



Date :

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Waste Management Plant

1-Collection :

The first step of our waste management plant will be the collection of the waste from the jobsite (AGC/AIOss/AIHuteily/Weatherford/Two Riggers and Existing Army Camps inside the berm).our laborers' very good experience s in waste collection in different types and housekeeping in the main roads to collect scattering of light materials once a week.

2- Transportation :

Two trucks (with drivers) having a total of about 10 or more tones will be proved on for collection the waste in the site and other after full accumulation waste in the waste accumulation area belong Alsulimany in the site. And use as the tools for transportation and dispose the waste from the jobsite to waste storage yard for segregation , and for recycling to our transfer station which is located before Ataq far from the site about 65km.The loading and covering the wastes will be assists by other two labors. Our plan for the transportation of the Hazard liquid and solid wastes will be transported through proper vacuum truck ,closes drums plastic or metals with very good storage capacity.

3- Segregation :

The stored wastes will be stored in to recyclable and non recyclable materials . Non-Recyclable materials will be disposed through incineration . small incinerator will be built in the waste storage area temporary we will using OMV burn pit .Recyclable materials will be stored to its proper classes .After the sorting and segregation process of the wastes, some of the recyclable like plastic will be shredded to small pieces and compacted to reduce its volume and warped with steel wire to help retain their rectangular shape during handling In a bale storage. Six to eight laborers will be ready to work in the segregation and disposal process.

4- Recycling:

The ultimate destination of recycling and treated materials will be consists of manufactures and exporters they are interesting for buying , exporting , treated and reuse of such type of materials. Therefore, our company has been signed number of buying agreement with some of interesting manufactures and exporters for selling them the recycled materials.

Plastic :

* Bottles shred → put it in bags → send to factory in Taiz



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Accepted (PVC, PET)

(Polyethilen,polyvinalchloride,polyethelentetraphethalat)




Washing it than melted

Than make the pipe PVC for sewage and other things

Metals:

Metals there is two factories in Aden And one in the Abieen city and in Almkalla city they take all kind of the scrap metals ,oil filter after compressed ,air filter after burn it , ruminant of welding buckets, rebar ,sheet metal scrap from air condition and bucket still which not contains not much quantities of paint inside it better if it is empty and dry.

Waste oil:

Waste oil the International lube LLC has compact system to segregated the between oil, hydraulic and water and they have Lab. For the final products of recycling
Storage tank  mixed with special chemicals



Filtered tank for isolation the oil, water, hydrolic



Filtration membranes



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They filtered and resell it as motor oil and with waste hydrocarbons for industrial boilers and the manager Mr/javed sheikh they resold it as lubricant. Other contractor recycling AL/NAKEE mixed with mazot.

List of the buying agreements with the following manufactures and exporters are :

- (1) Waste Glasses Recycling –Aden **(closed temporary)**

Aden –Taiz St. TEL/02-204050

- (2) Abo Abdullah – Waste Batters Recycling –Aden)

TEL/ 02-301646

777301646

Alsheq Othman –Albasateen Area

- (3) AIDokam –Waste Plastic Recycling send it to chine's

Ahmed Abdol Almeesbahy

TEL/ 734153117

Alsheq Othman-- - Albasateen Area

- (4)Centre Abdoraboo Alhomikany- Aden (10) - collection the Waste Tiers

TEL/71127053

Al-Areesh- Abian beach

- (5) Yemen Company for plastic -Taiz

Mr/ Abdo alkoshafa

Manager of Planning

TEL/ 71119399

- (6) Company of International Lube Limited –for buying used –oil /Aden

Freezone aden

internationallube@yemen.net.ye



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phone: 00967 2 265491

(7) Abraheem Hassan , plastic and metal scrap

Fowah-almasakeen , back Been Doweel gasoline station

Tel: 733594450

(8) Al-hussan for Iron

Algowayzy St. ,Gowlat Mashaa

Tel: 05-381706

5- Waste accumulation area :

Every contractors AGC/AIOss/AlHutheily/Weatherford/Two Rigers and Existing Army Camps inside the berm will provide by three garbage bins and one drum in different color one for plastic second for food cartons and the last for the metal cans and drum for the glass .weekly bins will b cleaned washing by detergent and soap the area should prepared by every contractor of his waste accumulation area (WAA) we will proved them one plastic drums barred in the ground to collected the waste water after washing the bines finally, sucked it by our vacuum truck to sewage treatment plant .

