LAVAJET

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# 01. Lavajet Around the World

*We at Lavajet are proud of our 25+ years of expertise in the solid waste management business.*

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# 02.
# Get to Know Us

***Founded in 1990, LAVAJET is an international provider of environmental waste management services and a recognized leader in its domain with a proven track record for achieving the highest standards of excellence. We deliver innovative and environmentally responsible solutions to governments, industries, and businesses.***

LAVAJET offers comprehensive and integrated solid waste management services including but not limited to:

* **Solid Waste Collection & Disposal**
* **City Cleansing**
* **Design, Construction and Operation of Transfer Stations**
* **Design, Construction and Operation of Sorting and Composting Plants**
* **Design, Construction and Operation of Sanitary Landfills**
* **Siting and environmental permitting and studies**

LAVAJET today employs more than 3,000 staff including Engineers, Administrators, Technicians and a highly trained Labor force.

# 03. Mission

To partner with our clients in order to empower and improve management of solid waste issues in order to minimize negative impacts on the Communities & Cities we work in.

Our management is committed to providing the best available service through integrity, teamwork and long term client relationship.

Our 3,000 employees are among the best talents and are always improving their competence through an extensive & continuous training program. This allows us to adopt the best and most advanced technologies and maintain a consistent high level service in all the Cities we operate in.

# Vision

To be acclaimed throughout the Region and the World as being an unsurpassed solid waste management company by completing all our projects at superior quality on time and on budget every time.

We inspire to continually & rapidly adapt what we learn and maintain sustainability while maintaining growth to our shareholders.

# 04.
# What We Do

/service 01/
**Waste Collection & City Cleansing**

/service 02/
**Transfer Stations**

/service 03/
**Waste Treatment**

/service 04/
**Sanitary Landfills**

/service 05/
**Sorting Plants**

/service 06/
**Compost Plants**

/ service 01 /

# Waste Collection & City Cleansing

*What We Do:*

# *Waste Collection & City Cleansing*

## *We service over 2 million residents worldwide.*

Solid Waste Collection and City Cleansing are some of the basic services we provide. These services are supported by the latest technologies and equipment that are utilized to perform a wide range of related activities including but not limited to:

* Collection & Handling of Household and Munipical Waste
* Collection & Handling of Commercial and Industrial Waste
* Collection & Handling of Medical and Clinical Waste
* Collection & Handling of Market, Bulky, C&D and Green Waste
* Handling of special waste such as religious scriptures and E-Waste
* Collection & Handling of Slaughterhouse Waste
* Street Sweeping (Mechanical and Manual)
* Street Washing & Cleansing (Underground passes, Bus stops, Manmade water lagoons, Gutters, etc.)
* Special high-profile areas (cleaning and cleansing)
* Shoreline and Beach Cleaning
* On-Call & Emergency Services

Give it another chance.
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/ service 02 /

# Transfer Stations

*What We Do:*

# *Transfer Stations*

*Design, construction and operation of transfer stations:*

As a complementary activity to our basic services of Waste Collection and City Cleansing, we provide Transfer Stations Services with turn-key solutions.

Our transfer stations are designed, built, and operated using the most advanced technologies that can ultimately reduce fuel consumption, cost of waste transport, traffic congestion and hence cut down on greenhouse gas emissions reducing air pollution.

Our Transfer Stations design and process systems include but are not limited to:

* Static or dynamic Compactors that allow the increase of reception of the transfer trucks carrying capacity (RollOn/Off Containers)
* Combination of structures, machinery and technologies for volume reduction purposes
* Designed Tipping & Loading Areas
* Elevated Ramps designed to release waste mainly into hoppers
* Civil works, road, structures, fences, gates etc.
* Monitor and record keeping using the most advanced computerized systems and software
* Air Pollution Control systems for all enclosed operating areas
* Leachate collection and disposal systems

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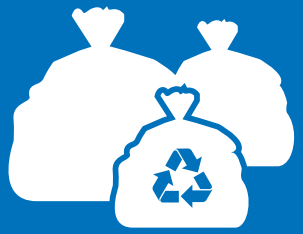
The Lavajet facilities are designed, built and created in a way to prevent the release of any substance that causes or may cause an adverse effect.



/ service 03 /

# Waste Treatment

## *What We Do:*
# *Waste Treatment*

Our Engineering Department dedicates the needed time for each Project to identify the specific issues and propose the best applicable solutions after evaluating different alternatives in order to minimize the process cost in an environmentally friendly manner, while maintaining the desirable process efficiency.

## *Objectives*

Our main objective is to manage the waste stream in an environmental, sustainable and highly-technical manner.

