



## SOP for Final Disposal of Solid Hazardous waste in the Engineered cells in Al Dhafra landfill

Hazardous Facilities Section, Projects & Facilities Department

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## 1. Introduction

Tadweer (The Center of Waste Management -Abu Dhabi) constructed three engineered hazardous solid waste cells and three hazardous liquid waste cells in Al Dhafra landfill area.

These cells came as a permanent and quick solution for the tremendous hazardous waste being generated in the Emirate of Abu Dhabi as more sustainable treatment facilities are planned to be constructed in the Emirate very soon.

This SOP has been developed while taking into consideration Law No (17) for the year 2008 regarding establishing the Center of Waste Management, law No (21) for the year 2005 on waste management in the Emirate of Abu Dhabi, Decree No. (41) of 2017 issued by the Executive Council of the Emirate of Abu Dhabi on tariff charges for the cost of hazardous wastes disposal, as well as in line with Abu Dhabi vision 2030, international standards and best applicable practices in waste management field.

Tadweer (The Center of Waste Management -Abu Dhabi) is starting the operation of Three (3) new-engineered cells dedicated for **Solid Hazardous waste** located at Al Dhafra Landfill.

## 2. General Responsibilities of the Environmental Service Providers

1. Environmental Service Provider (ESP) (Waste transporter) shall submit to Tadweer a “landfill access permit application” on behalf of the Waste Producer for the disposal of specific solid Hazardous Waste as per existing Tadweer approved Standard Operating Procedure for Licensing of Hazardous waste Service providers in the Emirate of Abu Dhabi No.CWM.SOP.PR/01.
2. All specific solid Hazardous Waste shall be appropriately packaged, marked, labeled and sealed in jumbo bags and in line with SOP No. CWM.SOP.PR/01.
3. ESP has to ensure that all work shall be carried out by competent personnel, certified as per ADOT-57 and ADOT-58.
4. Any packaging that is damaged must be replaced or repaired prior to disposal.
5. Non-returnable pallets shall be arranged if requested by Tadweer.
6. Waste Producer and ESP shall comply with AD EHSMS and Tadweer EHS requirements for PPE.

### 3. Legal Framework

Listed below are the main legislative requirements related to the Hazardous Waste within the Emirate of Abu Dhabi . All the requirements listed within these documents shall be adhered to, however compliance with this document and those referenced within, shall ensure compliance with the requirements stated within the legal standards listed below:

- 1 Federal Cabinet Resolution No. (39) of 2006 on Banning the Import and Production of Asbestos;
- 2 Federal Law No (24) for the year 1999 on the Protection and the Development of the Environment;
- 3 Federal Law No. (28) of 2001 Regarding the Establishment of the emirates authority for standards and Meteorology;
- 4 Federal Regulation for Handling Hazardous Materials, Hazardous Wastes and Medical Wastes, issued by Cabinet Decree No. 37 of 2001;
- 5 Law No (21) for the year 2005 on Waste Management in the Emirate of Abu Dhabi;
- 6 Decree No 17 of 2008 Establishing the Centre of Waste Management – Abu Dhabi;
- 7 Decree 2G24 of 2009 for Tariff System of the Waste in the Emirates of Abu Dhabi;
- 8 Decree No 42 of 2009 Requirements of the Abu Dhabi Emirate Environment, Health and Safety Management System (EHSMS) Regulatory Framework;
- 9 Centre of Waste Management Board of Directors Decree No 1/2010 for Waste Tracking System;
- 10 Basel Convention Protocol for Liability and Compensation on the Control of Trans boundary Movement of Hazardous Wastes and their Disposal (Texts and Annexes);
- 11 Decree No. (41) of 2017 issued by the Executive Council of the Emirate of Abu Dhabi on tariff charges for the cost of hazardous wastes disposal.
- 12 ADOT-57 and ADOT-58 Abu Dhabi Quality & Conformity Council – Hazardous waste Handler and Operator Conformity Scheme.