6- Sewage water:

As we mention we have experience in built the sewage treatment plant ,we will built small one in Aluqlah area the capacity will arrive to maximum 200 m3/day it consist of three tanks .The sewage dumping by vacuum truck to the first tank Aeration tank for biological treatment by producing bubbles by air compressor or using floating pumps . started to degradation the pollution to reduce the BOD and COD, than settling tank which consists two sucking pumps one transfer the active sludge back to aeration tank and the others to transfer the old sludge to the 3d tank for hard sludge the treated water will transfer by gravity to near yard through PVC pipe barred underground about 10-15 cm.

The final product of the thick sludge by vacuum truck latter in isolated secondary containment:

* Mix with contaminated soil with and hydrocarbons for 6months

* Dry in drain pit than burn it

Operation details will send later



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You will find attachment the drawing of the plant

Every three months we send to OMV HSE .lab . analysis for efficiency of our plant treated follow the Yemen standard

7- Chemical Risk Assessment:

A chemical risk assessment will be made on the basis of the MSDS. Referring to the risk assessment displayed inside the MSDS, all the preventive and mitigation measures will be taken in order to avoid exposure to hazard.

8- MSDS:

MSDS shall be supplied with all hazardous materials. The MSDS shall follow the following rules as practicable as possible:

- Be provided by the manufacturer of the chemical (who is responsible for the risk assessment)
- Contain the eco-toxicological data of the product
- Not be older than 4 years
- (not compulsory) provided in addition to the English one , in the language of the first users (mainly Arabic).

9- Storage waste chemicals:

The condition of storage will be made as described in MSDS regarding condition of storage, incompatibility with other chemicals and length of storage.

All the MSDS of the chemical stored in one place waste storage yard will be in the possession in the man in charge. He and all his employee will be trained upon all these MSDS and their requirements.

Hazardous materials shall be stored in designated areas storage areas shall be:-

- ◆ Clearly marked to indicate the presence of hazardous materials and the associated environmental, health or safety hazards.
- ◆ Clearly marked to show the PPE requirements upon entry into the store.
- ◆ Impervious to spilled materials and have no open drainage channels.
- ◆ Storage areas for liquid hazardous materials shall be provided with secondary containment equivalent to 110% capacity of the largest stored container.
- ◆ Storage of hazardous materials in underground storage tanks shall not be permitted.
- ◆ Gas cylinders will be stored on a stable and prepared base with a shelter. The cylinders will be further secured by a chain link fence.



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- ◆ Emergency facility will be provided as required by the MSDS (Eye Wash, Emergency shower,...)
- ◆ Hazardous materials shall be segregated according to their physical and chemical properties.
- ◆ Hazardous material containers shall be correctly labeled, labels shall provide information on:-
 - The substance and the nature of the environmental, health and safety hazards.
 - PPE requirements for handling.
 - First aid instructions.

10- Addition of Biological Sludge :

The contaminated soil will have some heavy oil fraction which may not be volatilized fast. To improve the action of biotic factors on contaminated soil it is proposed that soil will be mixed with biological sludge generated from sewage treatment plant.

The sludge will be mixed in 3:1 (Soil to sludge) ratio. Sludge will be collected from sludge drying bed used for sludge disposal. This will help improve action of natural microbes present, as sludge will provide nutrients and organic matter, essential for microbes. Sludge from sewage treatment plant will also help in enriching the natural microbial population. The mixed soil will be turned over on regular basis.

11- Training:

Personnel will be provided with specific training to carry out activities in environmentally safe manner without polluting it.

