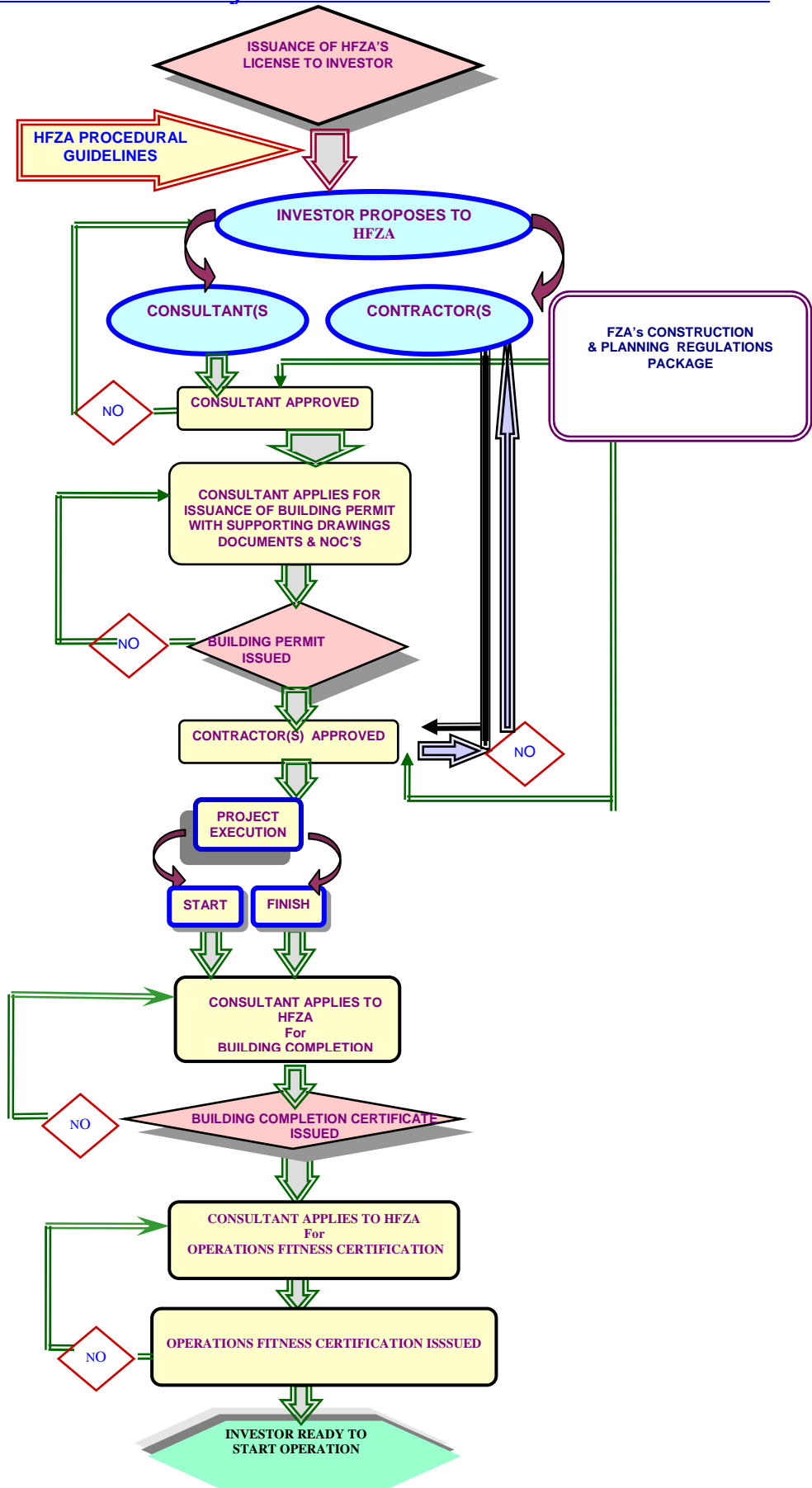
GOVERNMENT OF SHARJAH FREE ZONE AUTHORITY P.O. BOX 1377, SHARJAH, UNITED ARAB EMIRATES.

Contact the DIRECTOR GENERAL or the COMMERCIAL DIRECTOR

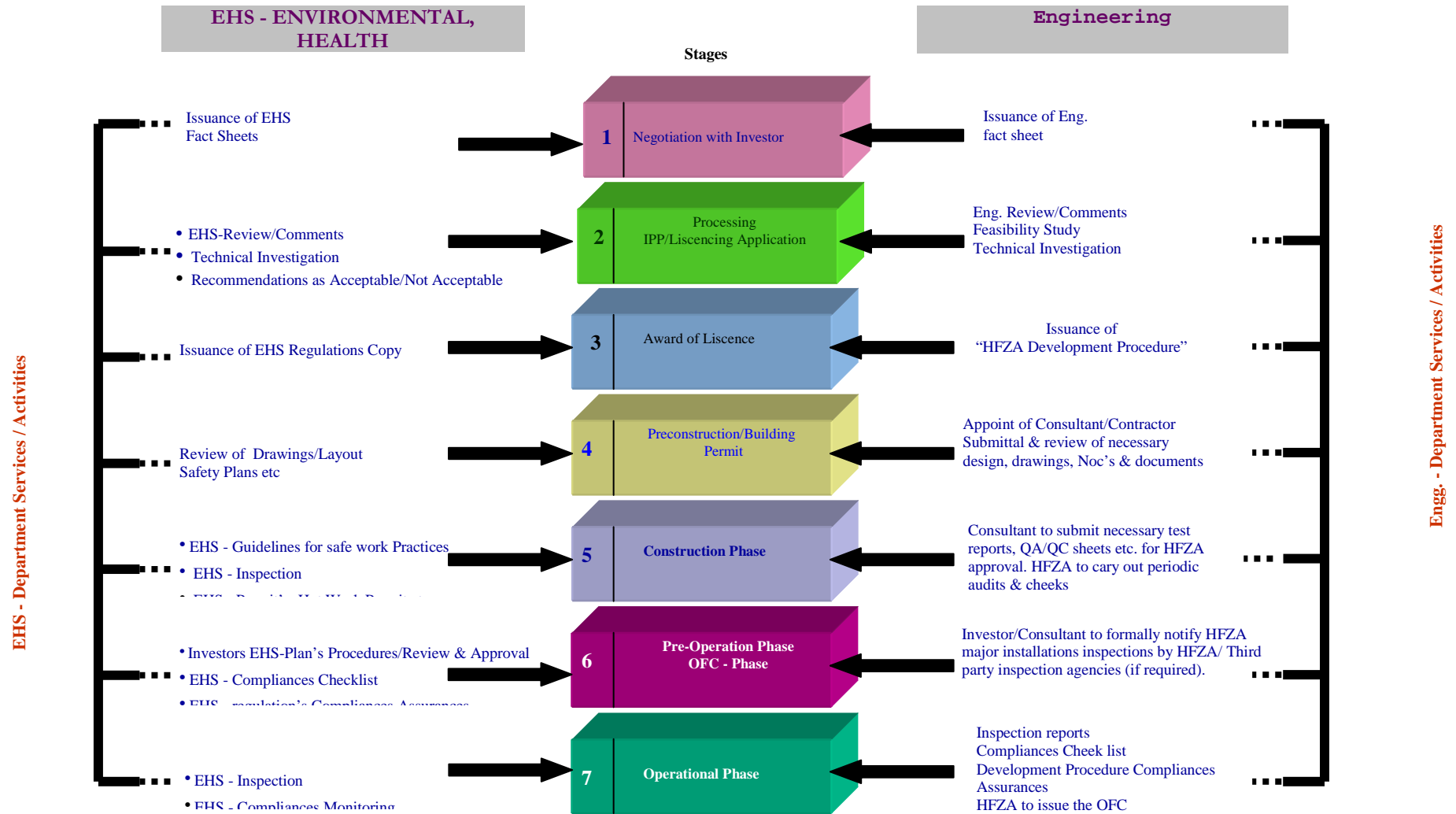
HEADQUARTERS : TEL : 971 6 5263333 FAX : 971 6 5263444

E-MAIL: hfz@emirates.net.ae WEB SITE : <http://www.hamriyahfz.com>

FLOW CHART FOR PROJECT DEVELOPMENT PROCEDURE



ENGG. & EHS DEPARTMENT'S WORK PLAN FOR INVESTORS



Environment, Health & Safety (EHS)

1) HAMRIYAH FREE ZONE'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 minimise 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 given in HFZA's Engineering Environmental Health & Safety Regulations. The first immediate verbal report should be made to HFZA Security Control Room at Phone # 5263070. 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 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 recognised air quality standards or criteria.

Dry emissions shall normally be vented to air with an efflux velocity of 10 to 15 m/sec at full load.

- **Warehouse Internal arrangement:** Arrangement in the warehouse shall conform to international standards, the internal clear passage shall confirm to the requirement of safe manoeuvring, 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 vapour pressure above atmospheric.

Use of ods – ozone depleting substances

UAE is a signatory of Montreal Protocol for Ozone depletion substances, HFZA is committed to complement the Govts. Efforts/Instructions for controlling the “OSD’s”, including 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. | e. Solvents |
| b. Aerosols | f. Fire Extinguishers. |
| c. Sterilants. | g. Adhesives |
| d. Fumigants. | 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 non hazardous class can be disposed off 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 there is no handling facility 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 OSHA 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 a 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 HFZA's EHS-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.

