



How to Train Your OWS Dragon!

Top 10 Training Tips for
Environmental Managers

Topics



- You, The Environmental Manager/OWS Dragon Trainer
- Dragon Training Grounds
- OWS Dragon Trainer Top 10 List:

You, Environmental Manager/ OWS Dragon Trainer!

You,

- Are responsible for a large territory,
- Have many and diverse environmental operations and compliance responsibilities; and wastewater O&M and discharge compliance is just one of them,
- You are not a wastewater treatment or OWS expert,
- You have a headache when wastewater discharge is non-compliant or there are system O&M problems,
- Would like to train your OWS Dragon and make that headache go away!



Dragon Training Grounds-Railyard



OWS Dragon Trainer

Top 10 List!



1. Fantasy Land Address: <math><30\text{ Mg/L O\&G}</math>
2. BMP's, Get it out! Keep it Out!
3. Get the solids out
4. Set my oil free! Do not emulsify! Do not emulsify!
5. All OWSs are not created equal
6. Coalescing media, the silver bullet that can kill you
7. See your OWS
8. Hear your OWS
9. Speak to your OWS
10. Don't let the track department design your OWS treatment system

#1 Fantasy Land Address: < 30 Mg/L O & G!



- Avoid Fantasy Land and NOV's
- Many OWS vendors claim treatment to 10 Mg/L
- Don't assume you will get better than 50-30 Mg/L
- API removes 150 micron oil droplet
- Incline removes 60 micron oil droplet
- Laboratory vs. Field Reality
- Salesman\$hip vs. Reality

#2 BMPs, Get it Out! Keep it Out!

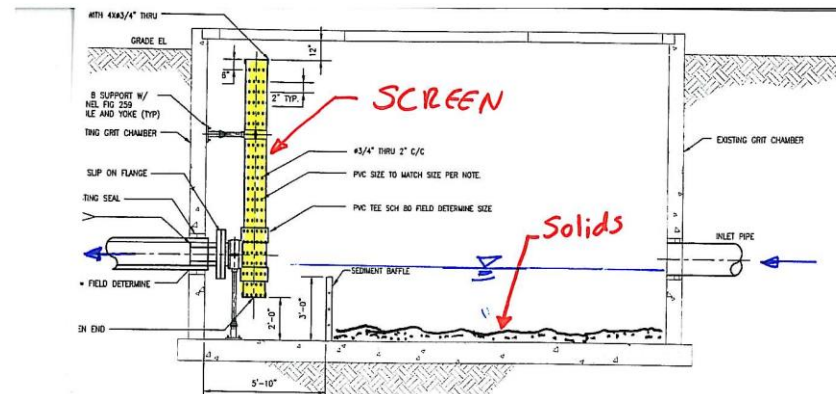
Practice BMPs: keep it out!

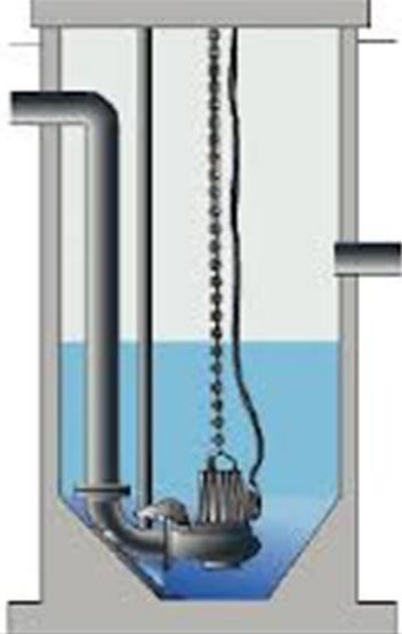
- Diesel
- Lube oil
- Retention tanks
- Sand
- Soap
- Hydraulic fluid
- Heavy grease
- Trash & etc.



#3 Get the solids out!

- OWS Killer No .1: Coalescing media sludge accumulation
- Solids + Oil = Sludge
- Locomotive Sand is the No. 1 source of rail yard solids
- Keep sand and solids out by BMPs
- Grit Chamber is a must! Cleaning a must!
- Trash Screen



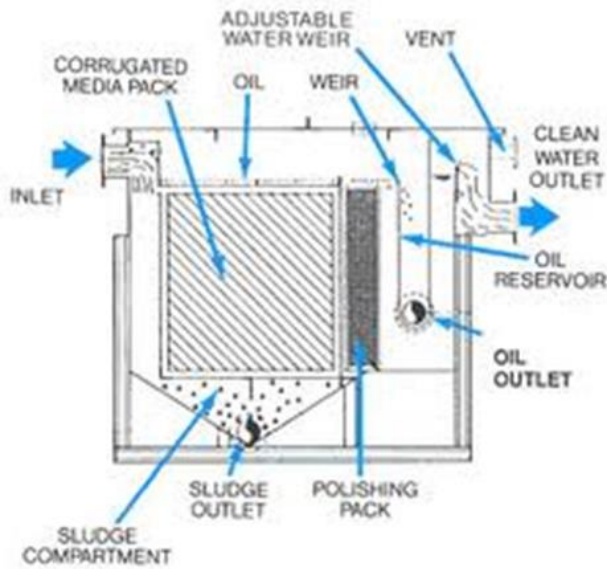


#4 Set My Oil Free!