- All persons involved in the soil ,chemical waste handling activity at the facility shall be trained in basic operations.
- Warning signs on the site are to be displayed.
- We have all programs for training for waste collection prepared by Alsulimani Bros.&CO .

Written instruction in Arabic and English will be provided to the handling crew.

12- Spill Producing Activities/Conditions:

The following activities and conditions associated with chemical handling and storage may lead to spills (List not limited to):

- Refueling;
- Improper packaging;
- Rupture of stored containers;
- Improper handling of hazardous materials during loading/ unloading;



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- Accidents leading to spills
- Leaks during transportation;
- Containers without lid/cover
- Poor housekeeping & improper labeling

Poor maintenance of equipments, vehicles and machinery

13- Assessment of Potential Sources of Spills :

Our storage of chemicals and fuels as well as use of equipments and vehicle for the activities have the potential to become sources of spills on site.

For the Alsulimani Bros. & CO activities the following types of chemicals may be employed and may be involve in spills.

- Diesel and other fuels;
- Lubricants, grease and hydraulic oils and fluids;
- Solvents;
- Chemicals for civil works construction
- Paints & thinners;
- Water treatment chemicals;
- Hazardous waste;
- Contaminated water;

An inventory of major chemicals to be stored at site and the place of use shall be maintained The material characterization will include the following information:

- Name of the Chemical;
- Maximum quantity of chemical to be stored at any particular time;
- Location of the storage
- Hazardous characteristics of the chemical

Consequences due to spills (injury, irritation, environmental impacts).

Mr.Fareed Al-Sulimani

Chairman of the Board

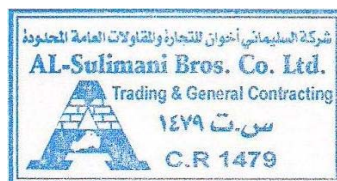
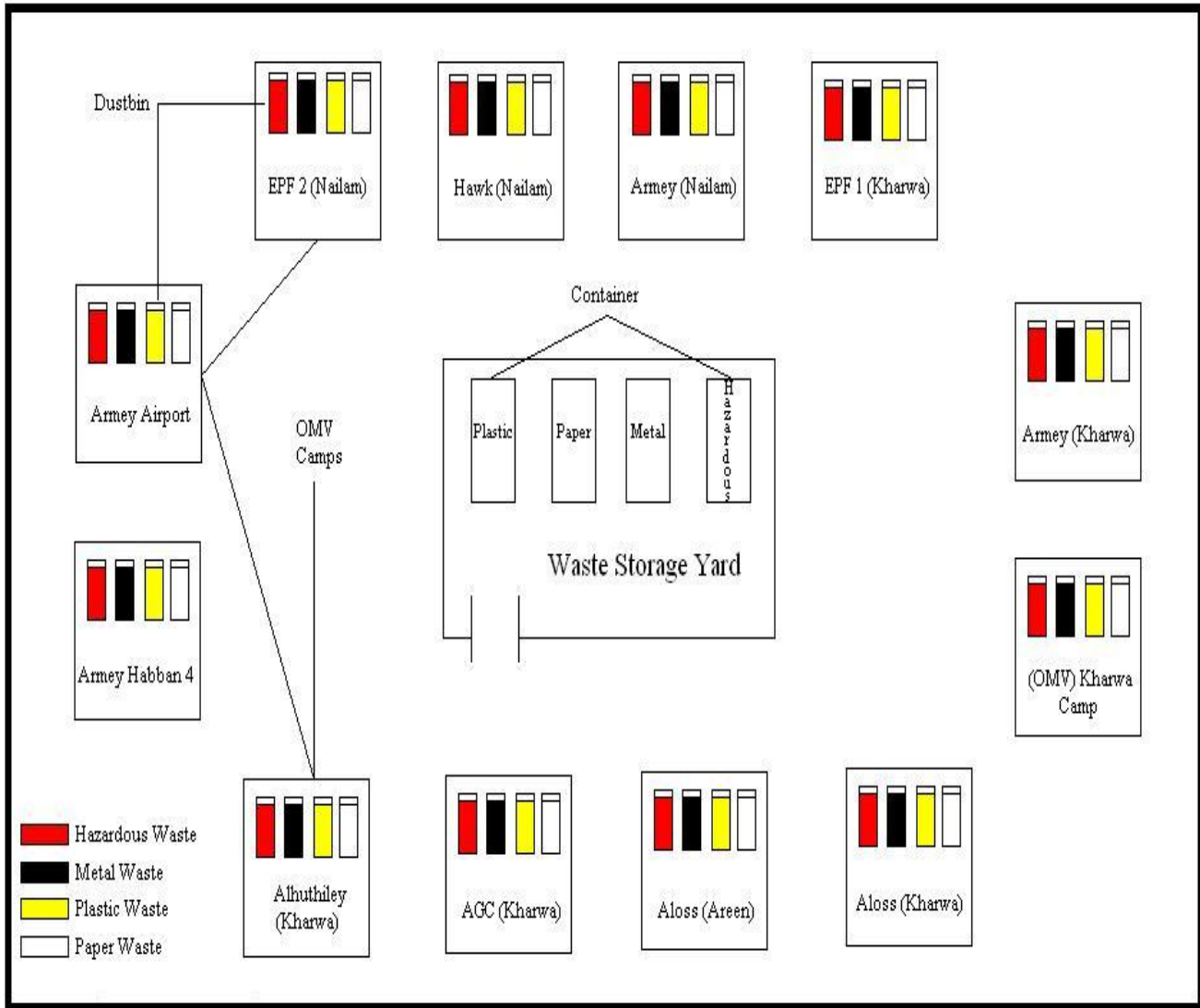