## 4. Tadweer Technical Guidelines & Standard Operating Procedures

- CWM.TG/1: Requirements and Procedures for the Disposal of Hazardous Waste.
- CWM. TG/6: Requirements and Procedures for Registration of Waste Skips and Container.
- CWM. TG/8: Management of Asbestos / Asbestos Containing Material (ACM) in the Emirate of Abu Dhabi.
- CWM. TG/10: Inspection Management.
- CWM. TG/11: Licensing Requirements for Transportation, Treatment and Recycling Facility.
- CWM.SOP.PR/01 Standard Operating Procedure for Licensing of Hazardous waste Service providers in the Emirate of Abu Dhabi
- CWM.SOP.PR/03 Standard Operating Procedure for Licensing of Waste Electrical and Electronic Equipment (WEEE) in the Emirate of Abu Dhabi.
- CWM.SOP.PR/04 Standard Operating Procedure for Licensing of Used Battery service providers in the Emirate of Abu Dhabi.

## 5. Scope and requirements of solid hazardous waste disposal

### 5.1 Administrative aspects:

1. Applying for the disposal of hazardous solid wastes shall be submitted under "Application for landfill accessing permit" via Tadweer's E-system or by visiting one of Tadweer's customer service centers located throughout the Emirate of Abu Dhabi.
2. The request for disposal of hazardous solid wastes shall be submitted by the Environmental Service Provider licensed to handle hazardous waste.
3. Lab test report as per Directive 1999/31/EC, from an approved laboratory should be submitted along with the application. (Please refer to Annex 1 of this SOP)
4. Applications will be received and processed during the last five (5) working days of each month.
5. The percentage of waste allocated for each waste producer will be equally determined from the total amount of hazardous waste received from the incoming applications provided that the received applications meet Tadweer's requirements.

### 5.2 Financial aspects:

1. Fees are charged against the cost of disposal of hazardous solid waste in the engineered cells at Al-Dhafra Landfill as per Decree No. (41) of 2017 issued by the Executive Council of the Emirate of Abu Dhabi :

- (220) AED per ton of solid hazardous waste.

2. Fees charges will be payable as a gate fee for a minimum charge of 1 ton, in case less than 1 ton, and in case of more than one ton it will be approximated to the higher tonnage.
3. Cost fees of hazardous solid waste disposal shall be levied through Aber system at Al Dhafra Landfill gates.

The ESP will be charged based on per ton of specific solid Hazardous Waste as specified in the following table:

S/N	Fee Type	Fee (AED)
1	Application Fee	100 AED
2	Permit Approval Fee	300 AED
3	Specific Solid Hazardous Waste Disposal	220 AED / Ton

### 5.3 Technical aspects:

- 1- Applications for the disposal of hazardous waste in the engineered cells shall be reviewed and verified by Tadweer’s technical team. Approval and rejection of the applications is based on review of technical documents submitted as part of the application.
- 2- A specialized laboratory has been established at Al-Dhafra Landfill to take random samples from the received waste, which will be checked to ensure compatibility with the hazardous waste acceptance criteria prior to disposal. Accordingly, all entities shall ensure compatibility of waste to be disposed at Al-Dhafra landfill with the submitted applications, in order to avoid rejection to receive the hazardous waste, or any administrative, legal or financial actions against the establishment.
- 3- The hazardous solid waste shall be packed and labeled (minimum: type of waste, toxicity class, producer, transporter, date and time), in jumbo bags, and shall be transported and downloaded in the cell. Considering only Solid Hazardous waste, ESP should provide a suitable truck / trailer, closed from all sides, with crane. In case truck/trailer don’t have any auxiliary lifting device, ESP should provide a suitable crane along with the truck /trailer, in order to unload the jumbo bags into the designated solid hazardous waste cells.

