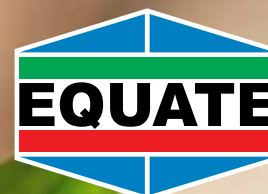


# Caring for the Environment



Partners in Success



**EQUATE**  
Environment Booklet

EQUATE Petrochemical Company  
[www.equate.com](http://www.equate.com)



EQUATE IS COMMITTED  
TO CONTRIBUTING TO  
THE SUSTAINABILITY OF  
THE ENVIRONMENT AND  
THE COMMUNITIES IN  
WHICH WE LIVE.



# Index

- 1 Introduction
- 3 Responsible Care
- 5 EQUATE Incinerators
- 7 Sea Cooling Tower
- 9 Pollution Prevention Program
- 11 Waste Management Program
- 13 Air Quality Management
- 15 Plant Water Recycle Project
- 17 Remediation Management
- 19 Sulphur Recovery Unit
- 21 The Green Carbon Project
- 23 ISO Certification



# THE ENVIRONMENT IS AN IMPORTANT TOPIC AND A CORE PART OF OUR GREEN INITIATIVES PROGRAM.

## Introduction

EQUATE believes in sustainable growth that permeates all levels of the society. Towards that end, we constantly raise the benchmark of our quality to draw on par with world class standards. We strive to fulfill our values as a responsibility to our business partners, our community and the environment.

EQUATE is increasingly seen as a world class company that uses best practices in all aspects of its business. The environment is an important topic and a core part of our Green initiatives program. We invest widely into the community and implement numerous environmental initiatives which are embedded in our sustainability plans.

This report highlights and showcases some of our key initiatives and activities portraying our commitment to sustainability at large. Projects such as the Plant Water Recycle project stem from our value of achieving environmental, health and safety excellence. Other initiatives include: the green global operational concept, jump starting initiatives that cover green carbon emissions, reducing water consumption and conservation.


Driving EQUATE's Green Initiatives is the EQUATE Green Team with a goal to; "achieve environmental excellence by contributing to a cleaner environment by adopting global green operation concepts through greenhouse gas reduction, energy efficiency, and water conservation initiatives".



We hope you enjoy reviewing EQUATE's efforts to create a sustainable environment and we are committed to continually invest in creating sustainable solutions.

On behalf of our Management, Board Members and employees, I would like to thank all those who have collaborated with us for their support, contribution as well as the commitment and dedication of our stakeholders.

Kind Regards,



Mohammad Al-Benali  
 Vice President - Technical Services  
 & EQUATE Green Steering Team sponsor





## Responsible Care

EQUATE is a company that implements and enforces a responsible care philosophy, committed to demonstrating continuous improvement in the environmental, health and safety parameters.

Responsible Care is a voluntary initiative of the global chemical industry to safely handle products from their inception in the research laboratory, through manufacture and distribution, to ultimate reuse, recycle and disposal and to involve the public in our decision-making processes.

Responsible Care is taking leading chemical companies above and beyond their prior accomplishments, to achieve even higher standards of performance and generate greater value for their businesses. Bringing this important initiative to the Gulf and the Middle East region is a commitment we have undertaken for the benefit of the community.

We believe that any development will attain its true goals only when it is integrated with the overall well-being of the community, not only in terms of economic prosperity, but health and safety as well, in addition to sustainability.

EQUATE successfully passed the Responsible Care 14001 assessments with impressive results by becoming the first organization to be RC 14001 certified in Kuwait.

**EQUATE Petrochemical Company**

## ***THE FIRST*** ***Kuwaiti Organization***

To receive  
**Responsible Care 14001**  
*Certification & Accreditation*







WHILE  
INCINERATION  
DOES NOT  
COMPLETELY  
REPLACE LAND  
FILLING, IT  
SIGNIFICANTLY  
REDUCES THE  
NECESSARY  
VOLUME FOR  
DISPOSAL  
AND IS A STEP  
FORWARD IN  
ENVIRONMENTAL  
CLEANLINESS.

## EQUATE Incinerators

EQUATE successfully operates two incinerators of which the objective is to destroy liquid hydrocarbon wastes produced in the process.

The use of these incinerators ensures no liquid hydrocarbon waste goes out of EQUATE whilst ensuring they remain Kuwait EPA compliant. Incineration is a waste treatment process that involves the combustion of organic substances contained in waste materials.

