



# Case Study # 110

## Ionizing Wet Scrubber (IWS) Removes Both Acid Gas and Submicron Particulate

A major company in the chemical process industry recently upgraded their liquid waste incinerator to a higher capacity. After reviewing current technologies, they chose Verantis' IWS™ pollution abatement system based on their previous successful experiences with this product. The same customer has three major incinerators that all use ionizing wet scrubbers to remove acid gases and fine particulate that can include various heavy metals such as antimony, lead, and zinc.

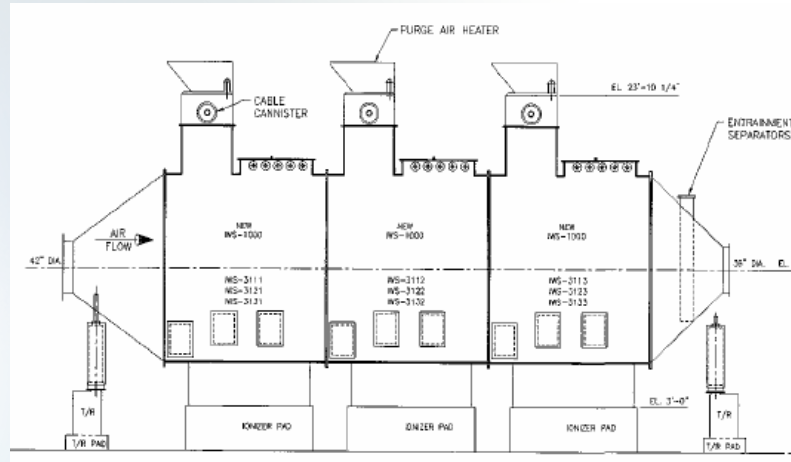
The original system had been in operation for over 20 years and was upgraded with an additional IWS™ stage to meet new regulatory requirements for particulate. IWS® systems are capable of achieving outlet particulate loadings below 0.001 gr./DSCF. The unique design of the IWS® combines the particulate removal capabilities of a WESP with the gas scrubbing capabilities of a packed crossflow scrubber. Each unit is modular and pre assembled for ease of installation and multiple units can be staged in a series, parallel, or both to achieve very high removal efficiency for the toughest submicron particles such as SiO<sub>2</sub>. The IWS™ also has a very low pressure drop compared to other traditional wet particulate scrubbers such as venturi systems and can be easily retrofitted to existing equipment trains. Pilot equipment is available for field testing.

Product Literature: (click on links to take you to the literature)

[IWS™/IPS® Scrubber Systems CCT-35](#)

[IWS Bulletin 12-19](#)

[IWS Pilot System](#)



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|----------------------------------|--|
| <b>Application</b>               | Liquid Waste Incineration                                    |
| <b>Exhaust Volume</b>            | 64,400 ACFM  |
| <b>Exhaust Temperature</b>       | 147°F saturated  |
| <b>Exhaust Pressure</b>          | 3.0" W.C.<br>(<1.0 per stage)                                |
| <b>Contaminant</b>               | HCl, Cl <sub>2</sub> , HBr Submicron Particulate             |
| <b>Removal Efficiency</b>        | Acid Gases > 99.9%<br>Particulate > 98%<br>(<0.003 gr/ DSCF) |
| <b>Scrubbing Solution</b>        | Dilute NaOH solution   |
| <b>Materials of Construction</b> | FRP & Polypropylene  |