Discharge Limits :

Air Emission Pollutants (PPM = Parts Per Million)				
NO ₂ : 1 PPM	SO ₂ : 2 PPM	H ₂ S: 5 PPM	NH ₃ : 5 PPM	CO : 20 PPM
Pb : 01 mg/m ³				
Composition of Dry Industrial Air (%/V= Percent by Volume, Wt/V= mg/m ³)				
N ₂ : 78.048%/V	N ₂ : 75.52Wt/V	O ₂ : 20.94%/V	O ₂ : 23.11%Wt/V	
AR : 0.93%/V	AR: 1.28%Wt/V			
Dust				
Chimney Inert Dust - 0. 23gm/m ³	Fugitive Dust - no visibility		Heavy Process. Ind. - 0.1g/m ³	
Pollutants in Industrial Air				
CO ₂ : 5000 PPM	CO : 20 PPM		C ₂ H ₂	
H ₂	NO ₂ : 2 PPM		Ammonia: 5 PPM	
H ₂ S - 5 PPM	Mercaptans: 0.5 PPM		SO ₂ : 2 PPM	
NO _x : 200 PPM	C ₂ H ₂ : below explosion limits			
Marine : Liquid Affluents				
Floatables : 0	PH : 6-9	SS : 30/mg/l	Turbidity:75NTU	BOD:30
COD:150	TOC:50	TCH:0.1mg/l	Oil&Grease:10mg/l	Phenol:0.5mg/l
C ₂ H ₂ : 15mg/l				
30 days average				
Ammo. N ₂ : 2mg/l	Ar: 0.2mg/l	Cadmium:0.5mg/l	Chlorine :1.0 mg/l	Chr: 05mg/l
Copper :0.5 mg/l	Cyanide :0.1 mg/l	Pb : 0.1 mg/l	Mercury: 0.001 mg/l	Nickel :0.1 mg/l
Zinc : 0.5mg/l				
Standard Treated Water for Irrigation				
BOD :10 mg/l	SS:10 mg/l	Rsd. Cl : 2.5 mg/l	NHO ₃ :<1 mg/l	
Cl ₄ : <250 mg/l	PH:6.5-85 mg/l	Gen. SWTP Standard 30:20	Odor Total Control	
Noise Level				
Land Based Projects : 85 dba		Pre-built Units : 50 dba		

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 no urinals are provided:		Where 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 upwards	1 WC and 1 wash basin for every 20	100 women upwards	1 WC and basin for every 20
Where urinals are provided:			
Up to 100 men	1 WC for every 25		
	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		

Port Health: All food products entering the UAE must comply with the standards laid down by the Federal and Local Government. 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 that food products released to 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.

EHS PENALTIES & FEES

Ref.	Facility	Chargeable against	Tentative Charge
E100	Environmental control levy charges – and firmigation centre.	Against Pest Control and other Public Health care services	Annual charges 2% of rental or to a maximum Dhs. 5,000/- .
E200	Sampling for testing of materials and products specimens site laboratory	Against services of collection co-ordination, management and documentation.	Charges Dhs. 50-250 lease depend on extent of available service
E300	Solid waste (industrial) collection site	Against Provision of collection facility.	To be determined against extent of available facility and services
E400	Hanging clothes in areas other than dedicated for this purpose	Violation of Environmental Regulations	Dhs. 200/- per count
E500	Washing of vehicles in areas not allocated for this purpose.	Violation of Environmental Regulations	Dhs. 100/- per count
E600	Domestic Sewage effluent charges	Arranging, services as collection disposal, treatment (later)	25 – 50% of monthly water bill (minimum) or Dhs. 0.65/m ³
H500	Additional Inspection Charges against above	Against extra time of inspection to ensure, verification of compliance.	Dhs. 200/- per hour per Inspector
H600	Fine: taking meals in the public and work areas	Violation of hygiene regulations	Dhs. 50 – 200 per Count
E700	Industrial Effluent charges	Against collection and/or discharge through tankers Provision of sewage system and treatment facility.	Dhs. 130/- - trip Dhs. 100/- trip being charged in Sharjah Treatment charges Dhs. 0.65% m ³ Ordinary type Up to Dhs. 100/m ³ severe type
S100	Fine: Failure to report accident	Violation of safety rules / regulations	Dhs. 5000/- per case
S200	Damage to PBU offices, warehouses portables etc.	Violation of safety rules / regulations	Offices Dhs. 1000 – 3000 per offence Warehouse LT Ind. Units 3000/-
S300	Fine: unsafe parking of vehicles.	Road Safety Violations	Dhs. 100/- count.
S400	Fine: Spill of materials, chemicals etc. on roads	Safety Violation	Dhs. 2500/- incident.
EHS100	Fine: Storage and disposal, transportation of hazardous chemicals, i.e. not covered by license	Storage safety and Environmental regulation violations	Dhs. 5000/- case minimum
EHS200	Inclusion fee for inclusion of new product, material additives or activity in licence.	Charge against review and process and issue of permission	Dhs. 2000/- each items minimum
H100	Fine: For violation of federal labour law no: 8 which deals with occupational Health of workers	Violation of occupational Health law.	All the public sector and private sector following this law. Penalty amount depending on the severity of the case Dhs. 500/- 5000/- per count.
H200	Penalty : cooking in HFZA's accommodation rooms.	Penalty against violation of Health/Safety rules.	Dhs. 5000/- per count
HI300	Over capacity occupation of accommodation	Penalty against violation of Health/Hygiene rules	Dhs. 200/ day / room

EHS RELATED FACILITIES, SERVICES, FEES & PENALTIES SCHEDULE

EHS Dept. Work Plan for Investors	Stages	Eng. Dept. Work Plan for Investors
EHS Dept. Services / Activities		Eng. Dept. Services / Activities
Issuance of EHS Fact Sheets	Negotiation with Investor	Issuance of Eng. Fact Sheets
<ul style="list-style-type: none"> EHS-Review/Comments Technical Investigation Recommendations as Acceptable / Not Acceptable 	1. Processing IPP / Licence Application	<ul style="list-style-type: none"> Eng. Review/Comments Feasibility Study Technical Investigation
Issuance of EHS Regulations Copy	2. Award of Licence	Issuance of “HFZA Development Procedure”
Review of Drawings/Layout Safety Plans etc	3. Pre-construction/Building Permit	<ul style="list-style-type: none"> Appointment of Consultant / Contractor Submittal & review of necessary design, drawings, NOCs & documents.
<ul style="list-style-type: none"> EHS - Guidelines for safe work Practices EHS – Inspection EHS - Permit’s: Hot Work Permit etc. 	4. Construction Phase	<ul style="list-style-type: none"> Consultant to submit necessary test reports, QA/QC sheets etc. for HFZA approval. HFZA to carry out periodic audits & checks
<ul style="list-style-type: none"> Investors EHS-Plan’s Procedures / Review & Approval. EHS – Compliance Checklist EHS - regulation’s Compliance Assurances. 	5. Pre-Operation Phase OFC – Phase	<ul style="list-style-type: none"> Investor / Consultant to formally notify HFZA. Major installations inspections by HFZA / Third party inspection agencies (if required).
<ul style="list-style-type: none"> EHS – Inspection EHS – Compliance Monitoring 	6. Operational Phase	<ul style="list-style-type: none"> Inspection reports Compliance Check list Development Procedure Compliance Assurances HFZA to issue the OFC

Note: Exchange rate: US\$ 1 = Dh 3.67

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

Data contained in this leaflet is accurate at the time of release: October, 1999

HAMRIYAH FREE ZONE

GOVERNMENT OF SHARJAH FREE ZONE AUTHORITY P.O. BOX 1377, SHARJAH, UNITED ARAB EMIRATES.

Contact the DIRECTOR GENERAL or the COMMERCIAL DIRECTOR

HEADQUARTERS: TEL : 971 6 5263333 FAX : 971 6 5263444

E-MAIL: hfz@emirates.net.ae WEB SITE : <http://www.hamriyahfz.com>

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-acclimatised 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 anthropometric 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 transfer 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

1. 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 characteristic properties of dangerous substances

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 0°C and a boiling of less than or equal to 35°C.
Highly flammable	A substance <ol style="list-style-type: none"> 1. May become hot and finally catch fire in contact with air at ambient temperature without 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 21°C
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 lethal does (LD₅₀)		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	< 25	< 50	< 0.5
Toxic	> 25 to 200	> 50 to 400	> 0.5 to 2
Harmful	> 200 to 2000	> 400 to 2000	>2 to 20

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

Many regulatory agencies recommend a time-weighted average (TWA) sound level of 85 dB (A) to 90 dB (A) as a noise exposure limit for 8-hour work day.

The International Organization for standardization (ISO/DIS 1999/1990) recommends the use of the equal energy principle (3 dB exchange rate) in calculating the TWA for a work shift:

$$\text{Limit for a given shift} = 90 + 10 \log (8/T)$$

Where T= duration of work shift in hours. Results of such calculation for various extended work shifts are listed in Table 1.

Table 1 TWA Method	
Duration of Work shift (h)	Noise Exposure Limit (dB(A)) – TWA
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 (A). In other words, if the noise level is kept below 88 dB (A) 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 TWA 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 (A), which is lower than that allowed by the TWA method.

