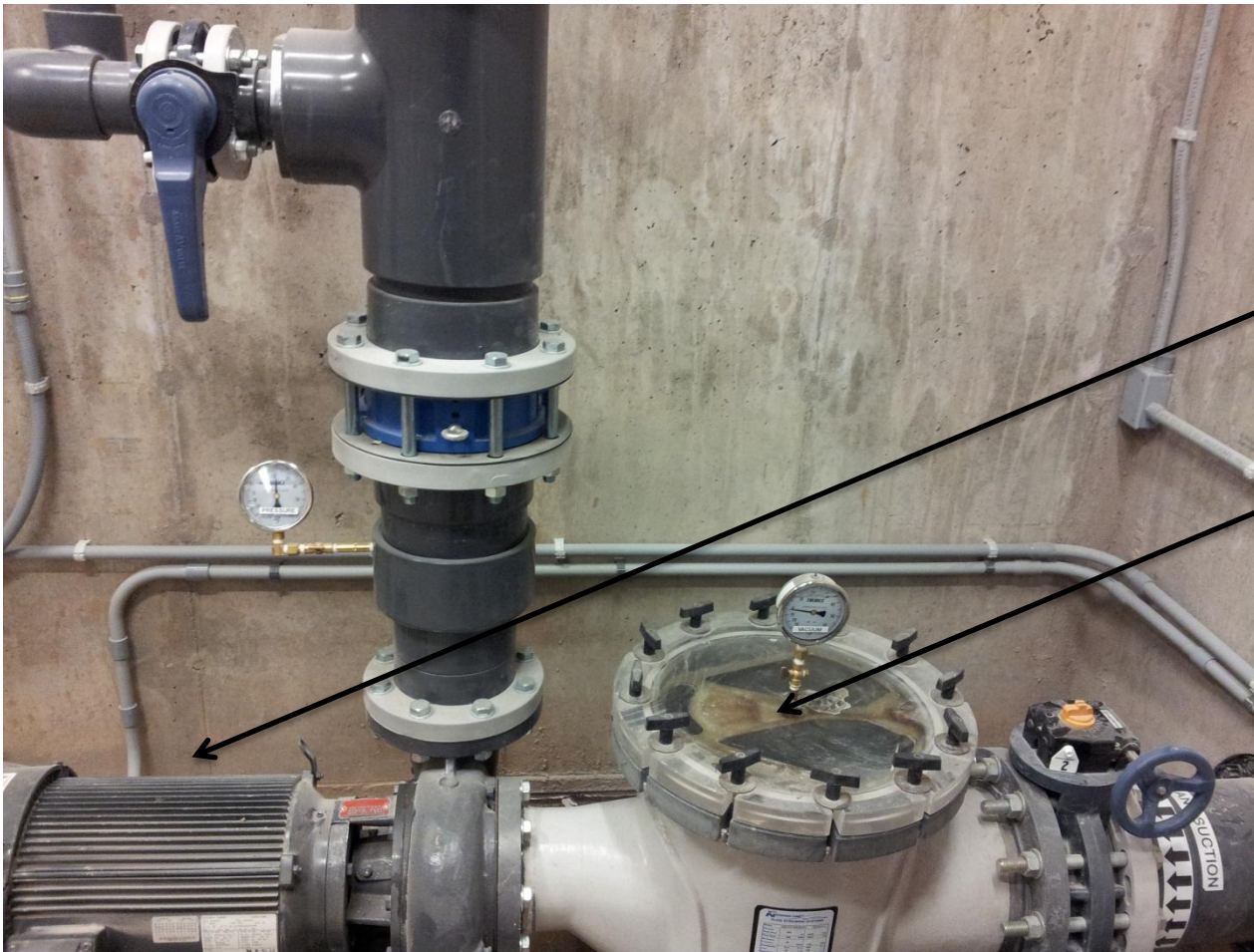


Pump Room Introduction

Where/What Stuff is

Pool Pump



Pump

Filter

First Round of
cleaning water
from surge tank

Pool Pump (PSI)



Vacuum should be "0"