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| No put | Significant Environmental Aspect | Objective | Target | milestones | out |
|----------------------------------|--------------------------------------|---|---|--|---|
| 1. Sewage Treatment Plant | | | | | |
| 1.1 | Discharge of treated sewage effluent | Prevent pollution of surface waters and compliance with legislation | Comply with discharge limits: | Issue Work instructions/ operating procedures to plant operators | Documents issued. |
| | | | | Environmental sampling & monitoring | No. of non-compliance with discharge limits |
| 1.2 | Sludge disposal | Prevent pollution of surface and groundwater | Comply with waste management procedures | Ensure all operators are trained on sludge disposal procedure | Training records |

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Balhaf branch \ tel : 05 211902



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شركة السليمانى أخوان
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المركز الرئيسى / شبوة - عتق - ت 05-204530 - فاكس : 05-204531
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| | | | | | |
|------------|-------------------------------------|--|----------------------------------|---|------------------------------|
| 1.3 | Overflow of untreated sewage | Prevent pollution of water resources | No discharge of untreated sewage | Regular maintenance according to schedule | Maintenance logs |
| | | | | | No. pollution incidents |
| 2.1 | Vehicle wash effluent | Prevention of pollution/ compliance with legislation | Comply with discharge limits: | Provision of designated wash bay | Designated wash bay provided |
| | | | | Installation and maintenance of oil traps | Maintenance logs |
| | | | | Training for staff on vehicle washing procedure | Training records |

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 فرع حضرموت / المكلا - تلفون : ٥٢١٤١١٧ - فاكس : ٥٢١٤١١٨
 فرع بالهاف / تلفاكس ٥٢١١٩٠٢

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| | | | | | |
|------------|--|-------------------------|---|---|-------------------------------|
| 2.2 | Storage of hazardous materials (including hazardous wastes) | Prevention of pollution | No loss of containment of hazardous materials | Compile list of hazardous materials including MSDS | Hazardous materials inventory |
| | | | | Ensure provision of designated storage facilities for hazardous materials | Feedback Report |
| | | | | Environmental inspections to monitor compliance | Inspection report |



