Engineered Water: Reducing Your Chemical Footprint?

Green Clean Schools
May 27, 2015

healthy schools campaign

About Healthy Schools Campaign

Upcoming Webinars

June 23, 1-2 p.m. CST
Floor Care in your Green Cleaning Program

July 15, 1-2 p.m. CST
Learn from the Leaders

August 11, 1-2 p.m. CST
Green Cleaning Award for Schools & Universities

September 8, 1-2 p.m. CST
Infection Control in a Green Cleaning Program

Logistics

- Webinar will run approx. 1 hour
- A recording of the webinar will be available online
- Please take 2 minutes to complete the survey at the end

Join the Discussion!

- Follow @healthyschools for the latest on our schools, environment, and education.
- Tweet #greenclean to share your thoughts!

Q&A Session

- Q&A will be held during the final 15 minutes
- Ask questions through “chat” in the lower right side of your screen

Today's Speakers

Heidi Wilcox
Field Specialist
Toxics Use Reduction Institute at Umass Lowell

David Holly
Director
The Ashkin Group, LLC.

Christine Lovejoy
Custodial Coordinator
University of Minnesota, Duluth

What is Green Cleaning?

Cleaning to protect health without harming the environment

Why do we care about green cleaning?

1. Helps students stay healthy and learn
2. Protects the health of custodial staff
3. Increases the lifespan of facilities
4. Preserves the environment
5. Fiscal responsibility

Green Clean Schools

- **5 Steps To Green Cleaning**
- **National Summit** (July 30-31)
- **Leadership Council**
- **Education**
- **Quarterly newsletter**
- **Assessment Tool**

www.greencleanschools.org

Green Clean Schools Participating Organizations

- American Federation of Teachers
- American Association of School Administrators
- Association School Business Officials International
- Council of Educational Facilities Planners International
- Green Cleaning Network
- International Sanitary Supply Association
- National Association of Charter School Authorizers
- National Association of School Nurses
- National Association of State Boards of Education
- National Clearinghouse for Educational Facilities Planners
- National School Plant Management Association
- Parents for Public Schools
- Public Education Network
- And more!

2014 Green Cleaning Award Winners

Grand Award: Green Cleaning Excellence
University of Washington, WA

K-12 Winners:

First Place
Blue Valley School District, KS

Honorable Mention: New Program
Clarke County School District, GA,

Honorable Mention: Sustainability
Virginia Beach City Public Schools, VA,

College/University Winners:

First Place
University of Michigan, MI, Plant Building & Ground Services

Honorable Mention: Evaluation
Stony Brook University, NY

Honorable Mention: Sustainability
University of Minnesota, Duluth, MN

Apply!

GREEN CLEANING AWARD
for Schools & Universities

asumag.com/green_cleaning_award

…or just search for "green cleaning award"

AMERICAN SCHOOL & UNIVERSITY

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Heidi Wilcox

Toxics Use Reduction Institute

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The TURI Laboratory

Green Cleaners & Equipment Performance Testing ***& MORE***

How We Fit Into the Industry

Heidi Wilcox /TURI Lab Specialist

TURI
TOXICS USE REDUCTION INSTITUTE
UMASS LOWELL

TURI Laboratory Mission & Goal

- Assist facilities in finding safer cleaning chemicals & processes that are:
  - *Economically feasible*
  - *Perform as well or better*
  - *Improve EH&S*
- To evaluate /compare performance of cleaners & equipment, R&D, consulting, formulation & more
- Aid companies in selecting processes & systems to facilitate better, safer cleaning
- Share information on effective cleaning methods and processes to help move industries forward….

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TURI LAB FACTS….

- Working in less toxic alternatives for 22 yrs
  - Located at UMASS Lowell
- Janitorial work about 15 years
  - Testing for third party certifiers
  - Working with manufacturers on products
  - Help promote good process & systems
  - Learn from the end users, work in REALITY
- Data does the talking, field work supports it
- Want to know what the industry needs
- Helping to supply data to industry

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Why a University Laboratory

- Non Biased – work to generate date
- Interested in data & what works. If there is not non biased data how do you trust a product
- Non profit, (if public) therefore money is not a driver
- Want to inform janitorial sector end users & help generate the data they need & want
- Resources – students, other scientists
- Work with national companies & trade assoc. for help

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What We've Learned Over the Years

- A lot of education is needed
  - Clean & removal of soil & microbes vs. Kill
  - Sanitize vs. disinfect, Smell does not equal clean
  - That many facility managers either;
    - Want to go green & less toxic but don't know how to start
    - Or just want bleach & to be left alone
- Great Formulation work is being done
- Excellent equipment is out there
- **Without consistency & repeatability of process then less toxic may not matter**