Do not emulsify!

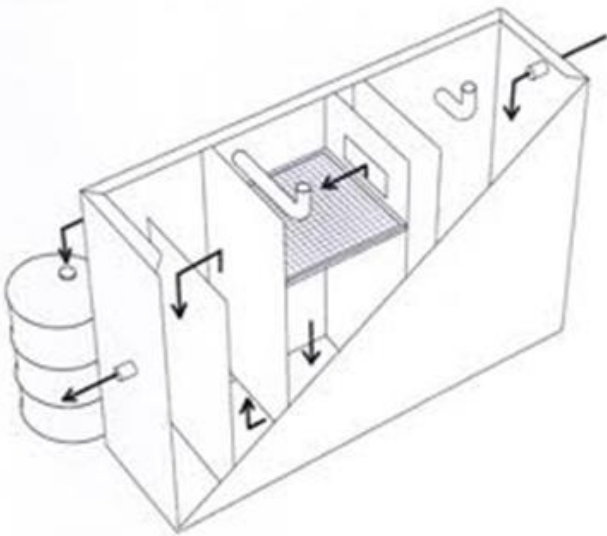
- An OWS will ONLY remove free oil!!!
- An OWS will NEVER remove emulsified oil!!
- Public Enemy No. 1 – Soap (chemical)
- Public Enemy No. 1 – Centrifugal Pumps (Mechanical)





#5 All OWSs are not created equal! Don't hate yourself in the morning!

- Inlet/outlet hydraulics
- Coalescing Pack
- Oil accumulation/removal
- Sludge accumulation/removal
- Instrumentation & Controls
- Access
- Materials of Construction
- Price \$ driven market
- Uninformed buyers

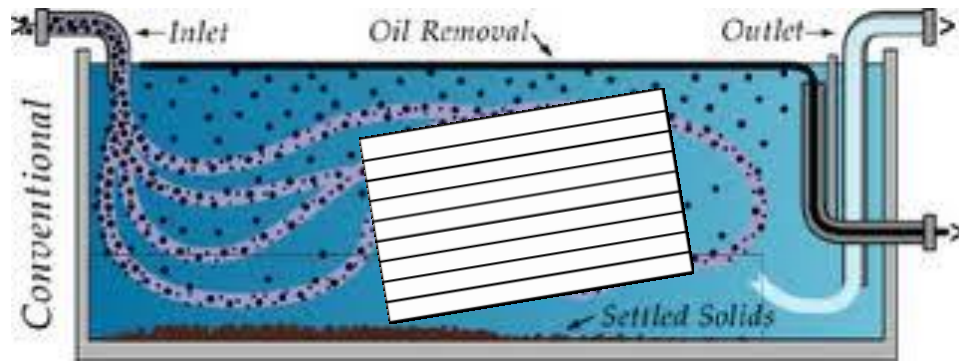


#6 Coalescing media, the silver bullet that can ricochet and kill you!

- API OWS

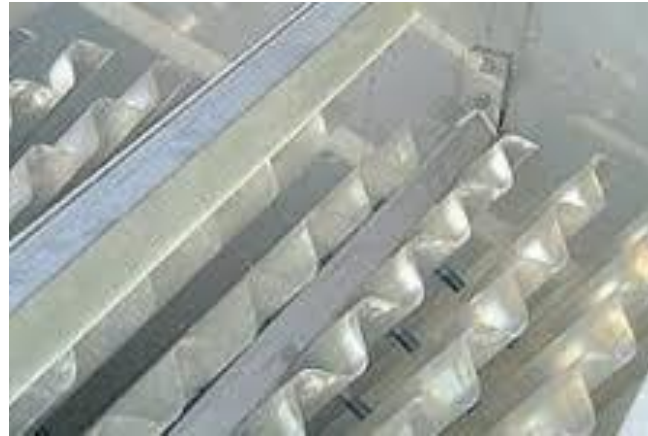


- Parallel Plate OWS



#6 Coalescing media, the silver bullet that can ricochet and kill you!