The incineration of waste materials converts the waste into ash, flue gas, and heat. The ash is mostly formed by the inorganic constituents of the waste, and may take the form of solid lumps or particulates carried by the flue gas.

The flue gases must be cleaned of gaseous and particulate pollutants before they are dispersed into the atmosphere. In some cases, the heat generated by incineration can be used to generate electric power. Incineration with energy recovery is one of several waste-to-energy technologies. Incinerators such as those used by EQUATE reduce the solid mass of the original waste by 80–85 % and the volume by approximately 95 %, depending on composition and degree of recovery of materials such as metals from the ash for recycling.

This means that while incineration does not completely replace land filling, it significantly reduces the necessary volume for disposal and is a step forward in environmental cleanliness.





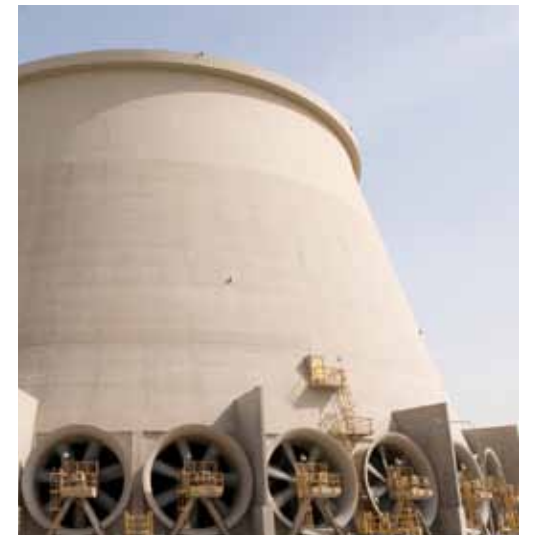


THE SEAWATER  
COOLING TOWER  
IS HIGHLY  
BENEFICIAL AS  
IT EFFICIENTLY  
CONSERVES  
THE GULF'S  
ENVIRONMENT  
AND ALLOWS  
FOR THE RECYCLE  
AND REUSE OF  
WASTEWATER.

## Sea Cooling Tower

At EQUATE we are making great efforts in order to ensure sustainable development within the State of Kuwait and abroad in all relevant areas.

We have launched several global initiatives in the field of environmental welfare, in particular the first project in the Middle East to rationalize and reuse seawater. The seawater cooling tower is highly beneficial as it efficiently conserves the Gulf's environment and allows for the recycle and reuse of wastewater. It avoids creating new environmental impact on the marine ecology and greatly minimizes salt emissions, thus creating no significant impact on the surrounding areas.







EQUATE HAS  
IMPLEMENTED  
A POLLUTION  
PREVENTION  
PROGRAM THAT  
PERTAINS TO  
ENVIRONMENTAL  
PERFORMANCE  
OBJECTIVES  
AND OPERATING  
DISCIPLINES.

## Pollution Prevention Program

Pollution prevention describes activities that reduce the amount of pollution generated by a process, whether it is consumer consumption, or industrial production.

In contrast to most pollution control strategies, which seek to manage a pollutant after it is formed and reduce its impact upon the environment, the pollution prevention approach seeks to increase the efficiency of a process, thereby reducing the amount of pollution generated at its source.

EQUATE has implemented a pollution prevention program that pertains to environmental performance objectives and operating disciplines in the management, design, construction, operation, maintenance and closure of EQUATE facilities.

At EQUATE we operate in several different areas for pollution prevention that include waste air, water, soil and groundwater protection management.

## EQUATE'S MANAGEMENT OF WASTE SPECIFICALLY INCLUDES HANDLING, STORAGE, CONTAINMENT, TREATMENT AND DISPOSAL.

### Waste Management Program



Waste management is the collection, transportation, processing or disposal, managing and monitoring of waste materials.

Each EQUATE facility operates in compliance with the pollution prevention aspects to avoid impairment of, or damage to, the environment, human health, safety, or property and follows the waste management hierarchy:

1. Source reduction/elimination
2. Recycle
3. Recover
4. Convert
5. Treatment
6. Containment

These contribute to waste reduction efforts and energy, water and materials conservation. It is a distinct practice from resource recovery, which focuses on delaying the rate of consumption of natural resources.

The management of wastes treats all materials as a single class, whether solid, liquid, gaseous or radioactive substances, and aims to reduce the harmful environmental impacts of each through different methods. Each facility or site manages wastes and wastewater

to minimize adverse environmental impact and meets applicable government requirements.