The following Table clarifies acceptable/Unacceptable vehicles for transportation and discharging of solid hazardous waste at Al Dhafra landfill:

Acceptable Vehicles	Unacceptable Vehicles
<ul style="list-style-type: none"> <li>• Container Skeletal Carrier (open in the top to allow lifting the jumbo bags by crane)</li> </ul>	<ul style="list-style-type: none"> <li>• Timber trailers (loggers)</li> </ul>
<ul style="list-style-type: none"> <li>• Dry bulk trailers</li> </ul>	<ul style="list-style-type: none"> <li>• Flatbed trailers, without full closed sidings)</li> </ul>
<ul style="list-style-type: none"> <li>• Reefer (Refrigerated trucks)</li> </ul>	<ul style="list-style-type: none"> <li>• Platform drop deck</li> </ul>
<ul style="list-style-type: none"> <li>• Standard freight trailer (open in the top to allow lifting the jumbo bags by crane)</li> </ul>	<ul style="list-style-type: none"> <li>• Tanker trailers</li> </ul>

- 4- The official working hours in the cell will be from 9:00 am to 4:00 pm, except on Fridays and Saturdays.
- 5- Before any disposal, ESP shall contact Hazardous waste cells operator to inform about expected date and time for the disposal of Tadweer previously approved hazardous waste.

## 6. Accepted waste and waste acceptance criteria

The following list includes the hazardous wastes (solid) that could be received at the engineered cells at Al-Dhafra Landfill if complying with the laboratory analysis limits in Directive 1999/31/EC and as per Annex 1 of this SOP.

S.No.	Acceptable Hazardous Waste in Solid Hazardous Waste Cells	Pretreatment Requirement by ESP
1.	Carbon Waste / Incinerator ashes	Covered and sealed in jumbo bags.
2.	Used Batteries	Liquid Acid Drain out, Covered and sealed in jumbo bags.
3.	Sludge from Waste Water Physio-Chemical Treatment Plants	Dried Sludge (Dewatering required), Covered and sealed in jumbo bags.
4.	Inert Waste	Elutriation test to be conducted and waste with positive result will be accepted. The waste shall be stabilized.
5.	Slag & Foundry Wastes (Spent pot lining, Slat slag, Aluminum dross, etc)	Elutriation test to be conducted and waste with positive result will be accepted. The waste shall be stabilized.
6.	Used Oil Filters	Drained Oil Filters, Covered and sealed in jumbo bags.
7.	Used Air Filters only (no Gas Filters)	Compressed Air Filters, Covered and sealed in jumbo bags.
8.	Contaminated Packaging, Rags etc.	Compressed Packaging, Rags, and Covered and sealed in jumbo bags.
9.	Empty/ paint containers with traces of dry paint. *	Compacted, Covered and sealed in jumbo bags.
10.	Contaminated Cans and Drums from different industries.*	Compacted, Covered and sealed in jumbo bags.
11.	Oil Contaminated Soil	Covered and sealed in jumbo bags.
12.	Fire Foam	Covered and sealed in jumbo bags.
13.	Insulation Foam	Covered and sealed in jumbo bags.
14.	Insecticide and Pesticide Empty Containers*	Environmentally Depressurized Cans Compacted, Covered and sealed in jumbo bags.
16.	Alkali Solids	Stabilization Treatment Required
17.	Acidic Solids	Stabilization Treatment Required
17.	Organo-Chloride other than pesticide	Stabilization Treatment Required
18.	Spent Catalyst	Stabilization Treatment Required

\* Hazardous container considered empty if meets definition as per Best Management Practices TG document for discharges from construction activities (TG No. EAD-EQ-PCE-TG-14).