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 (A) 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 example 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
 (O) Satisfactory
 (X) Requires Action

EHS – Forms and Procedures

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

EHS – Forms and Procedures

<p>Are fire extinguishers chosen for the type of fire most likely in that area?</p> <p>Are there enough extinguishers present to do the job?</p> <p>Are extinguishers location conspicuously marked?</p> <p>Are extinguishers properly mounted and easily accessible?</p> <p>Are all extinguishers fully charged and operable?</p> <p>Are special purpose extinguishers clearly marked?</p> <p>MEANS OF EXIT</p> <p>Are there enough exits to allow prompt escape?</p> <p>Do employees have easy access to exits?</p> <p>Are exits unlocked to allow egress?</p> <p>Are exits clearly marked?</p> <p>Are exits and exit routes equipped with emergency lighting?</p> <p>WAREHOUSE AND SHIPPING</p> <p>Are dock platforms, bumpers, stairs and steps in good condition?</p> <p>Are light fixtures in good condition?</p> <p>Are all work areas clean and free of debris?</p> <p>Are stored materials properly stacked and spaced?</p> <p>Are tools kept in their proper place?</p> <p>Are there metal containers for oily rags and for rubbish?</p> <p>Are floors free of oil spillage or leakage?</p> <p>Is absorbent available for immediate clean-up of spills and leaks?</p> <p>Are all Class I products stored in Class I approved building or outside the warehouse?</p> <p>LOADING/UNLOADING RACKS</p> <p>Are steps, railings and retractable ramps on raised platforms in good repair?</p> <p>Is piping and in-line equipment in good condition and free of leaks?</p> <p>Are loading arms operating satisfactory?</p> <p>Do submerged filling two-stage valves operate properly?</p> <p>Are bonding and grounding cables free of breaks?</p>				
---	--	--	--	--

EHS – Forms and Procedures

<p>Are connections tight and sound?</p> <p>Is the general condition of wiring and junction boxes, etc. in good condition (visual inspection)?</p> <p>LIGHTING</p> <p>Is the level of light adequate for safe and comfortable performance of work?</p> <p>Does lighting produce glare on work surfaces, VDT screen and keyboards?</p> <p>Is emergency lighting adequate and regularly tested?</p> <p>MACHINE GUARDS</p> <p>Are all dangerous machine parts adequately guarded?</p> <p>Do machine guards meet standards?</p> <p>Are lockout procedures followed when performing maintenance with guards removed?</p> <p>ELECTRICAL</p> <p>Is the Canadian Electrical Code adhered to in operation, use repair and maintenance?</p> <p>Are all machines properly grounded?</p> <p>Are portable hand tools grounded or double insulated?</p> <p>Are junction boxes closed?</p> <p>Are extension cords out of the aisles where they can be abused by heavy traffic?</p> <p>Are extension cords being used as permanent wiring?</p> <p>TOOLS AND MACHINERY</p> <p>Are manufactures manuals kept for all tools and machinery?</p> <p>Do power tools conform to standards?</p> <p>Are tools properly designed for use employees?</p> <p>Are defective tools tagged and removed from service as part of a regular maintenance program?</p> <p>Are tools and machinery used so as to avoid electrical hazards?</p> <p>Is proper training given in the safe use of tools and machinery?</p> <p>Are first-aid supplies replenished as they are used?</p>				
--	--	--	--	--

EHS – Forms and Procedures

<p>PERSONAL PROTECTIVE EQUIPMENT</p> <p>Is required equipment provided, maintained and used?</p> <p>Does equipment meet requirements?</p> <p>Is it reliable?</p> <p>Is personal protection utilized only when it is not reasonably practicable to eliminate or control the hazardous substance or process?</p> <p>Are warning signs prominently displayed in all hazard areas?</p> <p>MATERIALS HANDLING AND STORAGE</p> <p>Is there safe clearance for all equipment through aisles and doors?</p> <p>Is stored material stable and secure?</p> <p>Are storage areas free from tipping hazards?</p> <p>Are only trained operators allowed to operate forklifts?</p> <p>Is charging of electric batteries performed only in designated areas?</p> <p>Are dock boards (bridge plates) used when loading or unloading from dock to truck or dock to rail car?</p> <p>Are necessary warning devices and signs in use for railway sidings?</p> <p>Are specifications posted for maximum loads which are approved for shelving, floors and roofs?</p> <p>Are racks and platforms loaded only within the limits of their capacity?</p> <p>Are chain hoists, ropes and slings adequate for the loads and marked accordingly?</p> <p>Are slings inspected daily before use?</p> <p>Are all new, repaired, or reconditioned alloy steel chain slings proof-tested before use?</p> <p>Are pallets and skids the correct type and inspected?</p> <p>Do personnel use proper lifting techniques?</p> <p>Is the size and condition of containers hazardous to workers?</p> <p>Are elevators, hoists, conveyors, balers, etc., properly used with appropriate signals and directional warning signs?</p> <p>Document last updated on February 27, 1998.</p>			
---	--	--	--

PERSONAL PROTECTIVE EQUIPMENT GUIDE

WORK ACTIVITY	P. P.	APPROVED CLOTHING / COVERALLS	HARD HAT	APPROVED FOOTWEAR / BOOTS	APPROVED GENERAL PURPOSE GLOVES	DUST MASK	RESPIRATOR CARTRIDGE TYPE	EAR PLUGS	EAR DEFENDER	GOGGLE MULTIPURPOSE	FACESHIELD	SAFETY HARNESS & LINE	CHEMICAL RESISTANT SUIT	CHEMICAL RESISTANT GAITERS	RUBBER BOOTS	AIR FLOW HOOD / APRON / GLOVES	SAFETY SPECTACLES	WELDING HELMET / JERKIN / GLOVES	DOSE / SURVEY METER READING	FILM BADGES	DISPOSABLE COVERALLS, GLOVES, SHOE COVERS &
	ACID HANDLING	X	X	X							X	X		X	X	X					
BATTERY MAINTENANCE	X	X	X							X	X			X							
CAUSTIC SODA HANDLING	X	X	X							X	X		X	X	X						
CEMENT HANDLING	X	X	X	X	X					X											
CHEMICAL HANDLING	X	X	X				X			X	X		X	X	X						
CHIPPING	X	X	X	X	X																
DEGREASING	X	X	X							X	X		X	X							
DRILLING	X	X	X			X		X									X				
DUST ATMOSPHERES	X	X	X			X	X			X											
ELECTRICAL	X	X	X																		
GRINDING	X	X	X	X	X			X		X	X										
GRIT BLASTING	X		X													X					
HIGH WIND CONDITION	X	X	X			X		X		X							X				
HEIGHT ABOVE 2 METERS	X	X	X									X									
JACK HAMMERING	X	X	X	X	X			X	X	X	X										
OIL SPLLS	X	X	X										X	X	X						
PAINTING (SPRAY)	X	X	X				X			X											
RADIOGRAPHY	X	X	X																X	X	
WORKING IN HIGH NOISE LEVEL	X	X	X					X	X												
WET WEATHER CONDITIONS	X	X	X										X		X						
WELDING	X		X															X			
LABORATORY	X		X														X				
ENTRY TO LAB. / WORKSHOP	X		X														X				
WORK IN VICINITY OF WELDING	X	X	X														X				
SANDING MACHINE OPERATIONS	X	X	X			X	X	X		X											
ASBESTOS HANDLING	X	X	X																		X
MACHINE TOOLS	X	X	X							X											

NOTES : This chart shows PPE that should be considered it does not mean that the identified PPE is always necessary nor sufficient.

TASKS OF A MORE HAZARDOUS NATURE E. G. 1. CONFINED SPACE ENTRY 2. TANK CLEANING 3. H₂S & ACID CONTAMINATION 4. WORK OVER WATER

WILL REQUIRE SPECIFIC P.P.E.

PERMIT TO WORK

1. AREA/TANK/VESSEL/EQUIPMENT/PIPELINE					
EXACT LOCATION:					
2. WORK TO BE DONE	COMPANY:		No of Men:		
	Man in Charge:				
	Attendant for Line 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	Oxygen				
(ring items which apply)					

1. Safety	2. Safety	3. Chemical	4. Face	5. Updraft	6. Air	7. Self-	8. Compressed	9. Dust	10. Ear
Helmet	Spectacles	Goggles	Shield	Helmet	Hood	contained	Air-line	Mask	Muffs
						C.A.B.A	B.A.		
11. Gloves	12. Rubber	13. Protective	14. Battersuit	15. PVC	16. Neoprene	17. Disposable	18. Plant	19. Safety	
P.V.C.	Boots	Footwear		Suit	Suit	Suit	Overalls	harness	
General	(Steel						Rubber		
Special	Toecaps)						Overboots		
							Rubber		
							Gloves		

c) Other Precautions

STAFF OF ISOLATION

Although the job may be isolated and pressurized, small residual quantities of hazardous chemicals may still be present **so wear protective clothing suitable for the risk.**

No. of Lines	Depressurized and Drained	Positive Isolation	Tagged Off	Valve only	Initials as applicable	Not Isolated	N/A
					Steam		
					Gas/Vapor		
					Liquid		
					Solids		
					Air		
					Nitrogen		

d) All Motive Power has been isolated and any logic

Control interrupted (LOCK/TAG/TRY)

Yes	NO	N/A
-----	----	-----

 Signed:..... Approved Signature

e) I have place

Signed:Person undertaking

work

f) Electrical fuses have been withdrawn, all circuits dead

Signed:.....Electrician

g) Electrical circuits are live for "Troubleshooting" only

Signed:.....Electrician/Inst.

4. 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, Roofwork or heights > 5m, H.V. Electricity.

Signed:Permit Signature

5. a) **CONFINED SPACE ENTRY** (Cancelled if Site Alert (pips) 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

Certificate No.: and is, therefore, safe to enter from to

On
Approved Signature

Signed:

Name of competent Attendant outside vessel:
.....

b) **HOT WORK** (Zone 1 or 2 or Open

c) **OTHER HAZARDOUS WORK** (See Safety Planning Certificate)

I have inspected the above job which has been safely prepared according to the precautions outlined above and on Safety Planning

Certificate No.: therefore work may start from To on

Signed: Approved Signature

7. APPROVAL OF PERMIT TO WORK

I am satisfied that this permit is properly authorised and that safe access is provided and that no work is taking place above or below this job. Work may proceed from to on Date Signed: Permit Signature

8. ACCEPTANCE OF PERMIT TO WORK

I have read and understood the above precautions and agree that for our/my protection we/I will observe them. I confirm that all our/my Power Tools and Equipment have been registered and inspected as required by Dow Standards and that we/I understand the Site and Area Emergency Plans
Signature:

9. COMPLETION OF PERMIT TO WORK

I certify that this job is complete/incomplete (ring appropriate word), that all guards have been replaced and secured in position, that all Tools and Equipment have been removed and the Job Site has been left clean and tidy.

Signature Time Date

RENEWAL OF PERMIT TO WORK (CONSECUTIVE SHIFTS ONLY)

10. Approved until Time/Date Permit Signature

Approved until Time/Date Permit Signature

NOTE: When a job is finished this Permit must be signed off in Section 9 and returned, Should the job not be completed by the time specified this Permit must be renewed. This Permit is cancelled if Area (warble) sounds.