Technology in a Chemical World

- Sustainability is a main driver!!!
  - Life cycle issues
- ***Other Drivers – Chem. Exposure, Asthma, IAQ***
- Chemical Formulation has come a long way
  - As well as dilution and foaming systems
  - Can reduce the use of chemicals significantly
- Tech can take us to a new place…..
  - Onsite production, steam, microfiber, bucketless mops, hands free restroom cleaners,

Equipment Testing in the Lab

- Floor Scrubber
  - Small & Large
- Engineered water
  - Mineral based
  - ozone
- Battery back pack vac
- Steam
  - Large & small units
- Hands Free Restroom Cleaners

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Innovative Cleaners & Technology

- Organic cleaners with probiotics,
- Onsite generators of cleaners, sanitizers & disinfectants
  - Hypochlorous solutions
  - Mineral based
  - Sustainable
- More water based solutions
  - Steam, hands free restroom
  - Floor machines & pads that do not require cleaner
- Microfiber, bucketless mops, waterless urinal retrofits & door handle protectors

Subset of technology & “Green Cleaning”

- Engineered water – H2O plus
  - Water is a chemical – so not chemical free
    - often contains minerals, hard or soft, acidic or alkaline
  - Using water with technology to make less toxic cleaning systems with out without the addition of non synthetic or green cleaners
    - Steam – **temperature**
    - Onsite generators – sustainable
    - Hands free restroom cleaners - mechanical
    - Microfiber, not just a cloth or pad but tech

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Pros and Cons of Technology

Pros

- Sustainable
- Less toxic exposures
- Less reoccurring costs
- Less chemicals to store
- Less chemicals to ship
- Workers often like new toys
- Improves IAQ
- Improves cleaning often when coupled with repeatable process

Cons

- Up front capital cost, sometimes a battle to get
- Training required
- Change in process
- Need storage for equipment
- Uses electricity generally
- Many times worker resistance

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How Do You Know Something Works

- Testing using industry standards to produce data, paid for, third party testing.
- Testing is reproducible & not a fluke
- Analytical methods are used
  - ATP meters – trend tool to show cleaning efficacy in field and lab. **LIMITATIONS**
  - Gloss meters
  - Black light, white glove, plate growth
- Field work & antidotal info & data in field in addition to 3rd party, no biased testing

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How Do You Know if You Are Green?

- If your state has an EPP program use it
  - Most use third party certified products
- Check to see what regulation or executive orders exist for your state or the federal govt.
- Use products from the Third Party Certifiers
  - Green Seal, Ecologo, EPA Safer Choice
  - **There is some toxicity and performance testing done**
- Use your National Resources
  - Healthy schools campaign, The Ashkin group, TURI Lab, IEHA, ISSA, PC4HS & many more

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How to Deal with Technology

- Stay current on what is coming out
  - Read trade magazines, trade shows
- Ask for the 3rd party testing data to gauge effectiveness using standardized testing
  - Use anecdotal information as an addition
- Test the equipment in your system yourself
- Implement repeatable process in your system so new tech can easily be inserted

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Questions?

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TURI Lab Field Specialist

Phone 978 934 3249
Website: www.turi.org/laboratory
Testing Database:
www.cleanersolutions.org

THANK YOU

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David Holly

The Ashkin Group LLC.

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David Holly

The Ashkin Group, LLC

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Ashkin Group

Consulting group focused on Green Cleaning & Sustainability

Steve Ashkin

- Over 25 years industry experience
- “Father of Green Cleaning”
- Recently inducted into the Green Cleaning Hall of Fame

David Holly

- Over 30 years industry experience
- Involved in every facet of the cleaning industry
- 15 years with the Ashkin Group

What We Do

We work with:

- Manufacturers
- Distributors / Buying Groups
- Cleaning companies – BSCs
- In-house / property management companies / private companies
- Local / state / federal government agencies
- Schools
- Health care
- Any organization that is interested in improving their green cleaning operations or sustainability goals

How We Do It

Define goals

Develop strategies

Identify opportunities

Develop sales / implementation plans

Provide field support

Develop metrics

Quantify results

What's Happening

Green Cleaning is real and here to stay – But, there are more opportunities

- Impacts on energy – more efficient equipment, operations, day cleaning…
- Impacts on environment – waste reduction, "zero footprint"…
- Impacts on water – better "dry cleaning", engineered water, grey water

Engineered Water

Several technologies

Not a new technology, but new to the cleaning industry

Not anti-chemical

Not “chemical free” – Engineered Water

Why Is this Important?