We provide efficient and sustainable treatment methods to fulfill the following purposes:

* Sorting of different types of recyclables from the waste stream
* Minimizing the contamination of potential recyclables & hence producing high quality recyclables
* Reducing the quantity of waste to be disposed at the Municipal Solid Waste Landfill
* Achieving high quality Compost products

Our Solid Waste Treatment Facilities include **Sorting**, **Composting**, and **Landfilling**.

/ service 04 /

# Sanitary Landfills

## *What We Do:*

# *Sanitary Landfills*

### *Design, construction and operation of Sanitary Landfills:*

Design, Construction and Operation of Sanitary Landfills is one of LAVAJET's expertise - as we have been providing this type of service from the very early days of the company's inception.

All the landfills we design and construct are based on very stringent design techniques to meet the most advanced and international standards in Europe, USA, and other parts of the world.

Our knowledge and skills in Sanitary Landfills vary in type: Domestic and Municipal Waste, Commercial and Industrial Non-Hazardous Waste, C&D Waste, and Hazardous Waste.

LAVAJET's key experience in Sanitary Landfills design, construction and operation processes are namely the following:

* Earthmoving works
* Construction Works related to the facilities: Guard House, Administrative Building.
* Geosynthetic Lining System (geomembrane, geotextile, etc.)
* Cell Construction
* Leachate Management System
* Landfill Gas (LFG) Management System
* Groundwater and Surface Water Monitoring
* Operation and Maintenance
* Closure and Post-Closure

* Development and Implementation of Environmental Mitigation Plan, HSE Plan, and Quality Plan

The creation of Sanitary Landfills is based on engineered designs, construction techniques, and operational skills aimed at minimizing the occurrence of any potential impact on the environment (air pollution and groundwater contamination).

The high protective construction of cells is coupled with a professional operational service that uses technological solutions to control the LFG and the Leachate caused by the solid waste decomposition.

It is to note that the Hazardous Waste Landfills consist of a more sophisticated design compared to Municipal Solid Waste Landfill designs.

/ service 05 /

# Sorting Plants

## *What We Do:*

# *Sorting Plants:*

### *Design, construction and operation of Sorting Plants:*

The purpose of the Sorting Plant has become increasingly an integral part of any comprehensive and integrated solid waste management program.

The major goals of the Sorting Facility is to segregate and recover potentially recyclable materials from the waste stream for revenue generation, and to remove contaminants from the organic feedstock to produce higher quality compost.

Our sorting plant, also known as a material recovery facility (MRF), usually consists of one or more sorting lines allowing processing of commingled recyclables from the varied collection points within a city.

Our plants can process and recover up to 90% of collected waste such as paper, plastic, steel, aluminum, cans and HDPE to name just a few.

Our plants vary from manual to fully automated systems and consist of the following but not limited major key measures:

* Civil works for structure and infrastructure
* Designed tipping floor and conveying systems
* Sorting Systems, such as: bag openers, trommels, disc screens and vibrating screens, air separators and optical separators, density sorters, magnetic separators etc.

The capacity of our plants range from 50 t/d to more than 1,500 t/d and can save landfill space to meet mandated reduction goals, generate recyclable income, conserve resources and reduce landfill tipping fees.

/ service 06 /

# Compost Plants

*What We Do:*

# *Compost Plants:*

Composting is a form of recycling and aims at reducing the Municipal Solid Waste (MSW) volumes to be landfilled, by recovering and re-using recyclables, and changing the organic fraction of the waste into useful products.

Composting is the biological decomposition of the biodegradable organic fraction of MSW under controlled conditions to a state sufficiently stable for nuisance-free storage and handling and safe use in agricultural applications.

We emphasize that the most important factor for the success of the facility is the product quality, hence, compost produced is regularly monitored, and its quality improved by proper waste separation and operation activities.

Our design requirements for the Compost Plant and standards for the compost quality are developed based on the local regulatory requirements and guidelines if they exist; otherwise, the applicable guidelines in Canada, Europe, and the USA are used. These requirements include the compost facility design, operations, process controls, testing, monitoring, maintenance, reporting, odor control, constituent application rates and compost quality.

Some of the basic composting systems designed by the company for the decomposition steps are:

* Static windrows (piles)
* Turned windrows
* In-vessel composting

# 05.
# Operational Performance

Number of full time Managerial personnel by office or region
(excluding projects' staff):

- Lebanon Office: 42
- UAE Office: 61

## Middle East

| Project Name | Location | Staff | Description |
|---|---|---|---|
| ***Outsourcing of Solid Waste Collection and Transportation Street Sweeping and Cleansing Services to Al Ain North Zone*** | Al Ain, Abu Dhabi (UAE) | 1,204 | Population: 400,000 / 5,600 $km^2$ |
| ***Operation of Al Dhafra Landfill*** | Abu Dhabi (UAE) | 60 | (>20,000 t/d) |
| ***Operation of Al Mafraq Transfer Station*** | Abu Dhabi (UAE) | 45 | (>2,000 t/d) |
| ***Solid Waste Collection, Cleaning and Street Sweeping, and On-Call Services in Abu Dhabi City Area 1*** | Abu Dhabi (UAE) | 865 | Population: 700,000 / 50 $km^2$ |
| ***Sweeping, Cleaning and Washing the Streets, Posters Removal, Waste Collection Services and Transportation from the Cities of the Urban Community of Al-Fayhaa*** | Tripoli, Lebanon | 506 | Population: 500,000 / 35 $km^2$ |