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2. Operation Of Waste Incineration Plant

| | | | | | |
|------------|---|---------------------------------------|---|--|---|
| <u>7.1</u> | Disposal of incineration ash | Prevention of pollution | Comply with waste management procedures | Train operators on waste management procedures Alsulimany Bros.& CO already have been program for training for waste management | Training records |
| 7.2 | Storage and use of diesel | Prevention of pollution | No loss of containment from storage tanks | Regular maintenance according to schedule | Maintenance logs |
| | | | | Environmental inspections to monitor compliance | Inspection reports |
| <u>7.3</u> | Incineration emissions | Prevention of air pollution/ nuisance | Comply with operational procedure | Emissions monitoring | Monitoring logs/ No. complaints |
| <u>7.4</u> | Backlog of waste resulting from plant shutdown | Prevention of pollution | Comply with waste management procedures | Regular maintenance according to schedule | Maintenance logs/ No. pollution incidents |

3. Operation And Maintenance Of Office Block

| | | | | | |
|------------|--|--|---|------------------------|------------------------------|
| <u>8.1</u> | Disposal of office/ general waste | Improve recyclability of waste materials sent to dump site | Segregation of waste streams into plastics, cans and metals | Provide recycling bins | Recycling points established |
|------------|--|--|---|------------------------|------------------------------|

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| | | | | | |
|--|--|--|--|--|--|
| | | | | Provide training to staff on waste recycling procedures | Training records |
| | | | | Promote recycling schemes | No. tool box talks given , emails sent etc |
| | | | | Monitoring and recording of frequency of mixed or un-segregated waste streams. | No. recorded rejects at waste dump |

4. Operation And Maintenance Of Camp

| | | | | | |
|------------|---|---|---|--|------------------------------------|
| 9.1 | Disposal of domestic waste | Encourage recycling of plastics and cans/metals | Segregation of waste streams into plastics, cans and metals | Provide recycling bins | Recycling points established |
| | | | | Provide training to staff on waste recycling procedures | Training records |
| | | | | Monitoring and recording of frequency of mixed or un-segregated waste streams. | No. recorded rejects at waste dump |
| 9.2 | Spillage of diesel during refuelling and transfer operations | Prevent pollution of soil/ groundwater | No major releases from refuelling and transfer operations | Ensure adequate spill response equipment/ kits are available on-site. | Inventory of spill kits maintained |

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|------------|---|-------------------------|---|--|--------------------|
| | | | | Training for staff on refuelling and spill response procedures | Training records |
| | | | | Environmental inspections to monitor compliance | Inspection reports |
| 9.3 | Bulk storage of diesel | Prevention of pollution | No loss of containment | Training for staff on emergency response procedures | Training records |
| | | | | Inspection and repair of storage systems according to maintenance schedule | Maintenance logs |
| | | | | Environmental inspection to ensure compliance | Inspection report |
| 9.4 | Disposal of oily sludge from bund dewatering | Prevention of pollution | Comply with waste management procedures | Training for staff on waste management procedures | Training records |

5. Warehouse

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|-------------|---|-------------------------|---|--|------------------------------------|
| 10.1 | Hazardous materials storage (oils/chemicals) | Prevention of pollution | No loss of containment from storage systems | Compile list of all chemicals on-site including MSDS | Inventory of chemicals |
| | | | | Review hazardous materials containment measures and availability of spill kits | Review completed and report issued |
| | | | | | Implement rec'mmdation s of report |
| | | | | Training for staff on emergency response procedures | Training records |
| | | | | Inspection and repair of storage systems according to maintenance schedule | Maintenance logs |
| | | | | Environmental inspection to ensure compliance | Inspection report |
| 10.2 | Spillage of hazardous materials during transfer operations | Prevention of pollution | Containment of spillage | Ensure adequate spill response equipment/ kits available on-site | Spill kits inventory |
| | | | | Train staff spill response procedures | Training records |

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|-------------|---|-------------------------|---|--|------------------|
| 10.3 | Disposal of office and packaging waste | Prevention of pollution | Comply with waste management procedures | Train all staff on waste management procedures | Training records |
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6. Fuel Depot