- Corrugated Plate Interceptor



- “Honey Comb” corrugated Packs

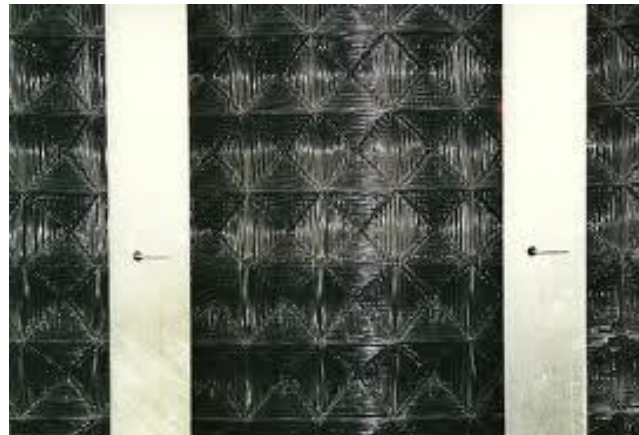


#6 Coalescing media, the silver bullet that can ricochet and kill you!

- Vertical tube coalescer



- Mesh pack (secondary coalescer)



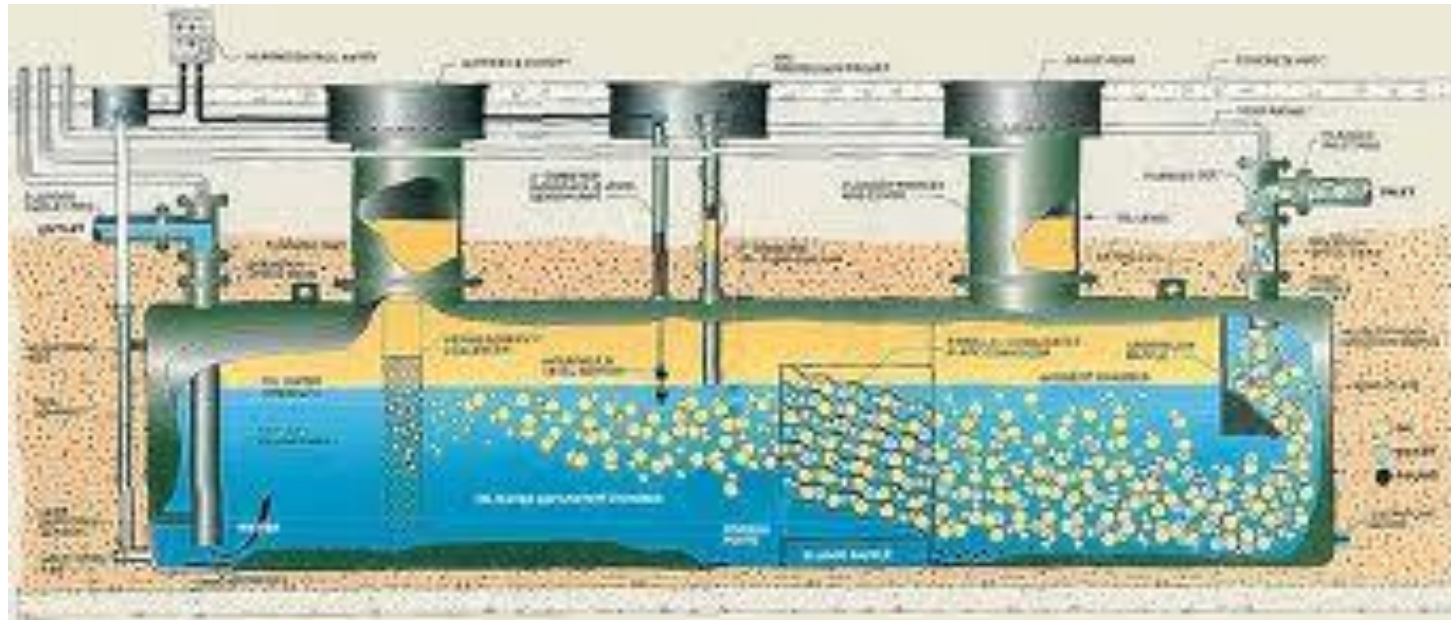
#6 Coalescing media, the silver bullet that can ricochet and kill you!

- OWS dragon training secret! Use a Cross-flow, inclined, flat plate, coalescing pack



#7 See your OWS!

- Which OWS will be maintained?
- OWS Dragon Training Secret: Access = Success!



#8 Hear (Understand) your OWS!

Often O&M staff

- Do not understand how an OWS works
- Have not, reviewed, nor can they find O&M manuals or drawings?

OWS Dragon training secrets:

Make sure your O&M staff

- Understand how an OWS works
- Have O&M manual and drawings

**Make it easy! Remove “structural barriers.”
Provide training.**



#9 Speak to your OWS!

- Most OWSs are operated digitally 0 and 1. 0 = Not failing. 1 = Failed
- Perform ongoing O & M (speak to your OWS) to avoid failure surprise, expense, and unplanned response!



#10 Don't Let the track department design your OWS treatment system!





Go train your OWS Dragon!

Q & A?



Thank You



OWS