

MTBE Stripping at an ENI Refinery

Problem

An ENI refinery required an effective system for the removal of MTBE from groundwater.

The initial conditions were particularly critical:

- **Flow rate:** 48 m³/h
- **Inlet MTBE:** 414 mg/L
- **Required limit:** ≤ 8 mg/L
- **Objective**
- **Ensure operational continuity, maximum reliability and a significant reduction of the contaminant.**

This is a highly complex challenge that only a few in the world are able to accomplish.

Solution

We designed and built a **high-efficiency stripping plant with dedicated software** optimized for the removal of VOCs from contaminated water.

The solution integrates:

- Water pre-treatment system to adjust the pH and remove suspended solids
- Stripping column sized for high MTBE concentrations
- Optimized air/water system to maximize mass transfer
- Automatic control of operating parameters
- Exhaust air treatment compliant with regulations

A compact, robust plant designed for continuous 24/7 operation with low operating costs.

Results

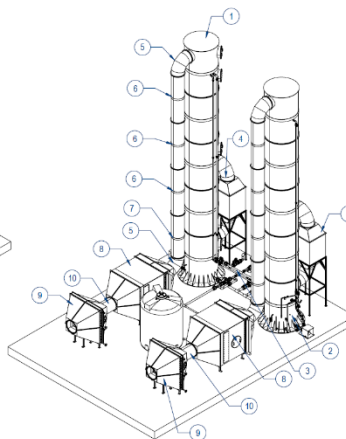
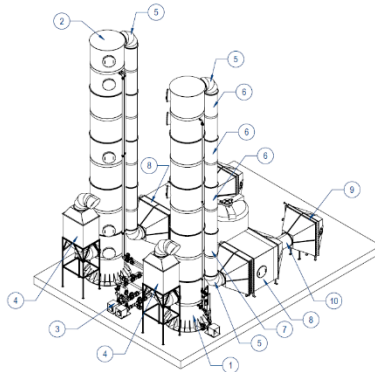
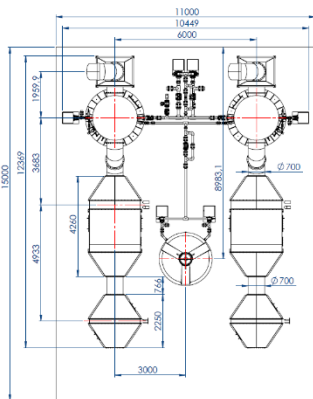
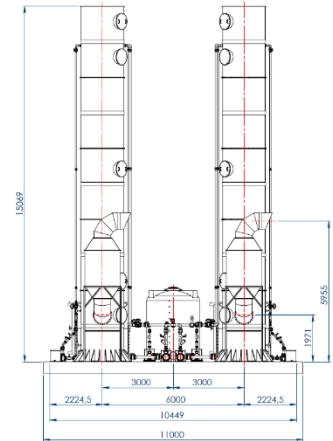
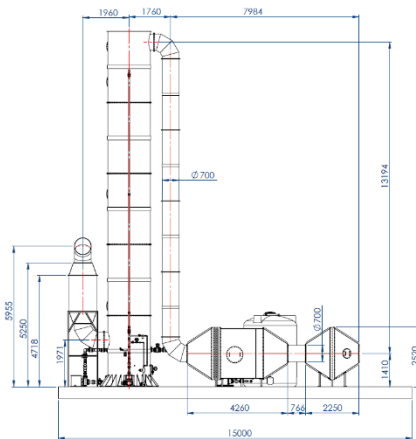
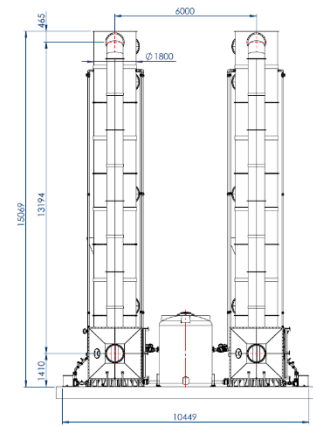
The plant far exceeded the required targets:

- **Outlet MTBE:** < 1 mg/L
- **Removal efficiency:** > 99.7%
- **Operational stability guaranteed even at full load**

Value for the Client

- Environmental compliance fully achieved and a decisive factor in the choice of the plant
- Drastic reduction of environmental risk
- Scalable and replicable technology
- Simple management and minimal maintenance
- Over 40% savings on water disposal costs

MTBE Stripping Columns



Pos.	Q.tà	Descrizione	Dimensione	Materiale / Disegno
10	2	Duto tra batterie	-	06.4-00-C-58-24
9	2	Batteria di Riscaldamento	-	08.0-00-A-58-24
8	2	Batteria di Condensa	-	07.1-00-A-58-24
7	2	Calata 02	-	06.3-00-C-58-24
6	6	Calata 01	-	06.2-00-C-58-24
5	4	Chiavo 90° Ø700	Ø700	06.1-00-C-58-24
4	2	Stenotrova	-	05.0-00-A-58-24
3	1	Assemble	-	03.0-00-A-58-24
2	1	Torne 02	-	04.0-00-A-58-24
1	1	Torne 01	-	02.0-00-A-58-24

Cliente:	Bernardinello	Comessa:	58-24
Oggetto Lavoro:	Impianto Stripping	SCALA:	1:80
Titolo:	Assemble Generale	Redatto:	Ing. Bruni
Rev:	09-D-00-A-58-24	Approvato:	Ing. Bruni
00	20/08/2024	Descrizione:	Generale
		Redatto:	Ing. Mazzini
		Controllato:	Ing. Bruni
		Approvato:	Ing. Bruni

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Stripping Column Calculation Diagram