# 06. Accreditation

***LAVAJET has the following accreditations:***

1. ***ISO 9001*** 2000 Quality Management System
2. ***ISO 14001*** 2004 Environmental Management System
3. ***OHSAS 18001*** 2007 Occupational Health & Safety Management System

# 07.
# Selected Projects

***The following section displays several samples of projects we have done over the past years.***

Our scope of work shows our solid presence in several cities all over the world where LAVAJET has proved to be a leader in its industry with effective and concrete results.

| Project Name | Location | Scope of Services |
|---|---|---|
| ***Street Sweeping and Revamping of Signs*** | USA | - Road sweeping, mowing, street signs and guardrails reparation and replacement on the highway 195, I95, 826 and airport expressway. |
| ***Street Sweeping and Revamping of Signs*** | USA | - Road sweeping, mowing, street signs and guardrails reparation and replacement on highway 4 and Central Florida Greenway. |
| ***Beach Cleaning and Waste Management Services*** | Abu Dhabi (UAE) | The project consists of 3 years contracts for three beaches in Abu Dhabi: Corniche Beach, Bateen Beach, Ladies Beach. The works include:<br>- Janitorial works,<br>- Waste segregation, collection and removal,<br>- Beach cleaning: sandy beach area and associated beach furniture,<br>- Litter picking; cleaning gardens and walkways. |
| ***Design & Construction of Liquid and Solid Hazardous Waste Cells*** | Abu Dhabi (UAE) | The project consists of an EPC Contract that involves the design of liquid and solid hazardous waste cells, as well as the construction of engineered lined cells, leachate detection system, access roads, and fence. |

| Project Name | Location | Scope of Services |
|---|---|---|
| ***Outsourcing of Municipal Solid Waste Collection & Transportation, Street Sweeping & Cleansing Services in Al Ain North Zone Contract No. 1*** | Abu Dhabi (UAE) | - Procurement of mobile equipment for waste collection,<br>- Waste collection services (community collection points and door-to-door),<br>- Waste transferring services including the operation and maintenance of three transfer stations located across the service area,<br>- These services provide a processing capacity of more than 1,173 t/day of municipal waste including agricultural waste. |
| ***Solid Waste Collection & Transportation, Street Sweeping & On-Call Services Area 1 City of Abu Dhabi*** | Abu Dhabi (UAE) | - Procurement of mobile equipment for waste collection,<br>- Waste collection services of 628 t/day of MSW. These services include: door-to-door services, segregated waste collection and C&D Collection,<br>- Cleaning services (manual & mechanical) such as: Street sweeping & cleaning services, bridges, tunnels and public toilets cleaning. |
| ***Operation, Maintenance, Monitoring and Control of Landfill at Al Dhafra and Transfer Station at Al Mafraq*** | Abu Dhabi (UAE) | - Procurement of mobile equipment,<br>- Daily operation of the landfill of up to 20,000 t/day of Municipal Solid Waste, Mixed Waste, C&D Waste, and Hazardous Waste,<br>- Design and construction of Engineered Hazardous Waste Cells,<br>- Design and construction of a Material Recovery Facility (MRF) at the landfill site,<br>- Operation & maintenance of the Transfer Stations with a capacity of 2,000 t/day of waste,<br>- Operation and maintenance of the MRF with a capacity of 5,000 t/d. |

| Project Name | Location | Scope of Services |
|---|---|---|
| ***Design and Construction of Al Buraimi Sanitary Landfill*** | Al Buraimi, Oman | The scope of work for the project includes Engineering, Procurement and Construction of a new engineered sanitary landfill facility for disposing municipal solid waste, located about 12 Km from the main city of Al Buraimi for a duration of 1 year. The engineered landfill is designed to receive 125 ton daily of domestic waste and to accommodate 500,000 $m^3$ of waste. |
| ***Sweeping, Cleaning and Washing the Streets, Posters Removal, Waste Collection and Transportation from the Cities of the Urban Community of Al-Fayhaa' Tripoli Phases I & II*** | Tripoli, Lebanon | - Mobilization of resources and procurement of city cleaning equipment,<br>- Street cleaning, mechanical & manual sweeping & washing,<br>- Waste Collection & transfer services (450 t/day): Municipal,<br>- Poster and graffiti removal. |
| ***Operation and Maintenance of a Solid Waste MRF and MBT in Nabatiyeh*** | Nabatieh, Lebanon | The scope of work includes Operation and Maintenance of a Material Recovery and Biological Treatment Facility:<br>- Mechanical and Manual Sorting, Handling and Recovery of waste;<br>- Biological Treatment (Composting: fermentation and maturation) of Organic waste.<br>- Transfer of rejects to landfill<br>- Sales of recyclables |

