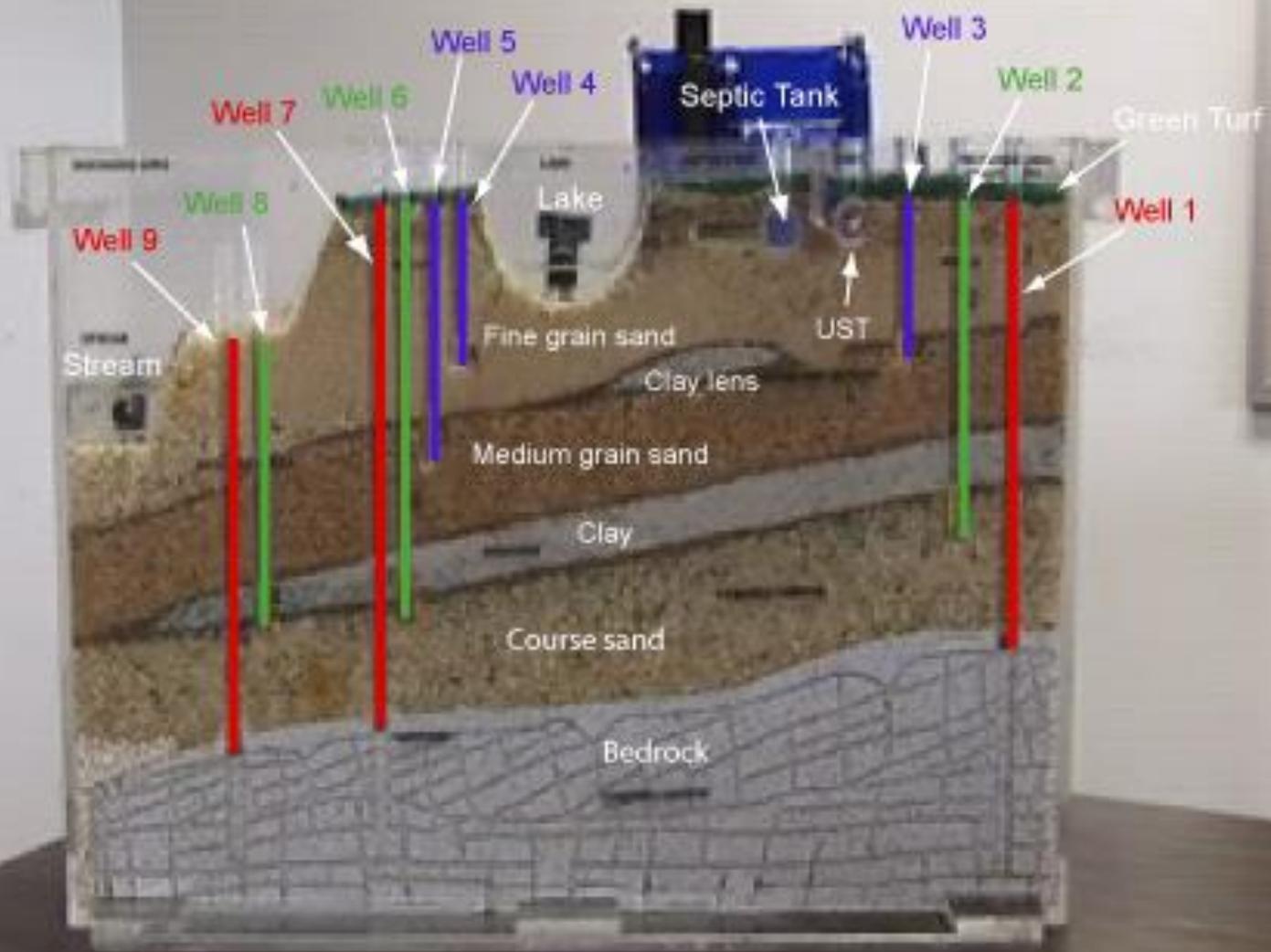


# **Creative Solutions to Reduce Common Environmental Risks**

**Debra S. Swartz**





# Groundwater Model Video

# Protect Wellheads



# Artificial Rocks to Protect Wellheads



# Seal Abandoned Wells



# Common Pollutant Pathways Inside & Outside the Maintenance Building

Floor Drains & Storm Drains – Where do they go?



# Parts Washers & Waste

- Traditional parts washers use mineral spirits for cleaning.
- Used mineral spirits are considered a **hazardous waste.**



**BMP - Eliminate the hazardous risk by using an aqueous based parts washer.**



# What's the problem?



**BMP – Keep a storm drain cover near the fuel station.**



# Fuel Storage BMPs

- Install a break away valve on fuel hoses.
- Install overfill protection devices.
- Install secondary containment for above ground fuel tanks.



# Fuel Storage BMPs

- Keep secondary containment drain closed.
- Routinely empty rain water from containment.
- Filter water when necessary.



# Install Several Spill Kits: on spray rig, in pest storage room & mix/load area



- Personal protective equipment (rubber gloves & protective suit)
- Shovel, broom, dustpan & tarp
- Absorbent materials, such as absorbent clay, "socks" or "pillows"
- Closable, sturdy plastic container (labeled "Spill Kit")

# BMP – Have a Plan!

Harbor Shores GC, Benton Harbor, MI



■ SZ = Safe Zones



# BMP – Practice your plan! Spill Drills at Forest Lake CC



Fritz Mc Mullen, GC Superintendent

Ed Osterman, Environmental Committee Chair



# Equipment Washing Stations



# "Closed Loop" Washing Station



*Separation Systems -*  
**“Dog Leash” Method**



on turfgrass

move often



*Separation Systems -*

# **"Catch and Release"**

*(Superintendent engineered)*

*Separation Systems -*

# **“Catch and Release”**

*(Superintendent engineered)*



# “Catch and Release” system



# Dealing With Clippings

- Spread over turf
- Compost



# Pesticide Mix/Load & Storage















10/13/2008



# Mixing & Loading Area BMPs (*regulatory components = \**)

- Adjacent to pesticide storage
- Impervious floor *and* no floor drains \*
- Contain volume of the spray rig \*
- High volume fill capacity
- Shut-off valves \*
- Anti-siphoning device \*
- Spill kit \*
- Eyewash / emergency shower

# Pesticide Storage\* BMPs

- Adjacent to mix/load pad
- Secure area with proper signage
- Impervious shelving, walls & floors
- Adequate venting
- Spill kit
- Emergency numbers posted
- Eye wash station and shower
- Fire extinguisher

*\* regulations directed toward 'bulk' (>55 gal or >100 lbs) and 'hazardous' (see RCRA, and state guidelines)*