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

KING'S LYNIN

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

2. CERTIFICATE APPLIED FOR BY:

Area/Tank/Equipment/Pipeline:

Exact Location:

Department/Contractor:

WORK TO BE DONE:

TOOLS TO BE USED:

Welding	Gas	Mobile Crane	Mobile Pump		Compressor	M/Vehicle	Cold Tools only
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:

N/A

Signed: _____ Approved Crane Supervisor: _____ Date: _____

4. **EXCAVATIONS:** I have inspected this job and it may proceed subject to the following precautions:

N/A

Signed: _____ Approved Construction Signature: _____ Date: _____

Signed: _____ Approved Electrical Signature: _____ Date: _____

5. **ROOFWORK – WORKING AT HEIGHTS AND ASBESTOS:** I have inspected this job and it may proceed subject to the following precautions:

N/A

Signed: _____ Approved Construction Signature: _____ Date: _____

6. **H.V. ELECTRICITY:** I have inspected this job and it may proceed subject to the following precautions:

N/A

It will be switched by

Signed: _____ Approved H.V. Electrical Signature: _____ Date: _____

7. I confirm that the Area/Tank/Vessel/Equipment/Pipeline, as described above, will be safe for the proposed work provided the precautions listed above, together with those ringed on the check list opposite, are taken.

Additional precautions: (if none, write none)

A permit to-work must be obtained from: _____ before work starts. This Safety planning Certificate is

Valid from _____ hours on _____ to _____ hours on _____

Section 6© on the permit to Work may be signed by _____

Signed _____ Approved Safety Planning Certificate Signature _____ Time: _____ Date: _____

8. **HOT WORK IN ZONE 1 OR ZONE 2 AREAS OR H.V. ELECTRICAL WORK OR ANY PLANT CHANGE:**

N/A

I confirm that the above work may take place provided all the stated conditions are satisfied

Signed: _____ Authorized Signature _____ Time: _____ Date: _____

9. **RENEWAL:** Subject to the provisions and precautions stated above and opposite this certificate is future valid.

Renewed from _____	hours on _____	to _____	hours on _____	signature (approved SPC): _____
Renewed from _____	hours on _____	to _____	hours on _____	signature (approved SPC): _____
Renewed from _____	hours on _____	to _____	hours on _____	signature (approved SPC): _____

NOTE: (a) 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)

<p>SIGN GENERAL PRECAUTIONS</p> <p>001. All power tools and equipment (including steps and ladders) must be registered with valid label affixed.</p> <p>002. All power tools must be 110 volts maximum.</p> <p>003. Ensure that power supply cables to transformers and welding sets above 110 volts are less than six feet long.</p> <p>004. Suitable steps or ladders to be used.</p> <p>005. Scaffolding to be erected and inspected by competent persons and notice fixed before use (mobile or fixed).</p> <p>006. Provide life-line.</p> <p>007. Use inertia fall arrest or (e.g. Sala Block)</p> <p>008. Cordon off work area, above and below.</p> <p>009. Notify adjacent plants/areas.</p> <p>010. Check that all holes, excavations, work areas where covers or drains are removed are barricaded off and warning notices affixed. At night any such hazards must be adequately lit.</p> <p>011. Isolate all power driven wquipment before work starts LOCK, TAG and TRY.</p> <p>012. Check showers and eye bath units before work starts.</p> <p>013. Instigate safe procedures for materials containing asbestos to comply with King's Lynn Site Standard No. 20 Asbestos.</p> <p>014.</p> <p>015.</p> <p>PROTECTIVE CLOTHING</p> <p>100. Protection required:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">1. Chemical Goggles</td> <td style="width: 25%;">2. Face Shield</td> <td style="width: 25%;">3. Update Helmet</td> <td style="width: 25%;">4. Air Hood</td> </tr> <tr> <td>5. Self contained C.A.B.A.</td> <td>6. Compressed Air-line B.A.</td> <td>7. Dust Mask</td> <td>8. Ear Muffs</td> </tr> <tr> <td>9. Gloves PVC Gen. Spec.</td> <td>10. Rbber Boots (Steel Toecaps)</td> <td>11. Protective Footwear</td> <td>12. PVC Suit</td> </tr> <tr> <td>13. Neoprene Suit</td> <td>14. Disposable Sit</td> <td>15. Plant Overalls Rubber Overboots Rubber Gloves</td> <td>16. Sfety Hrnes s</td> </tr> </table>	1. Chemical Goggles	2. Face Shield	3. Update Helmet	4. Air Hood	5. Self contained C.A.B.A.	6. Compressed Air-line B.A.	7. Dust Mask	8. Ear Muffs	9. Gloves PVC Gen. Spec.	10. Rbber Boots (Steel Toecaps)	11. Protective Footwear	12. PVC Suit	13. Neoprene Suit	14. Disposable Sit	15. Plant Overalls Rubber Overboots Rubber Gloves	16. Sfety Hrnes s	<p>SIGN HOT WORKcontinued</p> <p>410. Check welding cables are in good condition and where they must cross pipelines a suitable insulating bridging must be used to prevent possible contact. Weld return routing via installed equipment is prohibited.</p> <p>411. Site gas cylinders so as to be clear of sparks and slag.</p> <p>412. Check detachable cylinder key in situ.</p> <p>413. Check compressed gas cylinders are used in metal wheeled trolley (not frees standing or fixed to a structure)</p> <p>414. Test all compressed gas connections using soap solution before work starts.</p> <p>415. Check that oxygen and fuel gases have flash-back arrestors fitted between regulators and supply hose and that non-return valves are fitted between torch and supply hoses.</p> <p>416. Check that all hoses are in good condition and located away from traffic. They should not present a tripping hazard to personnel.</p> <p>417. Erect screens to safeguard personnel from U.V. radiation.</p> <p>418. Site diesel driven D.C. generating sets in open air to prevent fumes accumulating in work area.</p> <p>419. Check that smoke detectors are isolated.</p> <p>ENTRY INTO CONFINED SPACES</p> <p>500. All pipelines must be isolated, either by removing spool pieces and blanking off live ends or by inserting spade in lines.</p> <p>501. isolate agitator by removal of fuses, followed by LOCK TAG and TRY.</p> <p>502. Trained attendant to stand by outside vessel (must be named on Permit to Work).</p> <p>503. Use mini-winch with life-line and full hoister type-safety harness...</p>
1. Chemical Goggles	2. Face Shield	3. Update Helmet	4. Air Hood														
5. Self contained C.A.B.A.	6. Compressed Air-line B.A.	7. Dust Mask	8. Ear Muffs														
9. Gloves PVC Gen. Spec.	10. Rbber Boots (Steel Toecaps)	11. Protective Footwear	12. PVC Suit														
13. Neoprene Suit	14. Disposable Sit	15. Plant Overalls Rubber Overboots Rubber Gloves	16. Sfety Hrnes s														

<p>ATMOSPHERE TESTING</p> <p>200. Test for flammable vapours (explosimeter) BEFORE WORK STARTS/REPEAT EVERYHOURS/ MONITOR CONTINUOUSLY.</p> <p>201. Test for oxygen BEFORE WORK STARTS/ REPEAT EVERY HOURS/MONITOR CONTINUOUSLY</p> <p>202. Test for toxic gas BEFORE WORK STARTS/ REPEAT EVERY.....HOURS/MONITOR CONTINUOUSLY.</p> <p>LINE BREAKING</p> <p>300. Positively identify by tagging, taping or painting.</p> <p>301. Before cutting into a pipeline a “test” hole should be drilled in the pipe.</p> <p>302 Process operator to “stand by” (protected to same standard as craftsman).</p> <p>303 Check pipeline suspension.</p> <p>304 Drain and isolate line, lock off pump(s).</p> <p>305 Provide scaffolding – fitter should work at waist height.</p> <p>306 Blank off open ends of pipelines.</p> <p>307 Flush area with water after job to ensure no spillage left.</p> <p>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)</p>	<p>504. Check vessel is cool enough to enter (<35°C).</p> <p>505. Use air mover or fan (must be grounded)</p> <p>506. Use 24 volt lamp</p> <p>507. Check adequacy of means of vessel entry/exit</p> <p>508. Provide portable alarm for attendant.</p> <p>509. Provide two sets of breathing apparatus outside vessel.</p> <p>510. Compressed gas cylinders must be kept out of confined spaces.</p> <p>MOBILE CRANES</p> <p>600. Simple lift – banksman to be named on Work Permit (3c).</p> <p>601. Qualified Dow representative in control – Name</p> <p>602. Critical lift 0 check list completed – Construction Supervisor or Owner’s Representative (mech.) in control.</p> <p>EXCAVATIONS</p> <p>700.Over 1.2 metres deep – Construction Department in control</p> <p>701. Hand dig only</p> <p>702. Sides of excavation made secure.</p> <p>703. Test ground water for contamination</p>
<p>HOT WORK</p> <p>400. Guard against falling sparks and slag.</p> <p>401. Keep work area and below wet with running water.</p> <p>402. Institute fire watch.</p> <p>403. Check area 30 minutes after cessation of work.</p> <p>404. Check work area every minutes.</p> <p>405. Run out fire hose.</p> <p>406. Provide fire extinguisher, Type.</p> <p>407. Clear all combustible materials from work area.</p> <p>408. Remove all full and empty drums from area.</p> <p>409. Use only approved welding set, see safety Standard No. 17</p>	<p><u>ROOF WORK & HEIGHTS GREATER THAN 5 METRES WHERE THERE IS NO PERMANENT ACCESS</u></p> <p>800. Crawling boards must be used.</p> <p>801. Working method and safety devices to be approved and recorded by Construction Signator.</p> <p>802. Provide working platform with handrail and toe boards.</p>

EEHS FACT SHEET

1. Discharge Limits :

Air Emission Pollutants (PPM = Parts Per Million)

