A stylized, semi-transparent human head in profile, facing right. Inside the head, a complex molecular model is visible, composed of various colored spheres (yellow, grey, red, blue) connected by lines, representing a chemical structure. The head is set against a soft, pinkish-purple glow.

# Southern California Conversion Technology Conference

July 29, 2016

# Paragon & MWS Are Pleased to Present The CoronaLux Technology



- Built in CA
- First deployed in CA
- Exhaustively tested in CA
- Operating in the SCAQMD for one year
- Only facility Destroying all types of RMW in CA

# True Conversion Technology: The Way The System Works

Pharmaceutical, trace chemotherapy and incidental pathological wastes are first converted into molecules, a gas ... or smoke via "Pyrolysis"

This gas contains VOC's and other combustible compounds

The VOC's are then introduced into a secondary "Cold Plasma Torch" chamber  
The VOC's undergo free radical oxidation

The remaining material and particulates are then destroyed as they flow through the vent stack.

Byproducts are CO<sub>2</sub> and water vapor



**"Flux capacitors are old school...!"**

**Harnessing the power of radicals is the answer....!"**

**The Professor**

**-Back to the Future- 1985 Movie**

## What We Used To Do



Pharmaceutical Waste

About 20% of our RMW that by CA law needs to be destroyed via incineration or high heat, was collected, packaged and shipped from LA to Houston, TX or Baltimore MD for Incineration

1,546 miles to 2,646 miles respectively

Mileage: 7 miles per gallon of fossil fuel  
(~200 to ~400 gallons per trip)

These trips generate up to 16 tons of CO<sub>2</sub> per roundtrip

Added risk of spills / accidents exist via long haul transportation

CoronaLux treatment dramatically eliminates emissions vs. Incineration

# What We Used To Do

## Incineration: Theory vs. Practice

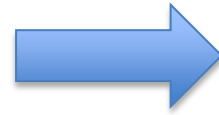
In theory, a properly designed incinerator should convert simple hydrocarbons into nothing other than carbon dioxide and water

Incineration is heavily dependent on operating practices and generates more greenhouse gasses than any destruction technology

Even the best incineration operations sometimes suffer from:

- Incomplete combustion – emissions
- Equipment failure – many moving parts
- Human error, operating limitations, fugitive emissions
- Rapid changes in the type of waste
- Hazardous , fly ash, and bottom ash

# True Conversion Technology: To < 5% Residue



# What We Have Achieved



Comparison Of Key Differences Between Typical Incinerator Emissions And The CoronaLux System In CA			
	Typical Incinerator	Results From The CoronaLux	California Limits
Carbon monoxide (lb/year)	146 or <b>6X</b>	<b>21.4</b>	
NO <sub>x</sub> (reported as NO) (lb/year)	1,185 – 4,253 or <b>33X</b>	<b>35.9</b>	
Dioxins Ex: 1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin (lb/year)	Not Available They Do Not Report	0.00000012199 ( 1.2 E-8 ) <b>( ~ 1/20<sup>th</sup> Of CA Limit)</b>	0.0000002122 ( 21.2 E-8 )
Furans Ex: 1,2,3,4,6,7,8,9-Octachlorodibenzofuran (lb/year)	Not Available They Do Not Report	0.000000007259 ( 7.2 E-10 ) <b>( ~ 1/300<sup>th</sup> Of CA Limit)</b>	0.0000002226 (2226 E-10)
Hydrocarbons (VOC's) (lb/year)	22 – 117 or <b>11X</b>	<b>&lt; 2.08</b>	

# What We Have Achieved

## Comparison Between Car Emissions\* And The CoronaLux Based On 2080 Operating Hours Per year

Hydrocarbons	769.69 lb./year	2.08 lb./year (<.003%)
Carbon monoxide	5,745.2 lb./year	21.41 lb./year (<.004%)
NO <sub>x</sub> ( <i>reported as NO</i> )	382.09 lb./year	35.93 lb./year (~.09%)

Automobile Exhaust



At 50-60 mph: 1 mile ~ 1 min.

Roof Top Vent From CoronaLux



> 99.99% Clarity Through Exhaust

*\* Reference: "Light-Duty Vehicle, Light-Duty Truck, and Medium-Duty Passenger Vehicle – Tier 2 Exhaust Emission Standards". Emission Standards Reference Guide. United States Environmental Protection Agency. 14 November 2012.*