

# Perma-Fix Environmental Services



## *Energy Recovery Plan*

*Presented By: William Smart*

# What is a B.I.F?



From 40CFR260.10 Definition: Boiler means an enclosed device using controlled flame combustion and having the following characteristics:

- (1) (i) The unit must have physical provisions for recovering and exporting thermal energy in the form of steam, heated fluids or heated gases: and
- (iii) While in operation, the unit must maintain a thermal energy recovery efficiency of at least 60%...and
- (iv) The unit must export and utilize at least 75% of the recovered energy...



# *The Hoover Dam lights up Las Vegas!!*



# How much energy does DSSI recover?



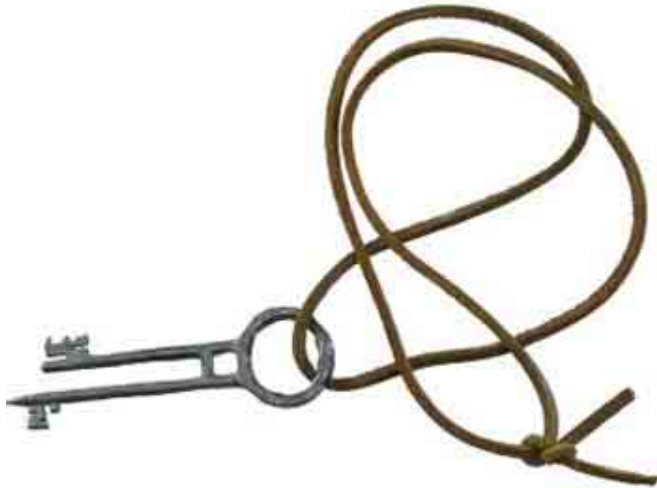
Last year DSSI produced 436,000 kw-h of electricity while only utilizing the boiler 30% of the time!

This would translate into providing enough electricity for approximately 15 homes for a year!!



# B.I.F. vs. Incinerator

## *What's the Difference?*



# Energy

# Recovery

As referenced in [McCoy's RCRA Unraveled](#), boilers and industrial furnaces burn wastes for energy recovery. The primary purpose of an incinerator is to burn for destruction.

# Go **GREEN!**



## Incineration



**VS.**

## Energy Recovery



# ***Typical Waste Streams that = Energy Recovery***



Liquids, Solvents, Oils and Paint



***These liquids have high energy values!***

# ***Polymer Based Absorbent***





# Typical Waste Streams that = Energy Recovery



Carbon has a high energy value!



# Solids for Energy Recovery



## Liquefaction Process:

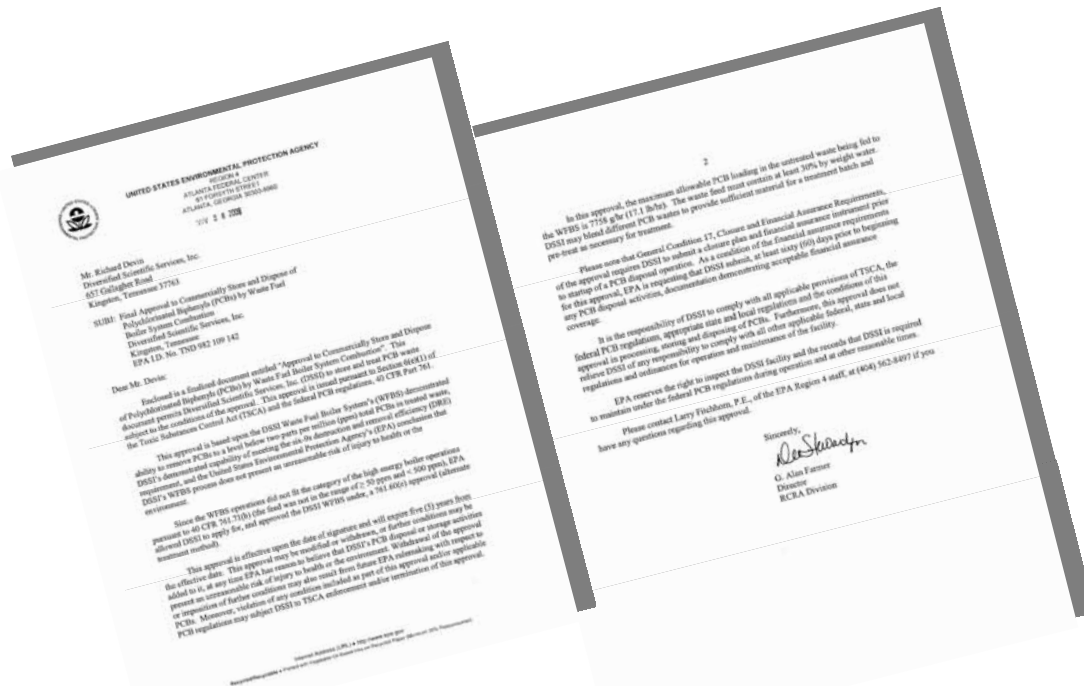
Organophosphate Resins  
Organophosphate Substances



# Diversified Scientific Services is the Source!



EPA has authorized DSSI to process PCB's (TSCA regulated waste) for energy recovery. Any of the aforementioned waste streams may be TSCA regulated.



# Environmental Awareness



We all have choices to make!

Toss



n??

RECYCLE??  
you...

# Environmental Awareness



The same can be asked  
Or used to generate  
for your waste!!  
electricity??

Would it be possible to use waste to generate electricity??