Pressure should be \approx 21 PSI

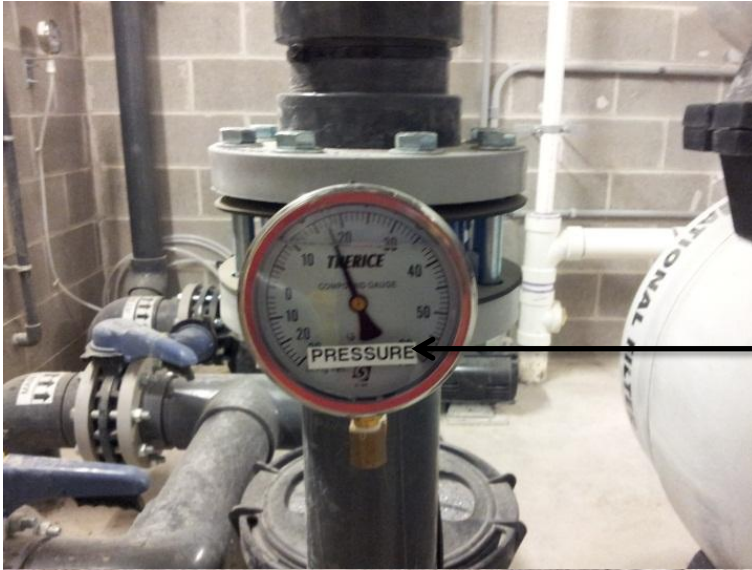
Spa Pump (PSI)



Filter

Pump

Spa Pump



Pressure should be \approx 18 PSI



Vacuum should be "0"

Sand Filters

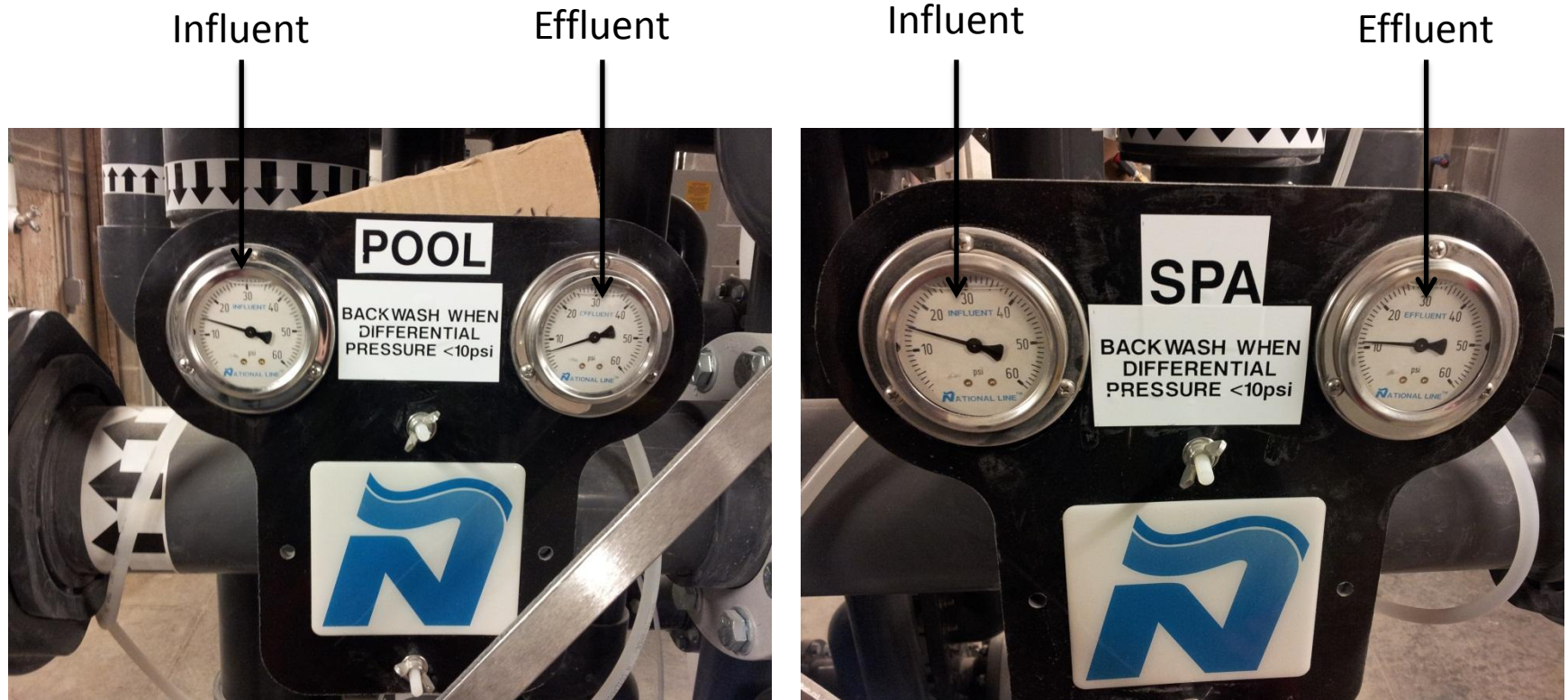
- Sand filters are the second step (after pump filter) in water cleaning
- There are 3 filters for the pool and 1 filter for the spa