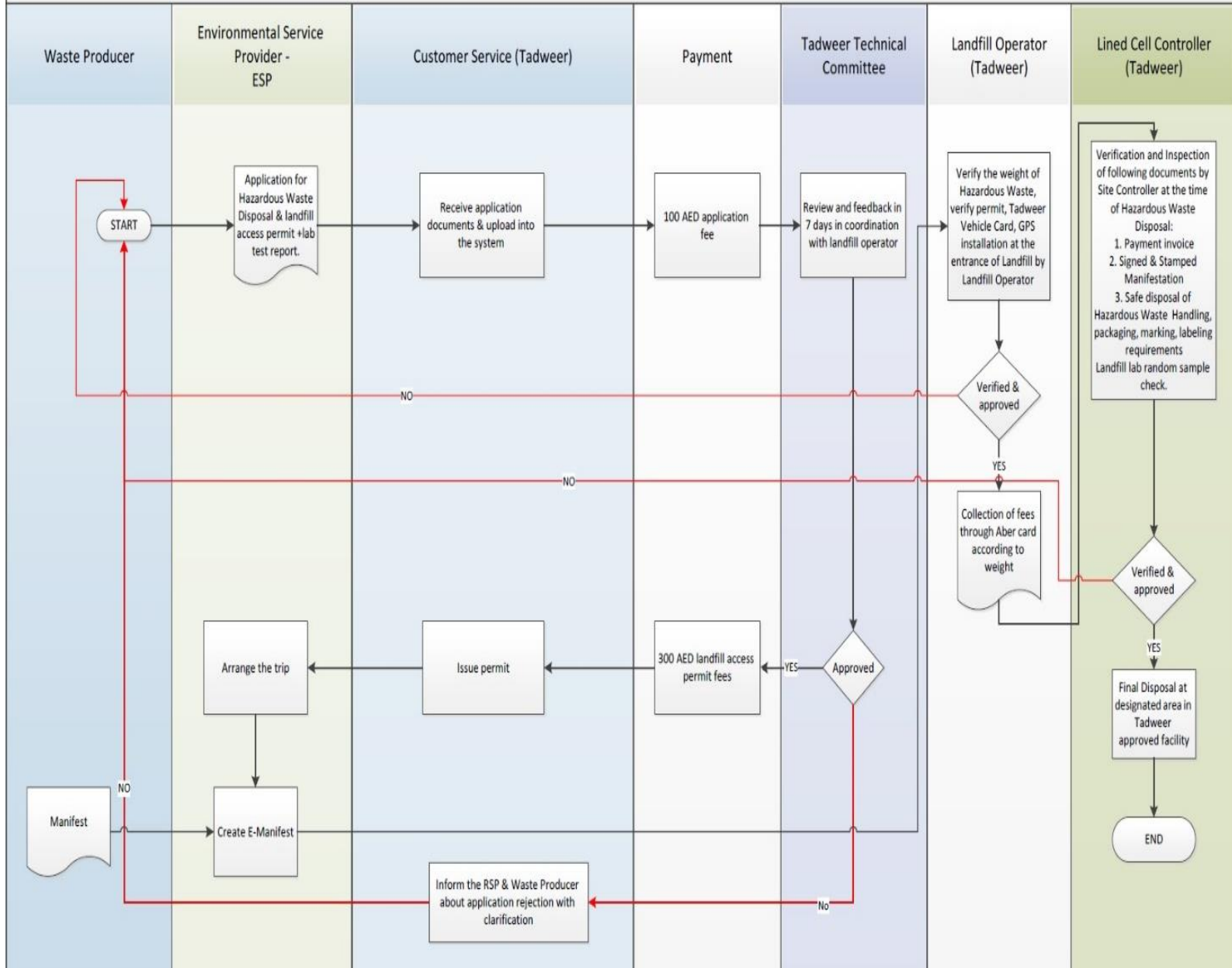
TADWEER will not receive the following Hazardous Waste in the Solid Hazardous Waste Landfill.

