Hydroxyl Generators
Agenda

The Technology (Briefly)

The Products

The Applications

Case Studies

Costs

The Source

Questions
Mother Earth

- Troposphere
- UV Light
- Moisture
- Hydroxyl Radicals

The Earth is cleansed by Hydroxyl Radicals (OH) that are created by multi-frequency UV light interacting with the moisture in our atmosphere.
Two Technologies on the Market Today

**Photo-catalytic reaction to H2O**
- Uses multi-frequency UV light interacting with moisture to create Hydroxyl Radicals (OH)
- Replicating the Earth’s environment
- Safe for Humans, plants, pets.
- Neutralizes odors, bacteria, viruses, mildew, mold and VOCs

**Photo-Catalytic reaction to Ti**
- Uses single-frequency UV light source and a catalyst (typically titanium) to generate O3 (Ozone)
- Proven carcinogen in humans
- Destroys leather, synthetics and plants
- Effective on Odors
FDA APPROVED – MEDICAL USE

December 2014 510(K) Clearances

DEVICE: ODOROX(R) IDU/RX (TM) IN-DUCT MODELS, ODOROX(R) IDU/RX (TM) MOBILE
DISINFECTION UNITS, ODOROX(R) SLIMLINE/RX (TM) SLIMLI

HGI INDUSTRIES
ATTN: CONNIE ARAPS, PhD
2055 HIGH RIDGE ROAD
BOYNTON BEACH FL 33426

510(k) NO: K133800 (Traditional)
PHONE NO: 561 735-3701

SE DECISION MADE: 19-DEC-14
510(k) SUMMARY AVAILABLE FROM FDA

THE ONLY FDA APPROVED HYDROXYL GENERATOR ON THE MARKET
Odorox Products

The only Hydroxyl Generators on the market using multi-frequency UV light source and H2O.

Available in a multitude of solutions
Remediation

Units that are pre-engineered for portability and remediation of temporary issues. Units include the Boss™, Boss XL3™ and DeconScrubber™

- Mildew
- Smoke
- Food Odor
- Flood
- Chemical Spill
- Mold
- Bacteria control
- Guest Odor
Installed Solutions

Units that are engineered for installation and continued use. Units include the IDU™, MDU™ Slimline™ and SANX™

- Guest Room
- Restroom
- Lobby
- Pool/Spa/Sauna
- Exercise Room
- Locker Room
- HVAC System
- Food Prep Area
- Laundry Facility
Industrial Applications

Units that are factory engineered for larger industrial and commercial applications. Units include the MVP16™, Aircurtain™ and MVP48™

- Ballroom
- Kitchen
- Trash Room
- Bar
- Service Area
- Meeting Room
- Recreational Area
Application & Impact

Stonehill College
Football Locker Room

- Odor Source is Constant
- Sweaty pads, shoes, towels etc
- Carpeted Flooring

IMPACT: Odor traveled outside of locker room to gym and offices.
Process

Stonehill College
Football Locker Room

- Site Visit
- Diagnose Cause of Odor
- Open Locker Doors, Close entry/exit doors
- Position Odorox at far end of room
Results

Stonehill College
Football Locker Room

• Within Hours there is a noticeable difference

• The following day players…” It took the smell out of my pads!”

• Day 2: The room is back to neutral.
From: Leith, Mary Joan  
Sent: Friday, November 08, 2013 10:38 AM  
To: Pigeon, Peggy  
Subject: Thank facilities for us  

Dear Peggy,

I hope I’m not exulting too quickly, but the odor-sucking machine that facilities installed on the second floor of the SU (RS department) seems to be doing the trick. We can breathe for the first time in a week!

I’ll keep my fingers crossed that this continues to be the case!

Thank the guys for us!

Best,

Mary Joan

Mary Joan Leith  
Associate Professor and Chair  
Department of Religious Studies  
Stonehill College  
320 Washington St.  
Easton, MA 02357
Application & Impact

Local College Dorm Room

- Mildew Odor-student asks to move out of room
- Room is gutted-no visible mold behind walls/ceiling/hvac unit
- Mold test-confirmed amount of mold to be unsafe(Aspergillus/Penicillium)

IMPACT: Unhappy student, time, labor, materials...$$$
Process

Local College Dorm Room

• Site Visit
• Diagnose Cause of Odor
• Place Odorox facing running HVAC unit
Results

Local College Dorm Room
• Mildew Odor no longer present
• Mold Test after Odorox: Mold spores Aspergillus/Penicillium no longer present.
• College Environmentalist (self proclaimed mold nerd) is giddy from results!
Application & Impact

North Shore Apartment (1200 sq. feet)

- Apartment Turnover - smoked in for 7 years (& apparently never opened a window!)
- Walls/Ceiling stained with nicotine.
- Cigarette smoke smell is pungent (even w/ carpet removed)

IMPACT: Unit cannot be re-rented until smell is 100% removed.
**Process**

**North shore Apartment**
- Site Visit
- Diagnose Cause of Odor
- Removal of outlet covers, open cabinets/drawers, pull out appliances, remove ceiling fixtures, wash walls
- Place Odorox facing running HVAC unit
Results

North Shore Apartment

- Following 48 hours of Odorox running, cigarette smoke odor is no longer present.
- Unit is turned over and rented the following month.
Application & Impact

Coors Brewing Bottling Plants

• Would like to operate 24/7/365

• Due to live bacterial yeast used in production, plant needs to be disinfected

• Process takes 4 hours per day

IMPACT: Plant yields significantly less due to 4 hour daily shutdown
Process

Coors Brewing Bottling Plants

- Odorox rep visits site
- Diagnosis’ challenge
- Odorox IDU (In Duct Unit) is recommended throughout plant
- IDU Units are installed
Results

Coors Brewing Bottling Plants

- Odorox IDU’s installed successfully
- Plant Produces and Bottles 24/7/365
## Costs

### Manufacturer Suggested Retail Prices

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<thead>
<tr>
<th>Item Description</th>
<th>Price</th>
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<tr>
<td>Boss™</td>
<td>$3,600.00</td>
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<tr>
<td>Boss XL3™</td>
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<tr>
<td>Decon Scrubber™</td>
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<tr>
<td>HAO™️ Aura™️</td>
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<tr>
<td>ID U™️️ S</td>
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<tr>
<td>MDU™️</td>
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<td>San X™️️ (Back)</td>
<td>$1,775.00</td>
</tr>
<tr>
<td>Sh Lin e™️️ (Back)</td>
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### Rental Prices

<table>
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<tr>
<td>Decon Scrubber™️</td>
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</tr>
</tbody>
</table>

**11 – 15 day purchase justification**
The Source

Boston area dealer - bill@cg solutions llc.net
(617) 455-1686

New England distributor - Steve@KleenSky.com
Questions?

• What questions do you have for us?

Clean Green Solutions
bill@ cg solutions llc.net
(617) 455-1686