EQUATE's management of waste specifically includes handling, storage, containment, treatment (destruction) and disposal. All facilities ensure that their waste and wastewater meets the specifications of the receiving of waste treatment, storage or disposal.

EQUATE is also mindful of making the maximum use of all available resources and hence does not dispose off spec products as waste. Instead, EQUATE commoditizes them for consumption in specialized markets.







EQUATE'S STATE-OF-THE-ART FACILITIES ARE BUILT BASED ON THE BEST ENGINEERING DESIGN STANDARDS THAT SUPPORT OVERALL AIR EMISSION REDUCTION.

## Air Quality Management

At EQUATE we effectively evaluate the environmental impact of air emissions. From process vents, storage vessels and systems, other process/laboratory equipment, fugitive emission sources and waste and wastewater streams. We minimize, treat and control air emissions to meet air quality objectives and applicable government requirements.

Our aim is to maintain and achieve a level of air quality, which protects human health and the environment. Air pollution impacts heavily on human health and the environment, also resulting in high financial costs and the benefits received from emission reductions are usually much higher than the cost of implementing emission reduction measures.

EQUATE's state-of-the-art facilities are built based on the best engineering design standards that support overall air emission reduction. Actual air emissions are constantly monitored through online leak detection systems to ensure compliance as well as continuously identifying opportunities for improvements.



## The Plant Water Recycle Project



recycling  
water

supports  
life

**Our Plant Water Recycle Project:**  
Recycling 245 million gallons of water a year.  
This is part of our commitment towards Kuwait,  
its people and to safeguard the environment.

[www.equate.com](http://www.equate.com)

THE TREATED  
WATER WILL  
BE REUSED FOR  
IRRIGATION  
PURPOSES TO  
MEET THE NEEDS  
OF EQUATE'S  
GREEN VISION.

## Plant Water Recycle Project

Protecting our community from water pollution is one of EQUATE's highest priorities. All our facilities contain, monitor, control and treat waste water towards this end.

### What difference will the initiative make?

Before the project, EQUATE discharged around 1.3 million gallons of treated waste water to a seawater cooling tank. By implementing the project, at least 80 % of the waste water will be further treated and reused within EQUATE.

### What does Plant Water Recycle Project mean to Kuwait?

This means 245 million gallons of fresh water is saved for Kuwait every year. Reusing waste water is the best utilization of Kuwait's resources.

### Where will this treated waste water be used?

The treated water will be reused for irrigation purposes to meet the needs of EQUATE's Green vision.

### What is the scope of this project?

EQUATE will build all the infrastructure for the WWT and the irrigation plants, including the plantation network project.



A large, stylized green leaf graphic is positioned behind the text on the right side of the page. It has a central stem with several large, rounded leaves branching out, rendered in a light green color.

EQUATE  
CONTAINMENT  
SYSTEMS  
MINIMIZE THE  
RISK OF SOIL AND  
GROUNDWATER  
CONTAMINATION  
TO MEET  
APPLICABLE  
GOVERNMENT  
REQUIREMENTS  
AND MAINTAIN  
A SAFE  
ENVIRONMENT.

## Remediation Management Soil and Ground Water Protection


At EQUATE, the potential for soil and groundwater contamination is effectively evaluated.

The evaluation addresses the potential impact from past and current operations and waste management practices. Based on the evaluation, each site develops a remediation strategy.

Underground storage tanks and below-grade installations, for example, piping, trenches, sumps, sewers, on EQUATE locations containing material that, if leaked, could result in contamination of soil or groundwater, are all designed and operated to minimize adverse environmental impact.

EQUATE containment systems minimize the risk of soil and groundwater contamination to meet applicable government requirements and maintain a safe environment.



A low-angle photograph of green leaves against a bright blue sky with a sunburst effect. The sun is partially obscured by the leaves, creating a lens flare effect. The overall tone is bright and natural.

IT IS AN  
ESSENTIAL  
PROCESSING STEP  
TO ALLOW THE  
OVERALL FACILITY  
TO OPERATE,  
WITHOUT ANY  
DISCHARGE  
OF SULPHUR  
COMPOUNDS (SO<sub>2</sub>  
EMISSIONS) TO  
THE ATMOSPHERE.

## Fugitive Emission Monitoring Program

The term, fugitive emission, as used in air quality control, generally refers to any emission escaping from regulated processes (sources) other than via the designed release point. The point source for a fugitive emission is simply called "a leak." These leaks and emissions are most often associated with the equipment necessary for the movement of process fluids and gasses.

