

Four years, 70+ farm visits...



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SEWAGE???

- Difficult to accept ‘industrial’ language
- Four kinds of ‘sewage’:
 1. Stormwater
 2. Nutrient rich water (feed solution, table wash water, subsurface drains)
 3. Low-nutrient process waters (e.g. boiler flue condensate, floor drains, planting line water, etc.)
 4. Domestic waste (washrooms, sinks, septic)



Do you know where the water goes?

- Most farms don't have a map of all water lines
- Stormwater is often mixed with other water
- Discharges on and off property can be compliance issues
- Local area can affect what BMPs are needed (e.g. soil type, receiving water body)



1. Stormwater

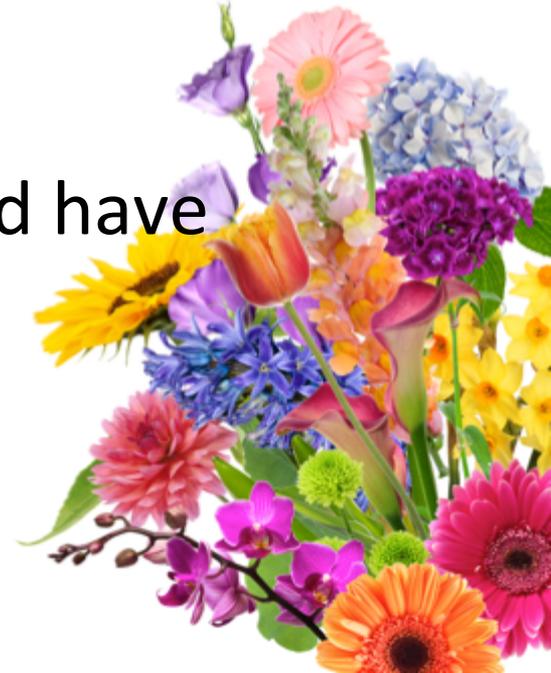
- Overflows off-property require a permit
- Can you separate stormwater from other waters?
- Streamlined permit option is NOT available if you have other waters combined with stormwater
- How much capacity do you have?
- Do you need a PTTW? (>50,000L on a peak day)
- Loading dock/parking lot water may contain contaminants





2. Nutrient Rich Water

- Best Management Practice = RECIRCULATE!
- This water can not reach surface water or groundwater
- Subsurface drain water can contain a lot of nutrients; have you tested yours?
- How much capacity do you have – do you have contingency/redundancy built in?
- How can you use technology and crop management to re-utilize the water and have zero waste?









3. Process Waters - Boilers

- Steam boilers
 - Blowdown water often discharged onto the ground
 - Wide range of chemicals, often contain “Moly”
 - Blowdown water is hot! Affects how you deal with it
 - Volumes vary depending on how boilers are used (heating vs. soil sterilization)
 - Must collect and dispose of this water safely
 - Some growers trying evaporation to decrease the volume





