

# SOIL-THERM HIGH PERFORMANCE CHLORINATED OXIDIZER SYSTEMS



## SOIL-THERM ISTD Oxidizer System

- Trailer: 8.5'x28' bed, 22k GVWR
- Soil-Therm 2010-CLR, Direct Fire Burner, Custom Design
- Stainless Oxidizer Shell (24" o.d.)
- Heat Exchanger, Shell & Tube, 310SS
- Dual Extraction Blowers, Roots 615 with VFD's
- Quench Scrubber, Inco 625
- Packed Tower Scrubber, Al6XN
- Propane, 300 gals On-board
- Propane Vaporizer, 50 gph
- Scrubber Recirculation Pump
- pH and Conductivity controls
- Touchscreen w/ 8GB Datalogger
- Remote Monitoring & Control via iPhone or iPad
- First Out Alarms Via Text & Email
- Stainless Piping & Ducting



## SOIL-THERM AEROSPACE TECHNOLOGY

Since 1990, SOIL-THERM has been designing and building CVOC thermal oxidizer systems using aerospace combustion technologies derived from US Defense Dept ramjet and scramjet engines. The Founder of SOIL-THERM was trained in high speed flight engine technologies that have been adapted for superior toxic liquid and vapor destruction applications. SOIL-THERM's patented *Jet-THERM* combustion process offers far greater flexibility with higher operating performance than any other oxidizer on the market. SOIL-THERM oxidizers are much smaller, more energy efficient, and achieve much higher destruction efficiencies at lower operating temperatures.

## EPA TREATABILITY STUDY (Jan – May, 2014)

SOIL-THERM's *Jet-THERM* technology was selected for a high profile EPA Treatability Study due to its compact size and high flow capacity to 1200 cfm. The entire oxidizer and scrubber treatment system was installed on a single trailer, allowing for quick mobilization and installation at the project site. The SOIL-THERM oxidizer system was built to destroy off-gas vapors from ISTD electric heating of highly viscous organic wastes at the site, consisting of high Benzene, H<sub>2</sub>S, CVOC's, and heavy organic compounds.

## TREATABILITY STUDY RESULTS:

The SOIL-THERM system demonstrated that Benzene is destroyed >99.99% from 1630 – 1700°F with a Retention Time of only 0.19 seconds. Typical oxidizers require 1800°F with 2.0 seconds Retention Time and consume twice as much supplemental fuel. SOIL-THERM's CVOC aerospace oxidizer system is proven to be the superior choice.

## Project Performance Summary:

Operating Flow: 200 - 1100 cfm  
Operating Temp: 1500 – 1750°F  
Oxidizer Velocity: 65 - 85 fps  
Retention Time: 0.19 seconds  
Fuel Usage (700 cfm): ~650,000 btuh

## Destruction Efficiencies:

Benzene: >99.998%  
H<sub>2</sub>S: >99.99%  
Toluene: >99.999%  
Chlorobenzene: >99.9%  
Naphthalene: >99.9%

Verified: EPA TO-15 Lab Data, 5/2014

## For More Information:

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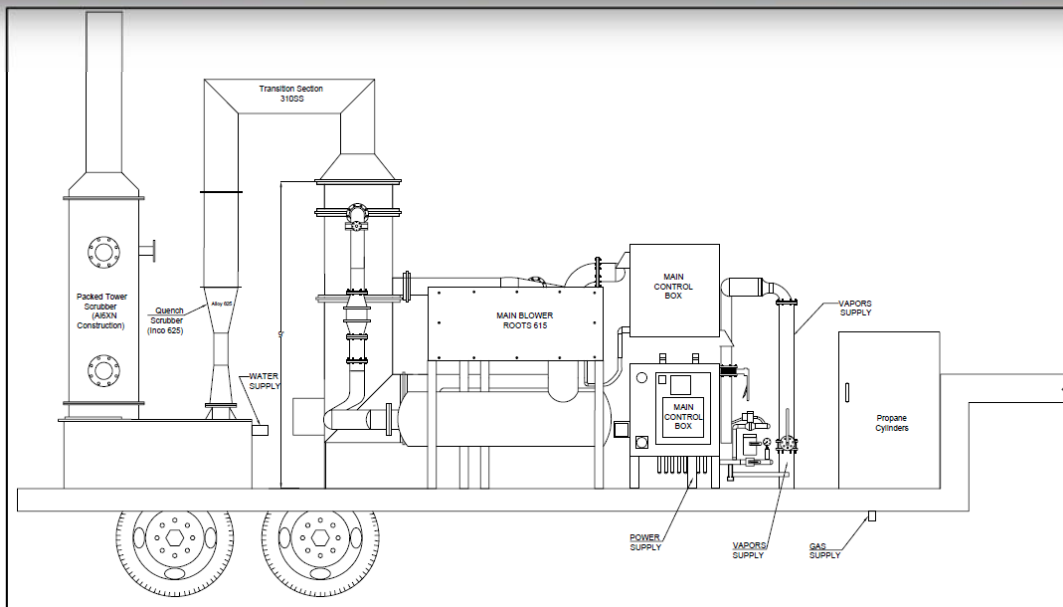


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# SOIL-THERM Aerospace Technology CHLORINATED OXIDIZER SYSTEMS



SOIL-THERM is the designer and manufacturer of Hi-Performance CVOC oxidizer systems. The system above is a Model 2010-CLR with custom features including Jet-THERM extreme turbulence burner with Oxidizer, Heat Exchanger, and fully automated scrubber systems with quench and packed tower. The system is capable of processing up to 290 lbs/hour CVOC's, fast setup and startup, and easy to operate. Many options are available.