The term "fugitive" is used because these emissions are neither calculated in the source design, captured by the emission control systems, nor are they detected through normal equipment monitoring processes. Since these emissions bypass control equipment, they are also referred to as "uncontrolled emissions."

In 2008, EQUATE commissioned a Leak Detection and Repair program to manage and report fugitive emissions.

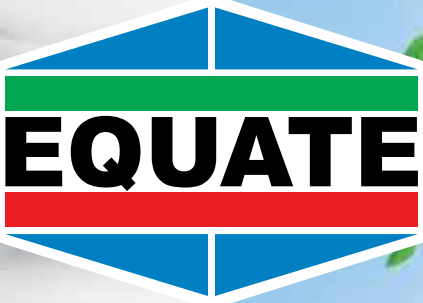
## Sulphur Recovery Unit

At EQUATE the initiation of the world class Sulphur Recovery Unit was started in September 2009, which converts Sulphur Dioxide into Molten Sulphur, thus protecting the environment from SO<sub>2</sub> emissions leaking into the atmosphere that are harmful to human health.

The Unit is a nonprofit unit; however it is an essential processing step to allow the overall facility to operate, without any discharge of Sulphur compounds (SO<sub>2</sub> emissions) to the atmosphere, and hence protecting our environment.



## The Green Carbon Project



**reducing  
emissions**

**supports  
life**

**The Green Carbon Project:**  
Recovering 150 thousand tons of carbon dioxide a year.  
This is part of our commitment towards Kuwait,  
its people and to safeguard the environment.

[www.equate.com](http://www.equate.com)

REDUCING  
CARBON  
EMISSION AND  
ITS FOOTPRINT IS  
DRIVEN  
BY EQUATE'S  
STRONG  
CORPORATE  
SOCIAL  
RESPONSIBILITY  
OBJECTIVE.

## The Green Carbon Project

### Reducing our carbon footprint

At EQUATE, we have invested in projects and activities to help reduce our carbon footprint. Our Green Carbon Project Initiative addresses this issue.

### The Green Carbon project

EQUATE signed the Gulf's first ever carbon emission reduction and capture deal with Greencarbon in 2008.

Carbon dioxide produced by EQUATE would be piped to the neighboring Greencarbon processing facility to be re-used.

### Reducing carbon emissions

An estimated 150,000 tons of carbon dioxide gas is expected to be exported annually to Greencarbon which is considered a significant step towards achieving environmental excellence.

### Our carbon footprint

Identifying and capturing the greenhouse gas vent stream and utilizing it effectively to reduce carbon emission and its footprint was driven by EQUATE's strong corporate social responsibility objective.



# Gold Achievements Reflect Our Commitment



EQUATE Petrochemical Company wins for the third consecutive year the 2011 International (Health, Safety & Environment) Gold Award in the Hydrocarbon category in the GCC.

## Awards and International Standards

### CSR related awards received by EQUATE

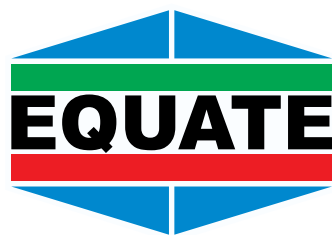
All awards granted to EQUATE are not viewed as rewards, but they are considered sources of encouragement for EQUATE to continue its efforts in boosting and developing the Kuwaiti society through all possible means.

In recognition of its sustainable achievements, EQUATE has earned several prestigious honors, including His Highness the Amir Award for the Best Plant in Kuwait; the Gold Award in Health, Safety and Environment (HSE) for Gulf private sector companies; the Award for Best Gulf Company in Recruiting Nationals; Oil & Gas Middle East CSR Award; as well as Kuwait's CSR Award in the Industrial and Oil Sector. In addition, EQUATE has received the Highly Commended Best Community Program Award during the First Middle East CSR Award Summit.

### ISO Certification

Manifesting its abidance with best business practices in all relevant disciplines, EQUATE is an ISO 9001 and ISO 14001 certified company which has been sustaining its commitment to such standards through overall sound implementation and periodic audits from internationally recognized bodies.





EQUATE Petrochemical Company

EQUATE Petrochemical Company  
Olympia Towers, Salmiya, Ras Al-Ard,  
Block 2 , Salem Al-Mubarak Street ,  
P.O. Box 4733 , Safat 13048, Kuwait.  
[www.equate.com](http://www.equate.com)