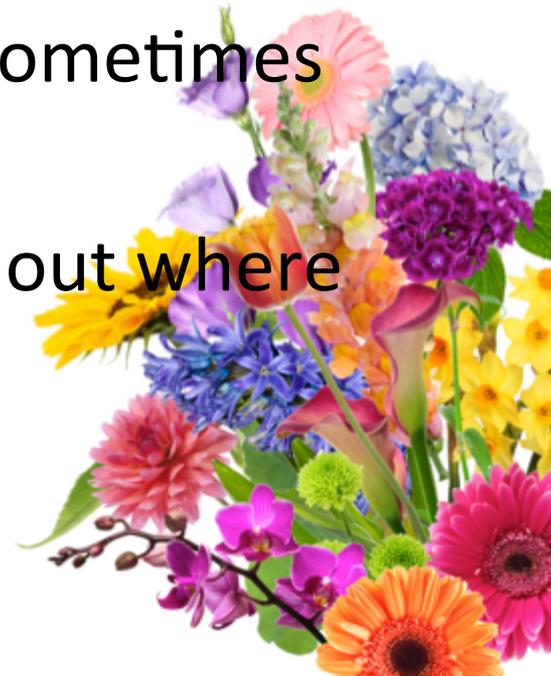
3. Process Waters - Boilers

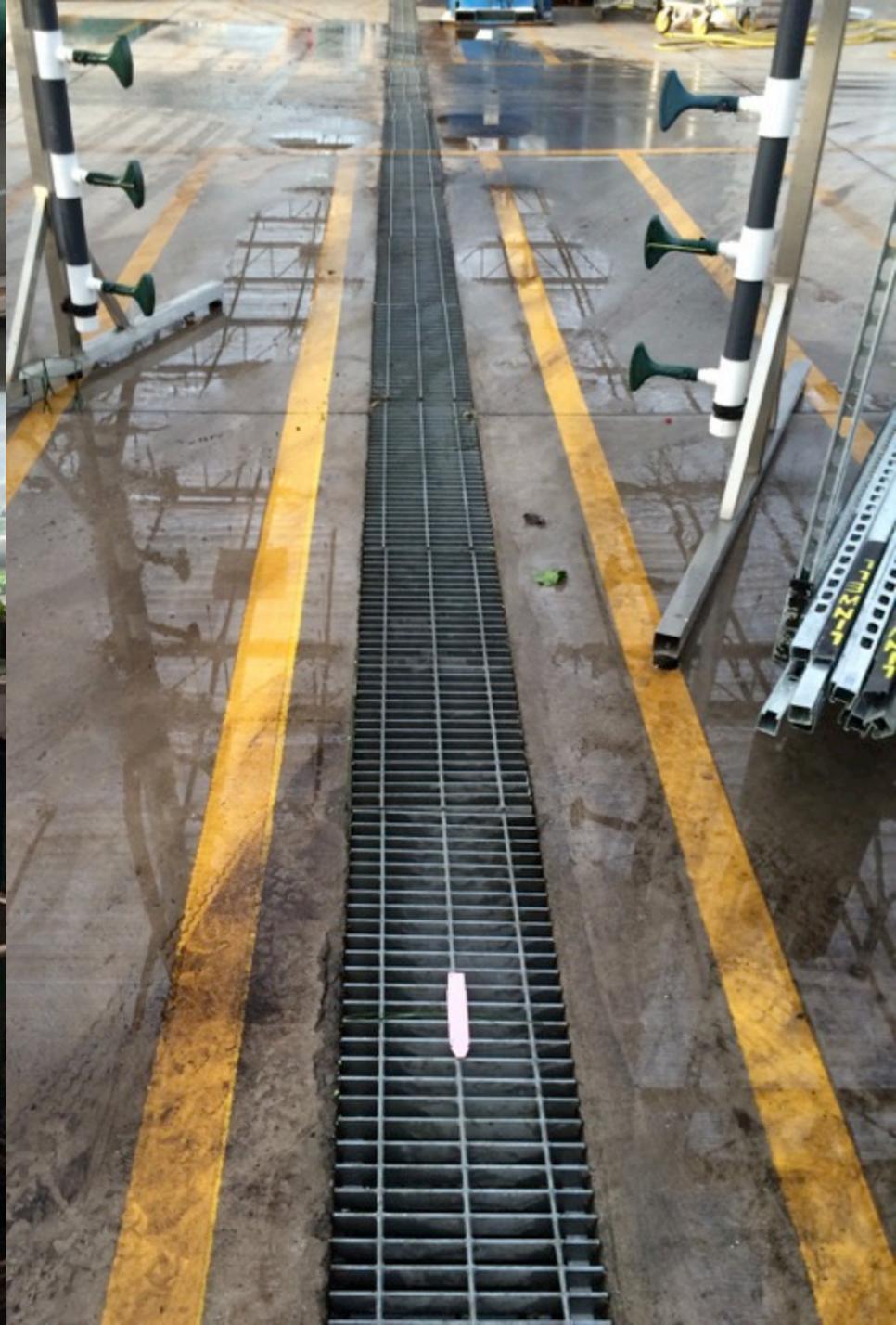
- Hot water boilers
 - Some boiler flues produce a lot of condensate
 - Often discharged onto the ground, or into fresh water cistern
 - While it can usually be blended in safely (low pH, some zinc), don't mix it with fresh storage



3. Process Waters – Floor Drains

- Floor drains can be a whole mix of things (planting line water, shipping/warehouse water, tray wash water, spills, etc...)
- In older farms, hard to know where the drains even go! (ask F&FC about a dye test)
- Sometimes not a lot of nutrients, and sometimes a LOT of nutrients or other chemicals
- TEST it...know what goes in, and figure out where it is going