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|-------------|---|--|---|---|------------------------------------|
| 11.1 | Spillage/ leakage of diesel during refuelling and transfer operations | Prevent pollution of soil/ groundwater | No major releases from refuelling and transfer operations | Ensure adequate spill response equipment/ kits are available on-site. | Inventory of spill kits maintained |
| | | | | Training for staff on refuelling and spill response procedures | Training records |
| | | | | Regular maintenance of dispensing station equipment/ loading points according to schedule | Maintenance logs |
| | | | | Environmental inspections to monitor compliance | Inspection reports |
| 11.2 | Bulk storage of diesel | Prevention of pollution | No loss of containment from storage tanks | Regular maintenance of storage and containment systems according to schedule | Maintenance logs |
| 11.3 | Disposal of oily sludge generated from bund de-watering | Prevention of pollution | Comply with waste management procedures | Training for staff on waste management procedures | Training records |

7. Clinic

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فروع بالحباف / تلفاكس ٥٢١١٩٠٢

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| | | | | | |
|-------------------------------|------------------------------------|-----------------------------------|---|--|---|
| <u>12.1</u> | Disposal of clinical wastes | Prevention of pollution | Comply with waste management procedures | Train all staff on waste management procedures must be incinerated in Alsulimani incinerator. | Training records |
| 8. Dumpsite Operations | | | | | |
| <u>13.1</u> | Recycling of waste | Conservation of natural resources | All bottles, cans, plastic and metal wastes are segregated and recycled if practicable. | Sorting of wastes into various types in accordance with waste management procedure at the begging we will use OMV segregation area . | No. complaints from waste recycling contractors |
| | | | | Waste tracking and inspection of waste recycling facilities of approved waste contractors and Yemen environmental Law | Inspection Reports |



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SAFE WORK PROCEDURE VEHICLE BATTERY FLUID LEVEL AND CONDITION CHECKS

REQUIRED AND/OR RECOMMENDED

PERSONAL PROTECTIVE EQUIPMENT: Rubber gloves, safety glasses, torch.

| SEQUENCE OF BASIC JOB STEPS | POTENTIAL ACCIDENTS OR HAZARDS | RECOMMENDED SAFE JOB PROCEDURES |
|---|--|--|
| 1. Lift bonnet of vehicle | Crush | <u>No Smoking</u> - <u>Switch off engine and ensure hand brake is engaged.</u> If bonnet has a support arm, place the support in the correct position. <u>Ensure that the engine is cool.</u> |
| 2. Fit gloves and safety glasses on | Injury | Personal protective equipment must be worn |
| 3. Remove all battery vent caps. | Burn, chemical burn, shock, explosion, chemical vapour inhalation. | Make sure the area is well ventilated, use rubber gloves to remove battery vent caps |
| 4. Visually check fluid levels. | Burn, chemical burn, shock, explosion, chemical vapour inhalation. | Safety glasses must be worn. Use only a battery operated torch - <u>NO NAKED FLAMES.</u> Check if battery fluid level are full (but not over full) |
| 5. Replace all battery vent caps. | Burn, chemical burn, shock, explosion, chemical vapour inhalation. | Check caps are on tight, wash any acid spills away with copious quantities of hot water or bi carbonate soda and water. |
| 6. Remove plastic battery terminal covers. | Burn, shock, or explosion | <u>DO NOT</u> use anything metal to remove covers. |
| 7. Visually check condition of terminals | Acid burns | Don't touch with the bare hands. Clean battery terminals with boiling water, or a wire brush |
| 8. Replace battery terminal covers | Burn, shock, or explosion | Ensure covers are replaced carefully and are secure. |
| 9. Close vehicle bonnet | Crush, damage, motor vehicle accident | Visually check the engine bay so that no tools or materials are left in the engine bay. Keep hands clear and lower the bonnet gently until spring mechanism locks the bonnet down. Manually check that the bonnet is secure. |
| 10. Report any maintenance required to your supervisor. | Major equipment failure | Ensure maintenance is reported, documented and followed up. |

Mr. Fareed Al-Sulimani
Chairman of the Board