Impact is far beyond reducing chemical use

- Life cycle of a traditional cleaner (every step consumes water)
  - Extraction of raw materials and transportation to processing plant
  - Creation of intermediate products and transportation to next facility
  - Manufacturing of the final product, packaging, transportation to distributors
  - Transportation to end-user or BSC (additional transportation to job site)
  - Dilution with water on site, waste product to sewer system
  - Packaging materials into waste stream
- Life cycle of engineered water
  - Cold water enters unit, produces cleaning product, waste is potable water
  - No packaging, transportation, and significantly less water use

What's Coming?

Exciting time for our industry

Many new technologies and ideas

For Engineered Water

- New technologies
- Grey water

Thank You

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Christine Lovejoy

University of Minnesota, Duluth

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UMD

UNIVERSITY OF MINNESOTA DULUTH

Driven to Discover

Facilities Management Custodial Division

Green Cleaning Program

Christine Lovejoy

Custodial Coordinator

A Great University on a Great Lake!

Our Green Story

- Philosophy prior to 2007 “do what is right”
- 2007 – Developed an “official” Green Cleaning Program
- 2008 – created Office of Sustainability
- 2010 – LEED Platinum awarded for Bagley Classroom Building
- 2014 – Green Cleaning Award for honorable mention

Early Adopters

- ActiveIon hand held units
- Floor polishing system
- Composting
- ECH2O machines
- Microfiber cloths
- Constantly asking “what is the latest technology?”

Homework

- Researched our options
- Input from local “innovator” using solutions
- Tested cleaning solutions from transport units
- 3 month trial period
- Compared solutions to traditional chemicals
- Request for proposal process
- Comparison of units available and pricing

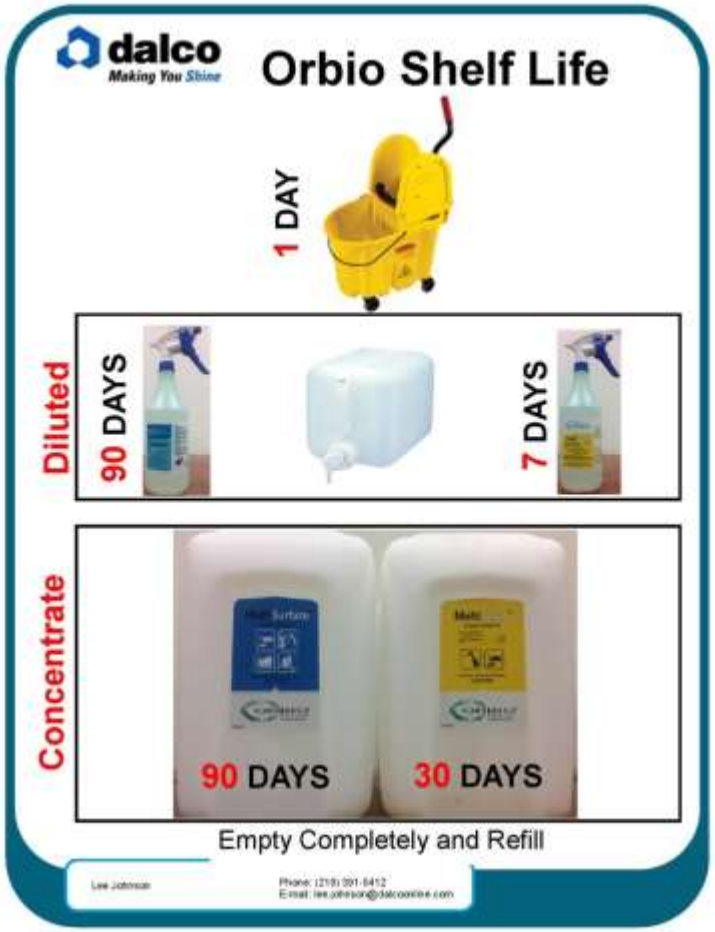
Simple Break Even Analysis

- 22 months
- Based on the cost of chemicals at the time
- Other factors to consider:
  - Simplified cleaning process
  - Health and safety
  - Eliminates packaging
  - Significantly reduces transportation
  - Lower cost to clean

Benefits of Electrolyzed Water

- “Best carpet cleaner”
- Removes residue, such as duct tape and stickers
- “I can’t tell the difference”
- “I LOVE using this (micro-solution) in my restrooms”
- Only solution to remove curry stains
- Cost effective

Challenges



- Logistic challenges
  - Areas without elevators
  - “Off-campus” locations
  - Access to units/satellites
- Placement for maximum utilization
- Managing the “inventory”
- Laggards
- Skeptics

Going Forward

- Green Cleaning Program built on Orbio
- Updating Standard Operating Procedures
- Adjusting to meet the needs of the campus
- Educating the campus about the great things we are doing

Q&A Session

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Thank you!

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