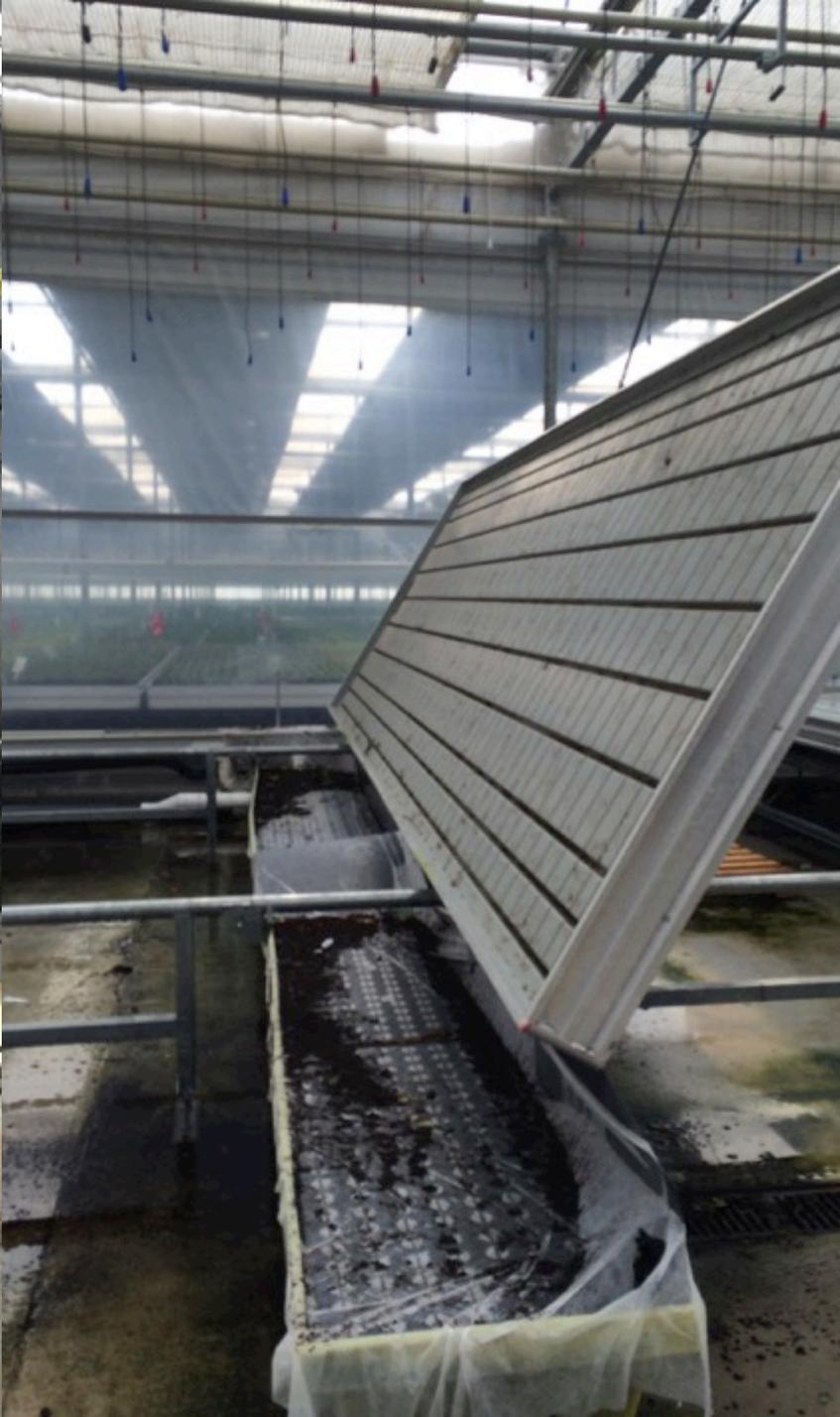




3. Process Waters – Table Wash

- Table washers can generate a LOT of water
- This water often goes to a ditch or onto grass
- Some farms recirculate this water (within the washing station)
- Other farms filter it and re-use it for production (but use fresh water to clean tables, and disinfect afterward with a 'leave-on' product)





3. Process Waters – Cut Flower Pails



- Volumes are low, but this water is often dumped on the grass or put into the septic
- Variety of products used in this water to preserve the cut stems
- Test the water – see how it can be re-used



4. Domestic Waste

- Septic capacity is critical
- Whole property (lot) included, so add the house usage if it's part of the same property
- Permit needed if $>10,000$ L /peak flow day
 - Usually reach this limit at >60 employees
- Be careful what you put in it! Must follow building codes



Conclusions

- Lots of cross-connections
- Leaks can be a source of nutrients in subsurface drainage
- Most farms need a permit for their stormwater, but other water types 'should' be managed on-farm
- Still need to increase awareness
- Need to take ownership & take ACTION!



Resources

- MOECC – Paul Sims is the greenhouse specialist out of London office
- Your engineer/consultant
- FCO Water Specialist
 - Will tour your farm and help you create an action plan
 - FCO website – check out the new Environment page under ‘Resources’



Resources

[http://www.flowerscanadagrowers.com/
environment-water-specialist-resource-page](http://www.flowerscanadagrowers.com/environment-water-specialist-resource-page)

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