NO ₂ : 1 PPM	SO ₂ : 2 PPM	H ₂ S : 5 PPM	NH ₃ 5 PPM	CO ₂ : 20 PPM
Pb : 01 mg/m ³				

Composition of Dry Industrial Air (%/V= Percent by Volume, Wt/V= mg/m³)

N ₂ : 78.04%/V	N ₂ : 75.52Wt/V	O ₂ : 20.94%/V	O ₂ : 23.11%Wt/V
AR : 0.93%/V	AR : 1.28%Wt/V		

Dust

Chimney Inert Dust – 0.23gm/m ³	Fugitive Dust – no visibility	Heavy Process. Ind. 0.1g/m ³
---	-------------------------------	--

Pollutants in Industrial Air

CO ₂ : 5000 PPM	CO : 20 PPM	C ₂ H ₂
H ₂	NO ₂ : 2 PPM	AMMONIA: 5 PPM
H ₂ S – 5 PPM	MERCAPTANS: 0.5 PPM	SO ₂ : 2 PPM
NO _x : 200 PPM	C ₂ H ₂ : below explosoin limits	

Marine : Liquid Effluents

Floatables : 0	PH : 6-9	SS : 30/mg/1	Turbidity : 75 NTU	BOD : 30
COD : 150	TOC : 50	TCH : 0.1mg/1	Oil & Grease : 10mg/1	Phenol : 0.5mg/1
C ₂ H ₂ : 15mg/1				

30 days average

Ammo. N ₂ : 2mg/1	Ar: 0.2mg/1	Cadmium: 0.5mg/1	Chlorine: 1.0mg/1	Chr: 05mg/1
Copper: 0.5mg/1	Cyanide: 0.1mg/1	Pb: 0.1mg/1	Mercury: 0.001mg/1	Nickel: 0.1mg/1
Zinc: 0.5 mg/1				

Standard Treated Water for Irrigation

BOD: 01 mg/1	SS: 10 mg/1	Rsd. CI : 2.5 mg/1	NHO ₃ : <1 mg/1
Cl ₄ : <250 mg/1	PH: 6.5-85 mg/1	Gen. SWTP Standard 30:20	Odor Total Control

Noise: 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 own capacity will be required to make arrangement with Sharjah and other Municipalities. Import Export and Trading of Haz. 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. Dry emissions shall normally be vented to air with an efflux velocity of 10 to 15 m/sec at full load.

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.

To reduce the risk of mist formation, emissions containing ammonia should not be mixed with other emissions, and outlets should be spaced be as far as practicable from outlets discharging acidic gases.

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.

<i>Male</i>		<i>Female</i>	
Where no urinals 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 urinals are provided:			
Up to 100 men	1 WC for every 25		
	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 UAE 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’l warehouse standards, the internal clear passage shall confirm to the requirement of safe maneuvering, incase 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 Adequate 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 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

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.

MAXIMUM EXPOSURE LIMITS

Substance	Formula	Reference Periods			
		Long term maximum exposure limit (8-hour TWA reference period)		Short maximum exposure limit (10-minute reference period)	
		ppm	mg m ³	ppm	mg m ³
Acrylonitrile	CH ₂ = CHCN	2	4	-	-
Arsenic & compounds except arsine and lead arsenate (as As)	As	-	0.2	-	-
Butra-1.3-diene	CH ₂ = CHCN = CH ₂	10	-	-	-
2-Butoxyethanol	C ₄ H ₉ OCH ₂ CH ₂ OH	25	120	-	-
Cadmium & cadmium compounds except cadmium oxide fume and cadmium sulphide pigments (as Cd)	Cd	-	0.05	-	-
Cadmium oxide fume (as Cd)	CdO	-	0.05	0.05	-
Cadmium sulphide pigments (respirable dust as Cd)	CdS	-	0.04	-	-
Carbon disulphide	CS ₂	10	30	-	-
Dichloromethane	CH ₂ Cl ₂	100	350	-	-
2,2' Dichloro 4,4' methylene diamline (MbOCA)	CH ₂ (C ₆ H ₃ CINH ₂) ₂	-	0.005	-	-
2-Ethoxyethanol	C ₂ H ₅ OCH ₂ CH ₂ OH	10	37	-	-
2-Ethoxyethyl acetate	C ₂ H ₅ OCH ₂ CH ₂ OOC CH ₃	10	54	-	-
Ethylene dibromide	BrCH ₂ CH ₂ Br	1	8	-	-
Ethylene oxide	CH ₂ CH ₂ O	5	10	-	-
Formaldehyde	HCHO	2	2.5	2	2.5
Hydrogen cyanide	HCN	-	-	10	10
Isocyanates all (as NCO)		-	0.02	-	0.07
Man-made mineral fibre		-	5	-	-
1-Methoxypropan-2-ol	CH ₃ OCH ₂ CHOHC H ₃	100	360	-	-
2-Methoxyethanol	CH ₃ OCH ₂ CH ₂ OH	5	16	-	-
2-Methoxyethyl acetate	CH ₃ COOCH ₂ CH ₂ O CH ₃	5	24	-	-
Rubber process dust		-	8	-	-
Rubber fume		-	0.75	-	-

Substance	Formula	Reference Periods			
		Long term maximum exposure limit (8-hour TWA reference period)		Short maximum exposure limit (10-minute reference period)	
		ppm	mg m ³	ppm	mg m ³
Styrene	C ₆ H ₅ CH = CH ₂	100	420	250	1050
1.1.1 - Trichloroethane	CH ₃ CCl ₃	350	1900	450	2450
Trichloroethylene	CCl ₂ = CHCl	100	535	150	802
Vinyl chloride (Vinyl chloride is also subject to an overriding annual maximum exposure limit of 3 ppm)	CH ₂ = CHCl	7	-	-	-
Vinylidene chloride	CH ₂ = CCl ₂	10	40	-	-
Wood dust (hard wood)		-	5	-	-

Limit relates to cyclohexane soluble material

UTILITIES

Please provide the details of your requirements for:

- 1) Electricity
- 2) Water
- 3) Telephones
- 4) Waste Disposals
- 5) Civil Defense

We have 4 (four) types of facilities for lease:

1. Pre-built warehouses having areas of 416m2 and 614m2.
2. Plots for lease (sizes as per requirements).
3. Office spaces for lease.
4. Accommodation Complex.

1.

ELECTRICITY

The nominal voltage of electricity supply is 415V, 3PH, 50HZ for low voltage consumers and 11KV, 3PH, 50HZ for high voltage consumers.

i. For Pre-built Warehouses

Available Capacity	=	57.5KW (3PH, 50HZ)
Availed Capacity	=	24.0KW (3PH, 50HZ)
Spare Capacity	=	33.5KW (3PH, 50HZ)

For any modification / of the installation, upgrading.

The investor has to appoint a HFZA/SEWA approved contractor. The following drawings have to be approved by HFZA/SEWA prior to the commencement of the works.

1. Layout Plan of the Plant.
2. Single Line Diagram-Existing and proposed.
3. Load Distribution Schedule - Existing and proposed.
4. Connected Load – Existing and proposed.
5. Equipment Data Sheet.

The complete cost for modification / upgrading of the installation has to be borne by the investor.

ii. Plots For Lease

The investor has to get his requirements of electricity, approved by HFZA/SEWA prior to signing the contract.

TCL	=	Total Connected Load	=	-----	KW
DF	=	Diversity Factor	=	-----	KW
PF	=	Power Factor	=	0.9	
MD	=	Maximum Demand	=	$(TCL \times DF) / PF$	= ----- KW

Prior to signing of lease contract the power requirement has to be approved by HFZA/SEWA.

The investor appointed consultant/contractor has to get all the drawings and documents approved mentioned in section 3.1.1 by HFZA/SEWA prior to the commencements of the works.

iii. **Offices Spaces**

To be used with the available existing facilities.

iv. **Accommodation Complex**

To be used with the available existing facilities.

General: for the electricity connection the appointed contractor has to submit the electricity connection application forms to SEWA with a letter from HFZA.

2. WATER

For the warehouse and plot investor the daily requirement of water is to be mentioned.

Water _____ gallons/day.

General: For the water connection the appointed contractor has to submit the water connection application forms to SEWA with a letter from HFZA.

3. TELEPHONE

All investors are requested to furnish their complete requirements:

- No of telephone lines required =
- No of ISDN required =
- No of Faxes required =
- No of Data transmission line required =
- No of dedicated lines required =
- Any other requirements required =

4. WASTE DISPOSAL

Details of disposal = _____ gallon/day
Type of wastes = _____
Details of treatment required for the waste = _____

5. CIVIL DIFENSE

The fire alarm and fire fighting system has to be approved by Civil Defense Dept., Sharjah.

The appointed contractor has to get the drawings and documents approved from Civil Defense by obtaining a letter approval from HFZA.

