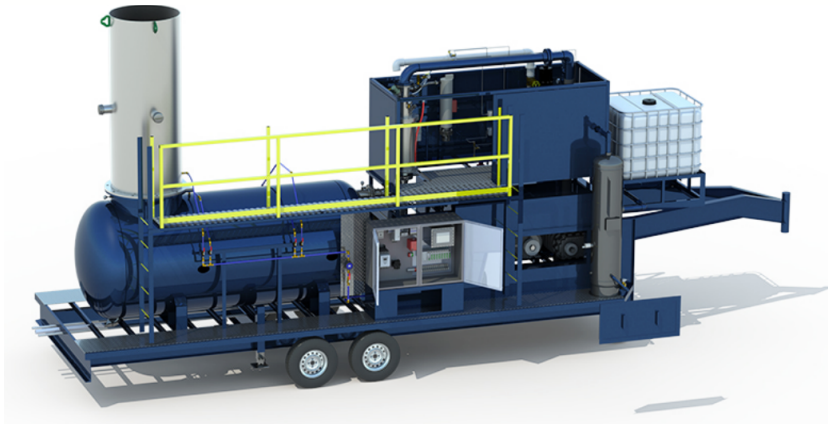


EVA

THE INNOVATIVE EVAPORATOR

HIGH EFFICIENCY TECHNOLOGY
REQUIRING LESS ENERGY
COMPARED TO STANDARD BOILERS
AND PLASMA TECHNOLOGIES

- Small footprint
- Require less downtime to clean evaporation area
- Can be remotely operated
- Ability to operate on raw site gas
- Uses direct-fired, hi efficiency technology, as opposed to standard boilers & high energy plasma technologies
- No fine filtration of the raw feed water or chemical pre-treatments required
- Generates a smaller volume of waste product and no added chemicals required
- In some instances, the unit's smaller volume waste stream is of value in O&G completion operations or for use in making "slicer" highway de-icing mixtures.
- Passes emissions requirements
- Overall CAPEX is significantly less compared to similar technologies



EVA was created in response to the growing challenges facing companies as they confront increasing costs and impending state regulations on their wastewater disposal. EVA will help to dramatically reduce wastewater transportation from disposal wells, recycling facilities and off-site treatment.

EVA units are skidded, portable, and harness direct flame evaporation technology onsite to treat high TDS waters while reducing wastewater volumes in operations. Direct flame evaporators utilize wellhead gas to drive a significantly lower cost compared to mechanical vapor recompression devices. EvAbTech can reduce wastewater volumes by as much as 85% - 98% and concentrate the feed water up to 250,000 ppm TDS.

High TDS feed water flows into the EVA unit and around the outside of a heated reaction chamber in order to preheat the water and keep the external piping temperature cool. The preheated feed water then flows through an annulus at the top of the reaction chamber creating a thin film of water around the internal wall which is exposed within the reaction chamber to a direct flame. Approximately 85-98% of the volume of water is vaporized into high quality steam and gas exhaust. The steamed gas exhaust will be expelled through an integrated separator and scrubber into the environment. Any residual organics found in the feed water are flashed off in the reaction chamber.

APPLICATION

- Source: High TDS, Landfill Leachate, or Produced Water
- Flow rate: 4 - 10 gpm
- Temperature: 30 - 120 F
- TDS: 10,000 mg/l to 200,000 mg/l
- Gas Usage: 75,000-125,000 cfpd (Low to High Operation)
- Gas Pressure: >15psi required (20 + psi preferred)

Experts In Water

THE EXPERTISE TO CONSULT BUSINESSES ON COMPREHENSIVE WATER SOLUTIONS

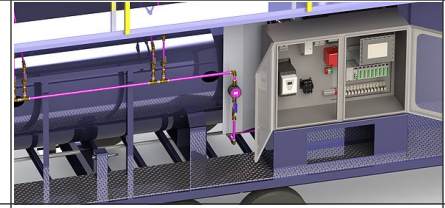
SPECIFICATIONS

Skid Dimensions	35' 6" by 8' 6" with stack down for transportation 13' 4" H with stack raised 16' 4" H
Skid Weight	4,500 lbs
Collection Tank	975 gallon (23 bbl) 8'4" in diameter open top fiberglass tank
Flow Rate Low (estimated)	4-10 gpm
Flow Rate High (estimated)	4-10 gpm
Gas Line	NPT 2" with regulator 12-15 psi, 5MM BTU/hr
Gas Quality	Natural Gas, 15 lb; Propane
Feed Water Line	NPT 2"
Power Supply	480 VAC 3 phase 100 amp service (60-70 amp operation)
Feed Water Pump	Centrifugal self-priming group
Control Panel	PLC with Ethernet
Flow Meter	Integrated ultrasonic flow meter
Effluent Water Temperature	160-200°F

PROCESS FLOW

Waste to be treated is re-pressurized and filtered before entering the burn chamber. Feed water flows around the outside of a heated reaction chamber in order to pre-heat the water and keep the external piping temperature cool. The pre-heated feed water then flows through an annulus at the top of the reaction chamber creating a thin film of water around the internal wall which is exposed within the reaction chamber to a direct flame. Approximately 85-98% of the volume of water, depending on TDS level and gas quality, is vaporized into high quality steam, constituents of combustion, solids and water. These are expelled into an integrated separator with steam and combustion constituents sent to the stack and solids and liquids into storage for reuse or disposal. Any residual organics in the feed water are flashed off in the reaction chamber, including VOC's. The effluent mixture is typically 50% solids and 50% 10 lb. water.

Particulate matter in the vapor stream will be reduced using an integrated scrubber after the separator. This will allow for the unit to meet the PM emissions requirements for the site. Non-PM emissions are controlled using a gas scrubbing system and proper combustion.



EVA HAS A LOWER EQUIPMENT COST COMPARED TO SIMILAR TECHNOLOGIES.

Unlike traditional boilers, EVA does not have to be shutdown at frequent intervals (2 days to 2 weeks dependent on water quality) or need to be acid washed.

EVA is able to treat frack water on-site helping to reduce overall OPEX associated with the expensive transport of frack water to remote disposal well sites.

ABOUT ABTECH

AbTech offers innovative solutions for Stormwater Management and Industrial Water Treatment. AbTech integrates its own advanced technologies along with third-party technologies and systems to provide customers with effective and economical solutions. AbTech products include advanced filtration media technologies and various water treatment systems.

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