Sand Filters

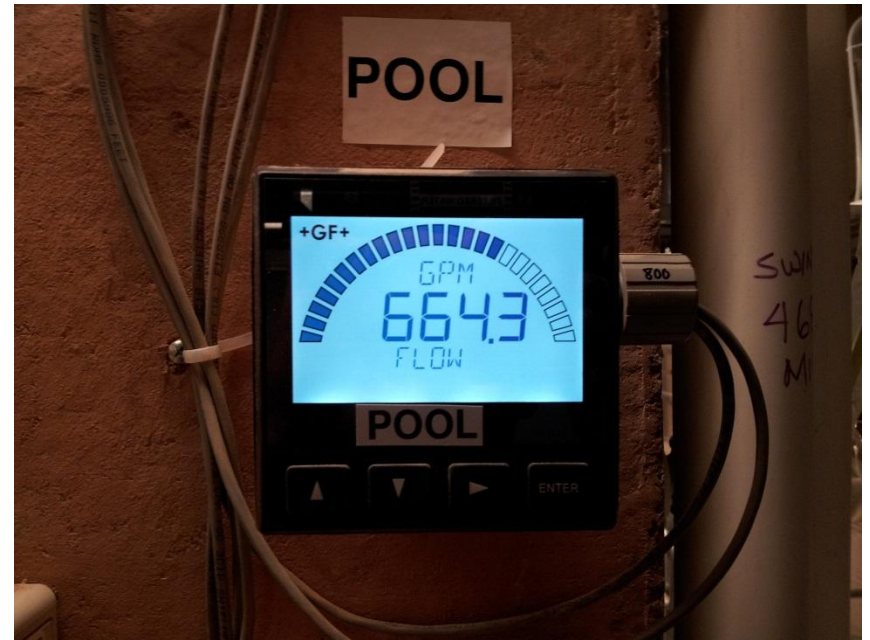


Filter Differential (Influent/Effluent)

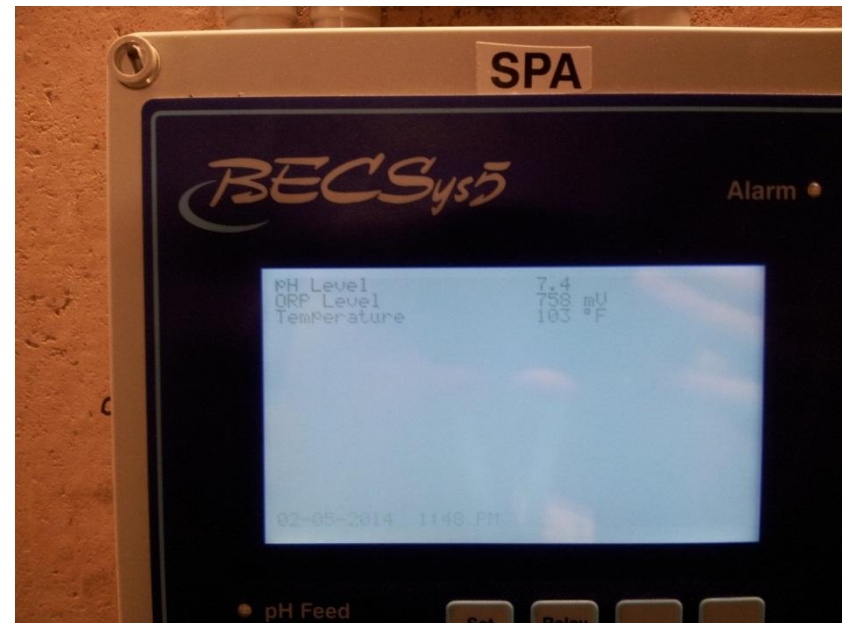
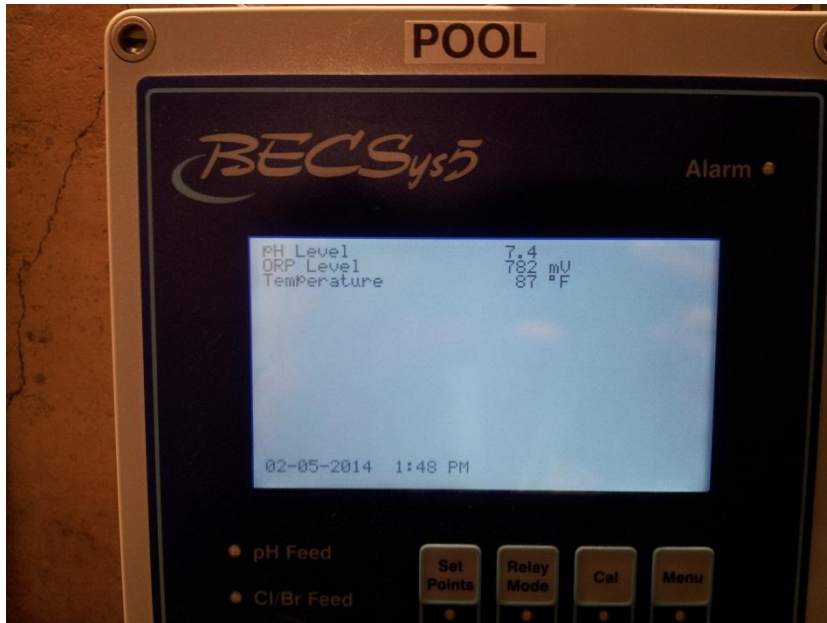