DEPARTMENT OF SEA PORTS AND CUSTOMS SHARJAH

CONDITIONS OF USE : NOTICE TO MASTERS

YOU ARE HEREBY ADVISED : That the conditions of use of the ports of Sharjah are as follows :

1. Pilotage is compulsory for all ships entering or leaving Sharjah Ports and Creeks. The Port accepts no responsibility for any damage occurring during the berthing or unberthing of your ship. The vessel should at all times remain under Master's command and pilot's advice. Pilot's advice shall not under any circumstances exonerate the Master and Owners from liability for any damage occurring during the berthing / unberthing operation.
2. The Master and Owners of a vessel shall be held liable jointly and severally for any actual and consequential damage whatsoever, however caused by their vessel, or assisting tugs or servants including Sharjah Ports Authority employees and contractors, to any of the assets, structures, equipment, craft or property of the ports and/or other vessels and craft within the Port's jurisdiction. Sharjah Ports Authority reserves the right to detain the vessel until security has been given for the estimated amount of damage caused. Estimated damage shall be drawn up by an approved Lloyds Surveyor or other competent person.
3.
 - a) Sharjah Ports Authority, Department of Ports & Customs accepts no responsibility or liability whatsoever for any actual or consequential damage to the ship, its structure, its handling gear, equipment or fittings, or to any of its cargo, howsoever and by whomsoever caused during the vessel's port call and associated activities.
 - b) In the event of any accident occurring, howsoever caused, which involves port stevedores and/or others during the course of cargo handling or the vessel's shifting or hauling operations, the Master and/or Owners, and/or Operator, and/or Charterer shall be held liable jointly and severally for settlement of any claim for either direct or consequential loss that may arise out of the accident. Sharjah Ports Authority reserves the right to conduct its own investigation into any incident and to interview and obtain statements from the Master and other servants of the Owners, Operator, or Charterer.
 - c) The Owners, Master, Operator, Charterer or their Agents agree to indemnify and hold harmless Sharjah Ports Authority, its employees, servants, any of its agents, or contractors from and against all losses, claims, demands and suits for damage to the ship and/or assets and for death or personal injury that may result as a consequence of services rendered within the port.
4. The Master must formally declare to the pilot upon boarding any maneuvering deficiency or limitations of the vessel.
5. When alongside the berth, or on moorings, the Master shall ensure that :
 - a) His vessel is adequately and safely manned and ready for all emergencies and is ready for hauling or shifting at any time as required by the Port Authority (prior notice will be given under normal circumstances).
 - b) A safe and proper accommodation ladder, provided with save all net, is adequately lit during the hours of darkness and properly watched throughout.
 - c) Rat guards are provided and fitted securely to all mooring ropes and / or wires.
 - d) No substances, matter or material are discharged or thrown overboard, either into the water or onto the jetty.
 - e) If hazardous substances are being worked, the relevant International Regulations and Recommendations together with the Port's regulations are fully complied with.
 - f) He and his crew should duly respect the customs and traditions of Sharjah whilst on board and during shore leave.

6. All Tankers, Car Carriers (Ro/Ro + Lo/Lo) must have fire wires rigged, Fore & Aft, ready and constantly tended to remain 1.5 Meters above the water for emergency towing.
7. The Masters of all Car Carriers must produce a Fire Fighting & Emergency Plan to the Port Authority upon arrival.
8. The original copies of all the ship's Certificates shall be produced to any Port Official on demand. Where a ship is more than 15 years old, a valid Certificate of Condition and Seaworthiness issued by a recognized Authority or Agency shall be on board.

Where certificates are found to be invalid, and notwithstanding any fines payable, the ship may be removed from the Port Area at Ship's expenses and re-entry permitted only after validity has been confirmed.

Failure to produce any certificate to a Port Official when demanded renders the Master and Owners jointly and severally liable to a fine of up to Dhs.50,000 in addition to the removal of the ship from the Port Area.

9. No engine repairs may be undertaken which would prevent the movement of the ship under her own power, without first obtaining the written permission of the Harbour Master.
10. Any kind of pollution in Sharjah Waters is strictly prohibited. The Master and/or Owners and/or Charterer and/or Operator of any vessel causing pollution shall jointly and severally be held liable to a fine of upto Dhs.500,000 in addition to any other expenses, which may be incurred in the removal and clean up of such pollution. They shall also jointly and severally be held liable for damages and claims filed by third parties.
11. The Master must declare to the agents any stowaway on board prior to arrival and also to the pilot upon boarding. Failure to do so will lead to serious consequences.
12. All Vessels (except container ships) which use the container berths 1A, 1 & 2 should obtain permission from the Port and/or Sharjah Container Terminal prior to using ship's Crane or Derricks.

GENERAL PORT INFORMATION

The harbour at Hamriyah was commenced in 1984 and completed in 1986, followed by the construction of the LPG loading berth which is owned by SHALCO and operated by AMOCO. Sharjah Ports Authority has acquired overall charge of Hamriyah Port and they are the Port Operators. Hamriyah Port is fast developing and is located on the Arabian Peninsula, 15 Kms. along the North Coast from Sharjah Port and Sharjah City. The port has LPG Terminal, Oil Tanker Terminal, General Cargo Berth and SOR Terminal. The port is able to accommodate very large and deep draughted General Cargo Vessels as well as LPG Tankers and Oil Tankers.

ADVANTAGES

Easy access linking all seven Emirates also providing connections to neighbouring Gulf States closer to the straits of Hormuz than other Southern Emirates ports. A few miles away from Sharjah City and Industrial areas.

As the Port is adjacent to Hamriyah Free Zone, the Free Zone Investors are able to save time and cost.

PORT LOCATION

The Hamriyah Port is located outside the village of Hamriyah on the coast line between Umm Al Quwain and Ajman, adjacent to Hamriyah Free Zone, in the Emirates of Sharjah, United Arab Emirates.

CLIMATE

The climate along the coast line of Sharjah is characterized by cool winters and very hot summer. The annual mean rainfall is 4.2 inches and the relative humidity varies considerably according to the time of day.

WINDS

The winds in the southern part of the Arabian Gulf are usually light and generally blow from the western quadrant most of the year, but are occasionally interrupted by winds from varying directions. Visibility is generally good.

COMMUNICATIONS

It is important that vessels establish communications with the port via their agents at least 72 hours prior to arrival at Hamriyah and maintain regular contact until to the final arrival. Sharjah Ports Authority and Hamriyah Port are equipped with marine and VHF radios using international frequencies and maintain a radio watch on channel 16 & 72.

APPROACH DETAILS

The channel Fairway buoy is situated in approximate position 25° 32.2'N 55° 26.0'E and displays a white light, range 5 miles and coded "A" every 15 seconds. The approach channel's entrance is located in approximate position of 25° 31'N 55° 27' E. The channel's length is 4,000 meters. The width is 180 meters in the seaward channel, 250 meters in intermediate channel, and 180 meters in the near harbour channel. The channel depth has been dredged to 15 meters and within the harbour has been dredged to a depth of 14 meters providing a turning basin diameter of 600 meters. Maximum draught for vessels calling at the Hamriyah Port is 13 meters.

BERTHING DETAILS

Pilotage is compulsory from the seaward of the dredged channel. The port operator will arrange the PILOTS, TUG BOATS, MOORING CRAFTS AND MOORING MEN.

The weather restrictions are either no berthing during strong North East wind or when is in excess of 25 knots. Present berthing and unberthing of vessels during daylight hours only (0600 Hrs to 1600 Hrs.)

GENERAL CARGO BERTH

The construction of this berth was completed in 1995. The quay length of the General Cargo Berth is 250 meters backed with a cargo area of 16,000 square meter. Ship of 23-Q meters LOA and 13 meters draught can be accommodated in this berth. This berth is specially designed for bulk grain cargoes discharging from the ships using a rail mounted evacuator

transporting the grain to the adjacent silos. In addition to the bulk cargoes, the port handles general cargo and log shipments.

OIL PONTOON BERTH

The Pontoon berth is specially to accommodate Oil tankers. The facility can accommodate vessels up to 180 meters in length and up to 30,000 Tons deadweight. The 900 meter separate pipe lines built in accordance with international safety standards for oil and bitumen from berth to tanks saves time and cost.

OTHER DETAILS OF PONTOON BERTH

A. BERTHING

LOA-	Minimum	No restriction
Maximum	180 meter.	
DRAFT-	Maximum	12.6.Meter
	On high water	13 Meter

Berthing & Unberthing-During daylight only.

B. LOADING/UNLOADING

Loading Rate:	150 to 200 MT/Hour
Discharging Rate:	200 to 800 MT/Hour
Connection Pipe Size:	8" Diameter and 30 Meter long
Distance from Jetty to Terminal:	900 Meters.

Size of Pipe line:	10" Dia. 2 nos. for handling DGO & FO
12" Dia.	1 no. for handling Bitumen.

LPG TERMINAL

LPG Terminal is operated 24 hours a day, 7 days a week weather and circumstances permitting. Vessel will be moored/unmoored in daylight hours only, but loading will be performed at any hour. The terminal consist of two storage tanks for propane and butane with associated facilities and a marine loading facility.

FAL/SOR BERTH

This berth is ready for operation and is expected to start calling vessels in the middle of 2003. This facility can accommodate tankers of between 40,000 and 5,000 tonnes dwt.

DOCUMENTATION

1. The vessel's initial Notice of Arrival must be notified to the Port Authority at least 72 hours prior to arrival.
2. The owner's agent/consignee must submit to the Dept. of Ports & Customs the following documents:-
 - a) Cargo Manifest
 - b) Cargo Plan
 - c) Hatch List
 - d) List of Dangerous Cargo to load or discharge.
3. Prior to ships arrival, an undertaking should be submitted by the agents/consignees to pay all associated charges and duty to Dept. of Ports and Customs relating to the vessel's port of call.

FRESH WATER AND FUEL

Fresh water is available on request. Fuel can be arranged through vessel's agent.

PORT REGULATIONS

A. DOCUMENTS

The following documents are required when vessels calling at the Hamriyah Port :

- a. Health Declaration
- b. Crew List
- c. Clearance from last port of call
- d. Clearance from Coast Guard.

B. FLAG

Vessels are required to fly the flag of the United Arab Emirates on the foremast during daylight hours while in Sharjah waters. The Sharjah territorial waters extend 12 nautical miles seaward from the Sharjah coastline.

C. REPAIRS

There are no facilities for making vessel repairs at the Hamriyah Port and no repairs will be allowed at the LPG jetty. However, arrangements can be made for repairing work for the vessels at general cargo berth through the vessel's agent.

D. SHORE LEAVE AND CREW CHANGE

Vessel personnel (other than medical emergency cases) are not allowed to embark or disembark from the vessel at the LPG Jetty. Crew changing is allowed but restricted at LPG terminal.

E. VISITORS .

Visitors are not allowed on the vessels at the LPG terminal without permission from the Terminal Operator.

BERTHING AND UNBERTHING FACILITIES

Hamriyah Port will be providing all berthing and unberthing facilities with new tug boats and pilot boats encompass the latest towing technology and state of the art communication equipment.