1. Liquid Hazardous Waste.
2. Explosive Hazardous Waste.
3. Flammable Hazardous Waste.
4. Highly Flammable Hazardous Waste.
5. Corrosive Hazardous Waste.
6. Reactive Hazardous Waste.
7. Oxidizing Hazardous Waste.
8. Toxic Hazardous Waste.
9. Radioactive Waste.
10. Medical Waste.
11. Pharmaceutical Wast

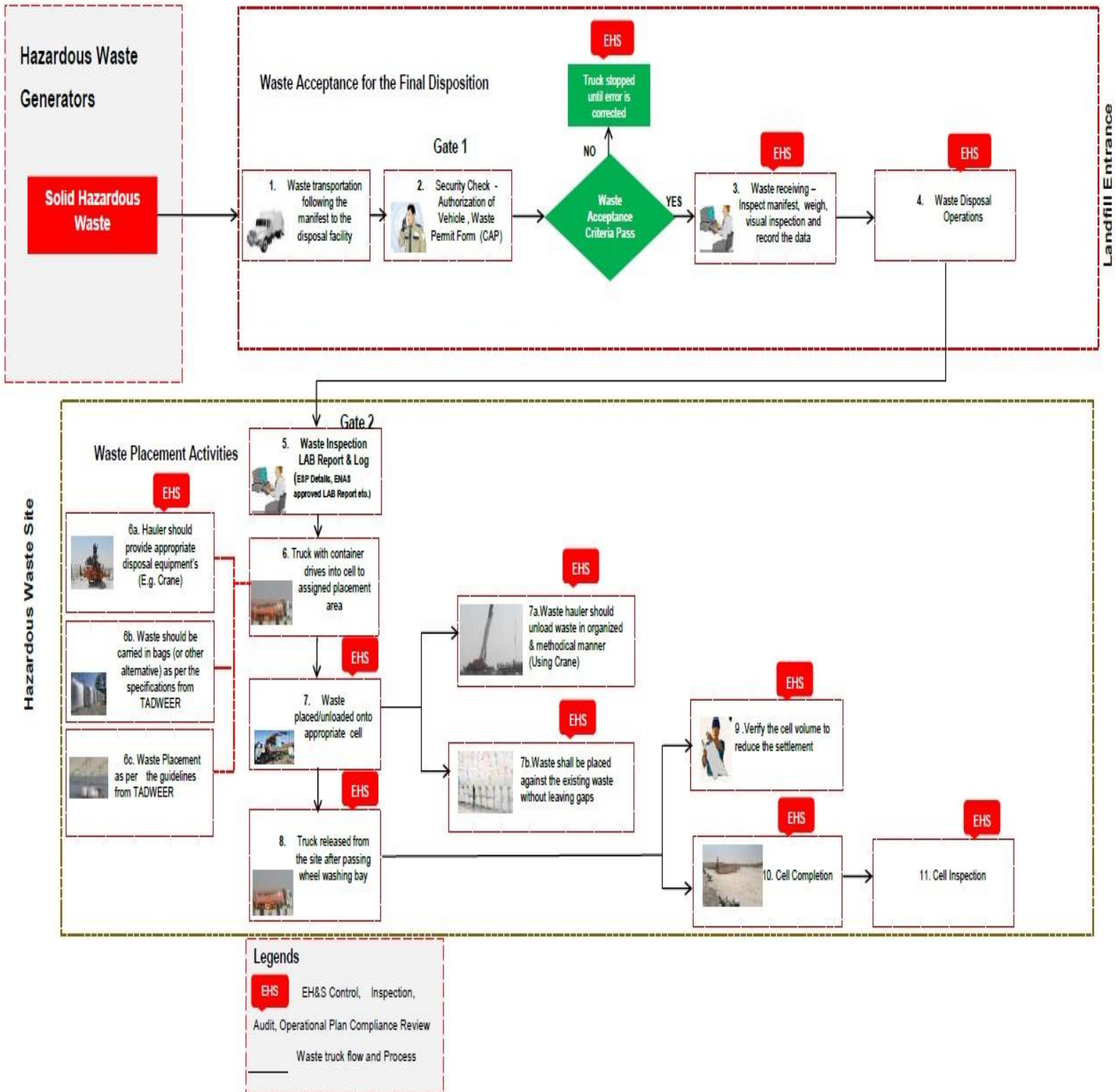


## 7. Mechanism for the disposal of specific solid Hazardous Waste at the hazardous solid waste cells

### Mechanism for the disposal of Specific Solid Hazardous Waste at Tadweer approved Facility



## 8. Waste reception procedure



## 9. Contact Details

Tadweer (The Center of Waste Management),  
P.O. Box 48448, Abu Dhabi, UAE  
Telephone – 02 8185 555

Abu Dhabi Government Call Center Number- 800555  
Emergency Numbers - Police & Ambulance -999; Civil Defense - 997  
Email – [hw@tadweer.ae](mailto:hw@tadweer.ae)

\*Timings to receive specific solid Hazardous Waste at Tadweer approved facility are as follows: Sunday to Thursday from 9:00 am to 04:00 pm and no specific solid Hazardous Waste shall be received on Friday and Saturday.

\*Timings are subjected to change and Tadweer has right to change timings at any time without prior notice.

## 10. Annex

### Annex- 1 Criteria for Waste acceptable at landfill for hazardous waste



#### معايير قبول النفايات فى خلايا النفايات الخطره Criteria for waste acceptable at landfill for hazardous waste

\* 1. limit values (mg/kg) for compliance leaching test using BS EN 12457 at L/S 10 l/kg