Backwash when the differential (influent minus effluent) is greater than 10 PSI

Gallons Per Minute (GPM)



Pool/Spa Control Panel (pH, ORP, Temp)

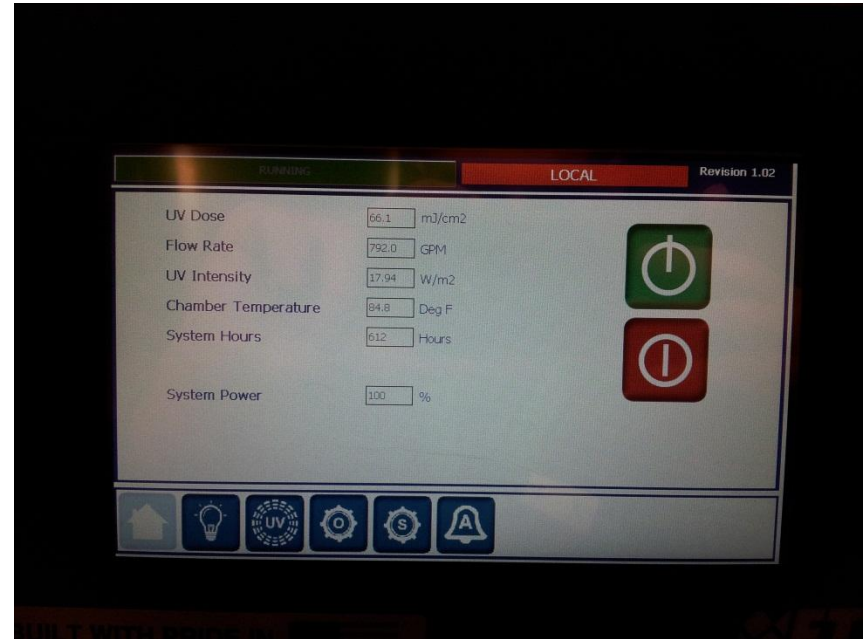


- pH should be 7.3 or 7.4
- ORP is variable (that is O.K)
- Temp should be 86-88 for pool and 101-104 for spa

Pool/Spa Control Panel (pH, ORP, Temp)