1. SUPPLEMENTARY REQUIREMENTS

1.1 The Authority may by written notice:-

- a) Specify additional requirements and conditions to be met by vessels and craft making use of the port facilities in the interest of the general safety of the port.
- b) order vessels to evacuate the port :

1.2. EXEMPTIONS

The Authority may with or without conditions, exempt any vessel or class of vessels from any provisions of these rules and regulations, and may, subject to giving ; reasonable notice, amend or cancel any such exemption.

1.3. EXCEPTIONAL POWERS AND ADDITIONAL MEASURES

Notwithstanding anything contained in these rules and regulations, the Authority is hereby granted exceptional powers and may also employ additional measures in any instance to ensure the safety and integrity of the port as well as all harbour assets.

HAMRIYAH PORT RULES

1. TRAFFIC MANAGEMENT

In order to maintain the safety of navigation within Port limits, the Authority will Enforce Traffic Management Regulations which will be binding on vessels Navigating within the prescribed Port Limits.

2. CARGO OPERATIONS

As a result of the diverse nature of commodities handled within the Port the Authority will impose, monitor and maintain Cargo Operation Regulations closely Aligned to Internationally accepted safe working practices, guidelines and Recommendations.

3. PILOTAGE .

Pilotage within the limits of the port is compulsory except in instances where Pilot Exemptions are granted. The Authority will provide and maintain the pilotage Service.

4. CONDUCT IN PORT

All vessels together with their master, officers and crew will maintain a level of conduct as prescribed by Conduct in Port Regulations set out by the Authority.

5. ENVIRONMENT PROTECTION

In accordance with various international conventions, protocols, codes, recommendations and guidelines, the Authority will enforce regulations to ensure that environmental risk is minimized.

ANCHORAGE AND PILOT BOARDING POSITIONS :

Position of anchorage areas, each having a 1 mile radius, and which may be given to ships are as follows :-

Anchorage	A	Latitude	25° 33' 20 NORTH
Longitude	55°		20' 47 EAST

(This anchorage is reserved for LPG ships, Tankers, or ships carrying dangerous cargoes)

Anchorage	B	Latitude	25° 31' 60 NORTH
Longitude	55°		22' 83 EAST

Anchorage	C	Latitude	25° 30' 08 NORTH
Longitude	55°		25' 08 EAST

Pilot Boarding Position

Latitude 25° 32' 93 NORTH

Longitude 55° 25' 16 EAST

(Approximately one mile North West of Fairway Buoy)

Note:- While the information is intended to acquaint the port users, such information is provided without any guarantee on the part of Hamriyah Port as to its accuracy or completeness do not assume, nor accept any responsibility for the use of any information contained herein by any person.

EHS: GUIDELINES FOR RESTAURANTS, CAFETERIAS AND CATERERS

1. All gas cylinders should be kept at isolated location from the fire, heat and sitting areas. Ideally within a protective enclosure.
2. Appropriate length of flexible and rigid connection hoses will be required to be installed, hoses should not be hung over the cylinders, hoses should not be laid on hot and steam vessels, and pipes etc.
3. Gas cylinders should not be subject to impact and should not be placed under intense sunshine
4. Valves on all gas cylinders must always be kept closed after works. Blow back valve arrests to be provided.
5. Applicable type of fire extinguishers shall be installed at all required locations.
6. Pressure vessels such as roasters etc. should confirm to the safety requirements.
7. No alterations to the existing electrical wiring will be made without the prior approval of the FZE Authority.
8. Cooking area walls and ceiling should be made out of fireproof materials.
9. Appropriate type of fly mesh, electric fly killer to be installed
10. Waste oil and any other material should be collected separately and disposed off.
11. Grease traps should be installed wherever applicable
12. All the part of the facility should be kept clean and tidy
13. Applicable type of bin and garbage collectors to be provided to control the refuse and fits related items
14. A proper vent to release the steams, smoke and fumes to be installed confirming standard of practice.
15. The odor shall be prevented to reach to neighborhoods.
16. No condensation and drops shall appear over food processing lines
17. The floor covering shall be of a type confirming to non-toxic, non-absorbent, waterproof, easy to clean and disinfected class. Lighting the minimum intensity of lighting should be 540 lux.
18. Uniform : The uniforms and apparels of the employees should confirm the high standard of practice
19. Crockery cleaning shall confirm to the following practices:
20. Scraping and pre-rinsing
21. Cleaning in warm water with food grade detergents.
22. Sterilization or bacterial treatment.
23. Drying by use of drying racks and draining boards etc. Always clean dry clothes to be used for wiping and shining etc.
24. Knives, saws, cleavers and other equipments should not be used for any other purposes than food preparations.
25. Food storage should confirm to the highest standard of practice.
26. Food shelves life shall always be checked and maintained.

27. Staff with good health conditions shall only be permitted to work. Staff with skin diseases, running noses, and sneezes, sore throats and bowel trouble should not attend the work. Cuts bruises and sores should be covered with waterproof bandaging. Finger nails should be short and without varnish.
28. Smoking and spitting shall totally be prohibited.
29. HFZA's, EHS instructions, rules and regulations will be strictly followed.
30. Incase of any accident the authority shall immediately be reported. The facility shall be equipped with a first aid box.
31. Lighting The minimum intensity of lighting should be 540 lux.
32. Uniform : The uniforms and apparels of the employees should confirm the high standard of practice
33. Crockery cleaning shall confirm to the following practices:
34. Scraping and pre-rinsing
35. Cleaning in warm water with food grade detergents.
36. Sterilization or bacterial treatment.
37. Drying by use of drying racks and draining boards etc. Always clean dry clothes to be used for wiping and shining etc.
38. Knives, saws, cleavers and other equipments should not be used for any other purposes than food preparations.
39. Food storage should confirm to the highest standard of practice
40. Food shelves life shall always be checked and maintained
41. Staff with good health conditions shall only be permitted to work. Staff with skin diseases, running noses, and sneezes, sore throats and bowel trouble should not attend the work. Cuts bruises and sores should be covered with waterproof bandaging. Finger nails should be short and without varnish.
42. Smoking and spitting shall totally be prohibited.
43. HFZA's, EHS instructions, rules and regulations will be strictly followed.
44. Incase of any accident the authority shall immediately be reported. The facility shall be equipped with a first aid box.

FIRE EXTINGUISHER

Availability of portable extinguishers are considered essential to save properties and lives. There are some BASIC prerequisites for choosing using and maintain these portable extinguishers.

What are they? And how to optimize the use of these extinguishers are given in the followings :

1. **User Qualification**

- ◆ Should be matured person.
- ◆ Should be physically capable.
- ◆ Should know the operation instruction.
- ◆ Should be trained on correct usage methods.

2. **Equipment Specifications:**

- ◆ Should be approved by specialized agencies. (With the capacity, type and usage method written on IT)
- ◆ Valid for use.
- ◆ Suitable for the class and quantity. Of exposed combustibles.

3. **Place of Hanging the Extinguisher:**

It should be fixed vertically on the following places:

- ◆ Open place and protected against bangs.
- ◆ Near the exit door.
- ◆ Accessible.
- ◆ Far from the reach of children. (One meter clearance from the floor to the base of extinguisher)
- ◆ Far from heat and humidity sources. (Furnaces, sun, heat, water, supply etc).

4. **Advices and Instructions:**

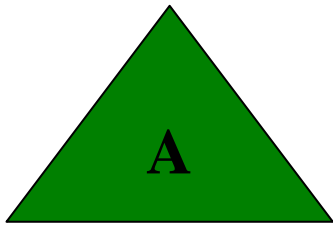
- ◆ Periodically check up the extinguisher.
- ◆ Follow manufacturer instructions for periodical maintenance.
- ◆ Effectively fight incipient fires.
- ◆ Evacuate the occupants and call civil defense.
- ◆ Your safety and the safety of others are utmost priority.
- ◆ It is necessary to consult civil defense for the choice of suitable extinguisher.

Protection is the Optimum Remedy

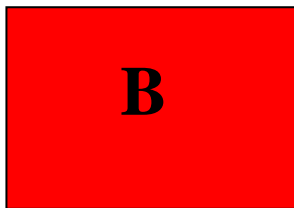
The manual fire extinguishers are considered a light means to extinguish fire in its first stage. They are one of the most significant means of protection for schools, companies, factories and particularly residential premises. Experiments have indicated that employment of such extinguishers was a reason preventing expansion and enlargement of fire without causing individuals to incur any damages in lives and property. Quite a number of fire incidents broke out and inflicted heavy damages on factories, companies and individuals because such small extinguishers were not available in the first instance.

Because of its active and significant factors , you are required to select suitable extinguisher and maintain, cater for and replace it, if necessary, for use, should need arise.

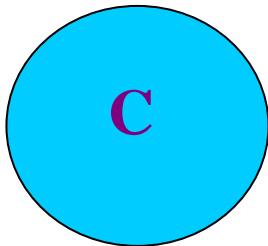
MARKS OR NUMBERS AFFIXED ON THE EXTINGUISHERS



Green triangle or the character.
A = wood, paper & clothes fires.



Red square or the character.
B = oils, petroleum & gases fires.



Blue circle or the character.
C = electrical appliances fires.



Red star or the character.
D = metals fires.

IMPORTANT INSTRUCTIONS



1. Do not use water or foam extinguishers in electricity fires, because water is a good conductor of electricity.
2. All extinguishers are not identically applied. Carefully read the instructions thereon affixed.
3. You must know how to put off the first instance of fire by the extinguisher.
4. You must know that the extinguisher's contents are exhausted 30 - 40 seconds after use thereof. This period is sufficient and suitable to extinguish the first instance of fire.

SHARJAH MUNICIPALITY RECOMMENDED HEALTH INSPECTION FACILITY CHECKLIST

All Food stuffs and related materials entering UAE territories requires a prior approval from the Health Section Laboratory of Sharjah Municipality.

1. PREMISES

1.1 Building Exterior

Outside Property and Building

- Building facility not located in close proximity to any environmental contaminates.
- Building exterior designed, constructed and maintained to prevent entry of contaminates and pests. e.g. windows and door proofed, insect killers, etc. (according to U.A.E regulations).