*Selected Projects:*

# *Middle East and Africa*

*Outsourcing Of Solid Waste Collection &Transportation, Street Sweeping And Cleansing Services To the northern region of Al Ain*

### *Location:*

Al Ain, UAE

### *Client:*

Al Ain Municipality - TADWEER
(The Center of Waste Management-
Abu Dhabi)

Waste collection, street sweeping and cleaning services in the Northern Region of Al Ain for a population of 300,000 and daily waste averaging 1,173 tons.

### *Description of Work:*

01/ Daily waste collection (municipal, commercial, green, agricultural and industrial wastes)
02/ Street sweeping and litter picking
03/ Manual and mechanical street washing
04/ Graffiti removal
05/ Customer Call Center
06/ Operation and maintenance of the service (PMV; QA; QC)
07/ Environmental monitoring

*Selected Projects:*

# *Middle East and Africa*

*Solid Waste Collection, Cleaning and Street Sweeping, and On-Call Services in Abu Dhabi - Service Area 1*

### *Location:*
Abu Dhabi, UAE

### *Client:*
TADWEER (The Center of Waste Management-Abu Dhabi)

The project targets the collection of up to 628 tons of municipal solid waste generated daily within Abu Dhabi.

### *Description of Work:*
01/ Collection of MSW (628 t/d)
02/ Sweeping and cleaning of all roadways, streets and all public areas including public beaches, public parks, under passes, public bathrooms, markets, bus stops, parking service areas, and properties of special importance such as palaces and monuments
03/ On-Call services
04/ Public awareness, educational programs and customer services

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*Selected Projects:*

# *Middle East and Africa*

*Al Dhafra Landfill & Transfer Station*

### *Location:*

Abu Dhabi, UAE

### *Client:*

TADWEER (The Center of Waste Management-Abu Dhabi)

Operation and management services for the Al Dhafra landfill and transfer station for municipal solid waste up to 20,000 tons a day.

### *Description of Work:*

01/ Procurement of mobile equipment,
02/ Daily operation of the landfill of up to 20,000 t/day of Municipal Solid Waste, Mixed Waste, C&D Waste, and Hazardous Waste,
03/ Design and construction of Engineered Hazardous Waste Cells,
04/ Design and construction of a Material Recovery Facility (MRF) at the landfill site,
05/ Operation & maintenance of the Transfer Stations with a capacity of 2,000 t/day of waste,
06/ Operation and maintenance of the MRF with a capacity of 5,000 t/d.

*Selected Projects:*

# *Middle East and Africa*

*Abu Dhabi Beach Cleaning*

***Location:***
Abu Dhabi, UAE

***Client:***
SERCO and Abu Dhabi Municipality

***Consultant:***
Entec

Beach Cleaning and Waste Management Services.

***Description of Work:***
The project consists of 3 years contracts for three beaches in Abu Dhabi:
- Corniche Beach
- Bateen Beach
- Ladies Beach

The works include:
01/ Janitorial works.
02/ Waste segregation, collection and removal.
03/ Beach cleaning: sandy beach area and associated beach furniture.
04/ Litter picking; cleaning gardens and walkways.

*Selected Projects:*

# *Middle East and Africa*

*Abu Dhabi Hazardous Waste Cells*

***Location:***
Abu Dhabi, UAE

***Client:***
TADWEER (The Center of Waste Management-Abu Dhabi)

Design & Construction of Liquid and Solid Hazardous Waste Cells.

***Description of Work:***
The project consists of an EPC Contract that involves the design of liquid and solid hazardous waste cells, as well as the construction of engineered lined cells, leachate detection system, access roads, and fence.

*Selected Projects:*

# *Middle East and Africa*

## *Al Buraimi Landfill*

***Location:***
Al Buraimi, Oman

***Client:***
Oman Environmental Service Holding Co. (S.A.O.C.) - Be'ah

***Consultant:***
Libanconsult

Design and Construction of a Sanitary Landfill.

***Description of Work:***
The scope of work for the project includes Engineering, Procurement and Construction of a new engineered sanitary landfill facility for disposing municipal solid waste, located about 12 Km from the main city of Al Buraimi for a duration of 1 year. The engineered landfill is designed to receive 125 ton daily of domestic waste and to accommodate 500,000 $m^3$ of waste.

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