\* الحدود العتبية (ميللجرام/كيلوجرام) لاختيار الترشيح

Parameter	الحدود العتبية (ميللجرام/كيلوجرام) Limit values(mg/kg)	العنصر
As (arsenic)	25	الارنيخ
Ba (Barium)	300	الباريوم
Cd (Cadmium)	5	الكاديوم
Cr (chromium total)	70	الكروم
Cu (copper)	100	النحاس
Hg (mercury)	2	الزئبق
Mo (molybdenum)	30	الموليبدينوم
Ni (nickel)	40	النيكل
Pb (lead)	50	الرصاص
Sb (antimony)	5	الانتيمون
Se (selenium)	7	السليسيوم
Zn (zinc)	200	الزنك
Cl (Chloride)	25,000	الكلوريد
F (fluoride)	500	الفلوريد
SO4 (Sulphate)	50,000	الكبريتات
total dissolved solids (TDS)**	100,000	اجمالي محتوى المواد الصلبة الذائبة
Dissolved organic carbon at own pH or pH 7.5-8.0	1,000	الكربون العضوي الذائب عند درجة الاس الهيدروجيني من 7.5 الى 8

\* As per European Directive 1999/31/EC

\* كما جاء بالتعليمات الاوروبية رقم EC/1999/31

\*\* The values for TDS can be used instead of the values for Cl and SO4

\*\* يمكن قياس قيم اجمالي محتوى المواد الصلبة الذائبة بـ من قيم الكلوريد و الكبريتات

#### 2. Other Parameters

2. عناصر اخرى

Parameter	الحدود العتبية Limit values	العنصر
Moisture Content	20%	محتوي الرطوبة
Oil Content	5%	محتوي الزيت
Flash Point	62C <sup>o</sup>	نقطة الوميض
Total Organic Carbon (TOC) (% w/w)	6% *	المحتوي الاجمالي للكربون
Loss On Ignition (LOI) (% w/w)	10% *	الفقد عند الاشتعال

\* As per European Directive 1999/31/EC. Either TOC or LOI must be used for hazardous wastes

\* يتم قياس المحتوي الاجمالي للكربون أو الفقد عند الاشتعال فى النفايات الخطره كما جاء بالتعليمات الاوروبية رقم EC/31/1999