1.2 Building Interior

Design, Construction and Maintenance

- Floors, walls, ceilings constructed of non-toxic material that is durable, impervious, smooth, cleanable and suitable for the production condition in the area, Walls are light coloured (According to U.A.E regulations).
- Where appropriate, wall, floor and ceiling joints are sealed and angles are covered to prevent contamination and facilitate cleaning.
- Floor sufficient sloped to permit liquids to drain to trapped outlets.
- Ceilings overhead structures and stairs designed, constructed and maintained to prevent contamination.
- The traffic pattern of employees and equipment avoids cross contamination.
- An establishment provides physical and operational separation of operations where cross contamination may result.
- Windows are constructed to alternative materials or adequately protected, where there is a likelihood or breakage of glass windows that could result in the contamination of food.

1.3 Lighting

- Lighting is appropriate such that the intended production or inspection activity can be effectively conducted.
- Light bulbs and fixtures located in areas where there is exposed food or packaging materials, are of a safety type or are protected to prevent contamination of food in case of breakage.

1.4 Ventilation

- Ventilation provides sufficient air exchange to prevent unacceptable accumulation of steam condensation or dust to remove contaminated air.
- Ventilation opening are equipped with close fitting screens or filters to prevent the intake of contaminated air. Filters are cleaned or replaced as appropriate.

1.5 Waste Disposal

- Drainage and sewage systems are equipped with appropriate traps and vents.

- Sewage lines do not pass directly over or through production area unless they are controlled to prevent contamination.
- Adequate facilities are provided for storage of waste prior to removal from establishment. The facilities are designed to prevent contamination.
- Waste containers used are clearly identified, leak proof, and foot controlled to prevent contamination.
- Waste is emptied regularly and containers are cleaned and sanitized when necessary to minimize the risk of contamination.
- Where applicable, sewage treatment unit is located away from processing area to prevent contamination.

2. **SANITARY FACILITIES**

2.1 **Employee Facilities**

- Washrooms have hot and cold potable running water, soap dispenser, sanitary hand drying supplies and a suitable waste bin (according to U.A.E regulation).
- Washrooms, lunch rooms and change rooms are equipped and maintained properly to prevent contamination.
- Hand washing signs are posted in appropriate areas of the premises.
- Processing area are provided with adequate numbers (according to the number of workers) of fully equipped hand washing stations.

2.2 **Equipment Cleaning and Sanitizing Facilities**

- The Manufacturer has complete written cleaning program for equipment and facilities.
- Facilities are constructed to corrosion resistant materials capable of being easily cleaned and provided with potable water at temperatures appropriate for cleaning chemicals used.

2.3 **Water & Ice**

- Water meets the requirements of U.A.E standards (potable Water Quality).
- Water and ice quality (potability) must be tasted frequently and records must be kept.
- Design of hoses, taps or other sources of possible contamination, prevents back-flow or back pump.
- The volume, temperature and pressure of potable water are adequate for all production and clean-up operations.
- Pipes and fitting should be made of material, which will prevent leaking of any contaminants.
- Ice used as ingredient or in direct contact with food made from potable water and is protected from contamination.

2.4 **Steam**

- The steam supply is generated from Potable water and is tested for adequacy (records are available) to meet operational requirements.

3. **EQUIPMENT**

3.1 **General Equipment**

- Equipment is designed, constructed and maintained to meet the requirement of the process and to prevent the contamination of the product during operations.
- Equipment is designed, constructed and installed to be accessible for cleaning, sanitizing, maintenance and inspection.
- Where applicable, equipment is exhausted to outside to prevent excessive condensation.

- Equipment is connected to drainage system to permit proper drainage and prevent contamination.
- Where necessary, equipment used in processing and cleaning operations is to be colour coded to prevent cross contamination.

3.2 Food Contact Surfaces

- Food contact surfaces of equipment and utensils are smooth, non- corrosive, non-absorbent, free from cracks and crevices and can withstand repeated cleaning and sanitation.
- All food contact surfaces are made of food grade materials according to the regulation in force the U.A.E.
- Equipment used for different activities is colour coded to prevent cross contamination.

3.3 Equipment Maintenance and Calibration .

- The manufacture has an effective written maintenance and calibration program to ensure that equipment that may impact on food safety functions as intended.
- Maintenance and calibration of equipment is performed by appropriately .' trained personnel.
- Maintenance records for critical equipment includes, identification of equipment being maintained, date, activity, person and reason for activity.
- Calibration records of critical equipments include identification of equipment, date, person responsible, calibration result, next calibration due date.
- Temperature of all refrigeration and freezing units are monitored and records are kept.

4. PERSONNEL

4.1 Training

General Food Hygiene Training

- The manufacturer has a complete written training program for employees.
- Appropriate training on basic food hygiene and food handling is provided to all food handlers at the beginning of their employment and records are available.
- A reinforcement course of original Food Hygiene training is given to staff at regular and frequent intervals.
- Additional training is provided as necessary to ensure current knowledge of equipment and process technology.
- All workers are appropriately trained to commensurate with their working activities.

4.2 Hygiene and Health Requirements

- All persons wash their hands upon entering food handling areas, before starting work, after handling contaminated materials, after breaks and after using toilet facilities.
- Employees maintaining proper personnel hygiene appropriate to the operation, which he/she is engaged in.
- Internal check up of workers personnel hygiene is conducted regularly and records are maintained.
- Employee prohibited of exhibiting unhygienic practices that could result in contamination of food.
- Personal belonging and street clothing are kept and stored away from food handling area prevent contamination.
- The traffic pattern of employees prevents cross contamination of the product.
- Protective clothing, hair covering, foot ware and/or gloves, appropriate to the operation that the employee is engaged in, are worn and maintained in sanitary manner.
- Access the facilities is controlled to prevent any possible contamination.

4.3 Communicable Diseases and Injuries

- The manufacturer has enforces policy to:

1. Run regular medical checkups of food handlers according to U.A.E regulations. All workers have valid health cards.
2. Prevent personnel known to be suffering from or is a known carrier of a transmissible diseases through food from working in food handling area.
3. Prevent personnel with open wounds cuts from handing food unless a secure covering protects it.
4. Personnel returning from vacation overseas examined before resuming work.
5. Management runs a regular check up of workers personal hygiene and health conditions and records are kept.
6. Keep records of accidents, diseases and injuries in an accessible file for future reference.

5. PEST CONTROL

- There is an effective pest control program for premises.
- Record for pest control includes:
 1. Valid pest control contract with company that is approved by the concerned Authority.
 2. Records of pest control activities. e.g pesticides used method, and location of application, date and person responsible.

6. TRANSPORTATION AND STORAGE

- The transportation facilities are suitable for the transportation of food. They are temperature controlled and constructed and designed according to the regulation in force in the U.A.E (suitable food contact).
- The transportation facilities are inspected on receipt and prior to loading to ensure they are free from contamination and suitable for transportation of food.
- A cleaning and sanitizing program of the transportation of vehicle must be in place and records must be kept.
- Incoming materials (food, non-food, and packaging) are received in an area separate from processing area.

6.1 Temperature Control :

- Food Items requiring refrigerating are transported at 5°C or less and they are appropriately monitored. Frozen Ingredients are transported at ' temperature that do not permit thawing (10°C).
- Finished products are transported in a manner to prevent microbiological, physical and chemical contamination.

6.2 Storage

- Food items requiring refrigeration are stored in 5°C or less and are appropriately monitored (records). Frozen items are stored at the temperature that do not permit thawing (-10°C).
- Food items and packing materials are handled stored and where appropriately handled in a manner to prevent damage, contamination and deterioration.
- 6.3 Chemicals Receiving and Storage
- Chemicals are received in a dry and adequately ventilated area.
- Chemicals are stored in a separate designated area such that there is no possibility of cross contamination of food or food contact surfaces.
- Chemicals are stored in a correctly labeled containers.
- Chemicals are handled only by the trained personnel.

6.4 Finished Product Storage

- Finished product should be stored and where appropriate rotated in a manner that prevents contamination and possible deterioration.
- Returned defective, expired or suspected product is clearly identified and isolated in a designated area for appropriate disposition.

7. **RECALL SYSTEM**

7.1 Procedure

- The written procedures includes :
 1. The person or persons responsible e.g. recall coordinator(s).
 2. The roles and responsibilities for coordination and implementation of a recall.
 3. Methods to identify, locate and control recalled product.
 4. A requirement to investigate other products that maybe affected by the hazard and that should be included in the recall.
- Immediate notification of the head of the Food Control Section where the manufacturer is located. The notification should include the following:
 1. Amount of product produced in inventory, and distributed.
 2. Name, size, code, or lot of numbers of food recalled.
 3. Area of distribution of product, e.g. National (U.A.E) or International.
 4. Reason for recall.

7.2 Product Code Identification (where mandatory)

- Each package food had permanent, legible, code marks or lot numbers on the packages. .
- The code identifies the establishment, the shift, the day, month and year in which food is produced.
- Code marks used and the exact meaning of the code available.
- Where used, case codes are liable and represent the container code within.

7.3 Recall Capability

- The manufacturer is capable of producing accurate information on timely basis to verify that all affected product can rapidly identified and removed from market-place.
- The manufacturer can demonstrate this through the following:
 1. Records of Customers' names, address and telephone numbers are available for the lot tested.
 2. Records of production, inventory and distribution by lot are available for the lot tasted.
 3. Periodic testing to verify the capability of the procedure to rapidly identify and control a code lot of potentiality affected product and reconcile.
 4. Amount of the product produced, in inventory and in distribution of any deficiencies in the recall procedure.

7.3 Distribution Records

- Distribution records contains sufficient information to permit traceability to a particular code or lot number.
- The following minimum information is required for the distribution records:
 1. Product identification and size.
 2. Lot number or Code.
 3. Quantity.
 4. Customer's names, address, and phone numbers to the initial level of product distribution.