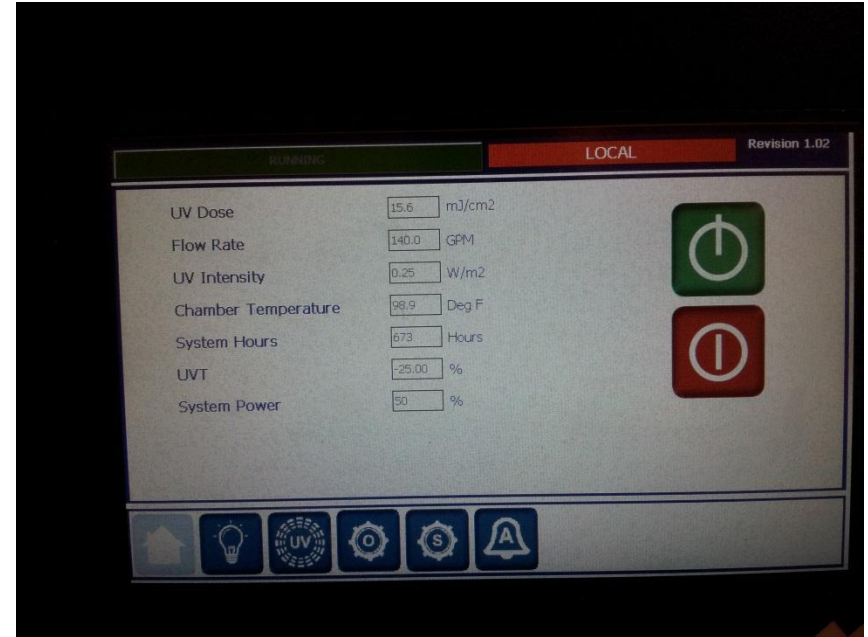
- When maintenance is required, alarm will be flashing on control panel
- There are two common alarms:
 - pH feed down! FAILSAFE
 - This most likely means change the acid
 - Chlorine/ORP feed down! FAILSAFE
 - This most likely means turn on the chlorine pumps

Pool Ultra Violet (UV)



- UV should be on and running all the time
- Light should be green
- Yellow light – Non critical alarm (Not a big deal)
- Red light – Critical alarm (try to reset but most likely needs attention)

Spa Ultra Violet (UV)



- The UV system is put in place as a third round of water cleaning
 - If the UV is broken, the pool/spa can remain open
- UV is put in place to control *Cryptosporidium* and make combined chlorine more manageable

Heaters

Top



Bottom



Spa Jet Supply



- Vacuum should be "0" (left photo)
- Jet power can be increased/decreased by rotating lever (right photo)
 - More power = lever is parallel with pipe
 - Less power = lever is perpendicular with pipe

Chlorine Room

- Chlorine, Sodium Bicarbonate, and Calcium is in here
- There are also spare parts for the pool and spare filters that need replacing



Chlorine pumps



- Pumps have switches that can be turned on and off
 - Spa pump should be left “ON”
 - Pool pumps should have one pump “ON” and one pump “OFF”

Acid Room

- Acid is added to pool to keep pH at 7.3
- Acid barrels need to be changed when empty (\approx weekly)
- ACID is DANGEROUS!!
- Wear proper attire when handling (Close toed shoes, pants, long sleeves, eye protection, and gloves)
- **DO NOT ATTEMPT TO CHANGE ACID UNLESS YOU HAVE BEEN TRAINED !!!**



Acid Pumps



- Spa (left) has one pump and pool (right) has two pumps
- All pumps should be turned “ON”

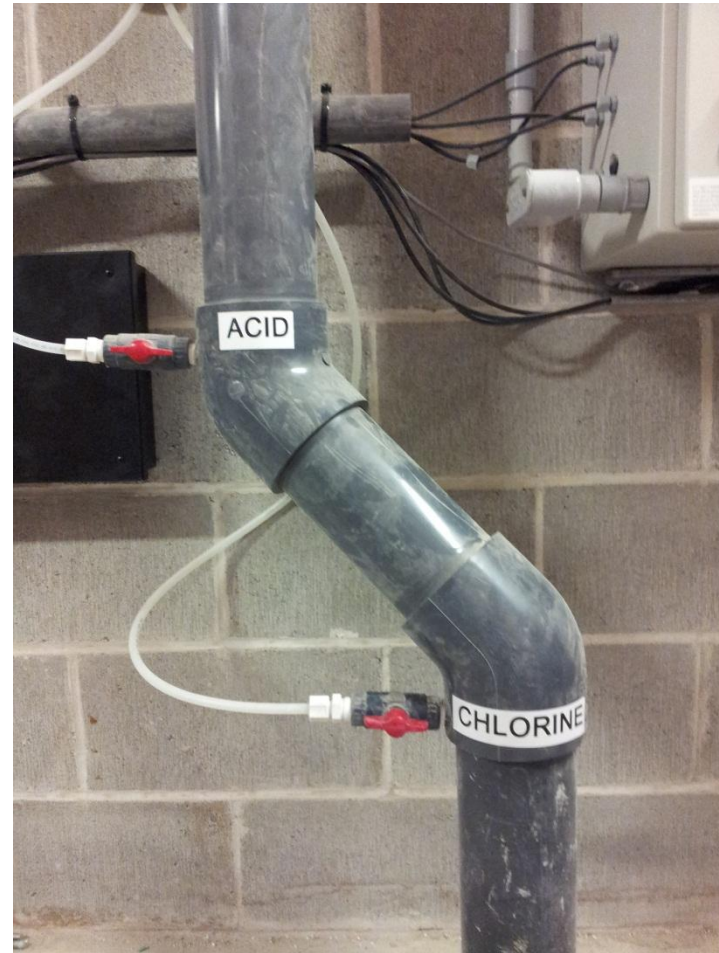
How to Change the Acid

DO NOT ATTEMPT UNLESS YOU HAVE BEEN TRAINED

1. Turn off pump – both pumps for pool acid and one pump for spa acid
2. Locate bung wrench, pipe wrench, and full acid barrel
3. Line up “caps” (called bungs) of empty acid barrel and full acid barrel
4. Unscrew bung on empty acid barrel with pipe wrench and unscrew bung on full acid barrel
5. Slowly remove bung from empty acid and place in new acid barrel without letting any drops of acid spill out of either barrel (For Spa skip to step 7)
6. Rotate both barrels so that the unchanged bungs are adjacent to each other and repeat steps 4 and 5
7. Screw on caps tightly on both acid barrels
8. Turn on pumps and reset alarm on control panel

Spa Injectors

- Acid/chlorine enters the spa here
- Salt deposits with build up on chlorine injectors over time
- Chlorine injectors should be closed and opened weekly to deter salt buildup



Pool Injectors

- Acid/chlorine enters the pool here
- Chlorine injectors should be closed and opened weekly just like the spa



Cotton

- This is what cotton does to our filters.
- Do not let people wear cotton in the pool



What Values should be Reading

Pool

- ORP: about 800
- pH: 7.2-7.8
 - Ideally 7.3
- Free Chlorine 1ppm-10ppm
 - Ideally 2ppm
- Combined Chlorine: 0
- Alkalinity: 80-100ppm
- Calcium: 200-400ppm

Spa

- ORP: about 790
- pH: 7.2-7.8
 - Ideally 7.3
- Free Chlorine 1ppm-10ppm
 - Ideally 2ppm
- Combined Chlorine 0
- Alkalinity: 60-100ppm
- Calcium: 200-300ppm

To Change Chemicals

- Increase Chlorine – Increase ORP
 - If fecal contamination; add Calcium Hypochlorite
- Decrease Chlorine – Decrease ORP
 - If you need to do this quickly add Dechlor
- Increase Alk – add bicarb
 - Only time will decrease
- Increase Calcium – add calcium flakes
 - To decrease you must drain the pool

Techniques for Pool Operator

- These are problems/situations that have previously occurred in the pump room. The Pool Operator may refer to the following slides as a reference
- Do not attempt to try any of these fixes unless trained

Problem #1

- The Acid/Chlorine pumps are not working
 - Make sure they are switched to on
 - Make sure they are plugged in
 - Check fuses behind the control panel
 - Fuse 1 is acid, fuse 2 is chlorine, fuse 3 and 4 are spares
 - Swap the fuses



Problem #2

- Air Bubbles are coming out of inlets
 - Check tubing in acid/chlorine pumps
 - Should be cinched down
 - This should fix the problem



Problem #3

- The UV will not turn on
 - Check for alarms; each alarm will be treated differently
 - Check amp draw going to bulbs
 - Each bulb should read about 12 amps
 - Check voltage running to UV unit
 - Should read about 208 volts
 - Check breakers inside unit
 - Should be “Red” not “Green”



Problem #3 continued

- Check Ground water leakage box
 - Hit test and reset
- Check the values on the PW screen
 - Password is ETS
 - Go to DOSE
 - Check low dose startup enabled
 - Check sensors in use YNNNNN...
 - Check Dose Fault – Change to 0

