Florida Department of Health
Onsite Nitrogen Reduction Strategies Study

Contract CORCL

PNRS II TEST FACILITY CONSTRUCTION
PROGRESS REPORT #3

Date: April 30, 2010
NTP Date: January 29, 2010

Construction of the PNRS II test facility was started February 15th. Below is a list of items completed to date.

I. PNRS II Test Facility Construction JTD

A. Installed Tanks and Accessories

1. Wooden platform has been constructed
2. Flowmeters on existing OSTDS system dose pipes
3. 1050 gallon STE storage tank (Tank 1) and influent pipe
4. (11) Stage 1 Tanks
5. (5) Stage 2 Single-Pass Tanks
6. (4) STE & Recirculation Mixing Tanks
7. (1) Denite Feed Tank
8. (4) Recirculation Pump Tanks
9. Hydrosplitter tee, petcock valves, tubing
10. Geotextile fabric Mirafi FW700
11. Drain pipe
12. Potable water line installed and connected to existing system

B. Pumps and Accessories Installed

1. Installed P2, P3, P4, P6, P7, P8, P9, P14 - Little Giant pumps
2. P5 – In-situ simulation tanks peristaltic pump drive, (2) 1-channel pump heads
3. P10 and P11 - Stage 2 peristaltic pump drive, (2) 2-channel pump heads for stage 2 filter, and (1) 1 channel head for glycerol
4. Installed P4 and P14 pump flow meters
5. Installed P6, P7, P8, P9 recycle pump flow meters

C. Electrical

1. A 15 KVA step-up transformer was installed to the existing 208 volt, 3 phase power feeder to increase the voltage to 480 volt, 3 phase to reduce voltage drop in the 700 foot long feeder. A 15 KVA step-down transformer was installed to feed the existing pump system 120/208 volt power. A second 15 KVA step-down transformer was installed to feed our new system 120/240 volt power.
2. Main Control Panel has been installed.

D. Buildings

1. The storage shed (8' x 16') has been installed near the wooden platform.
2. The 28' x 50' shade cover roof has been installed.

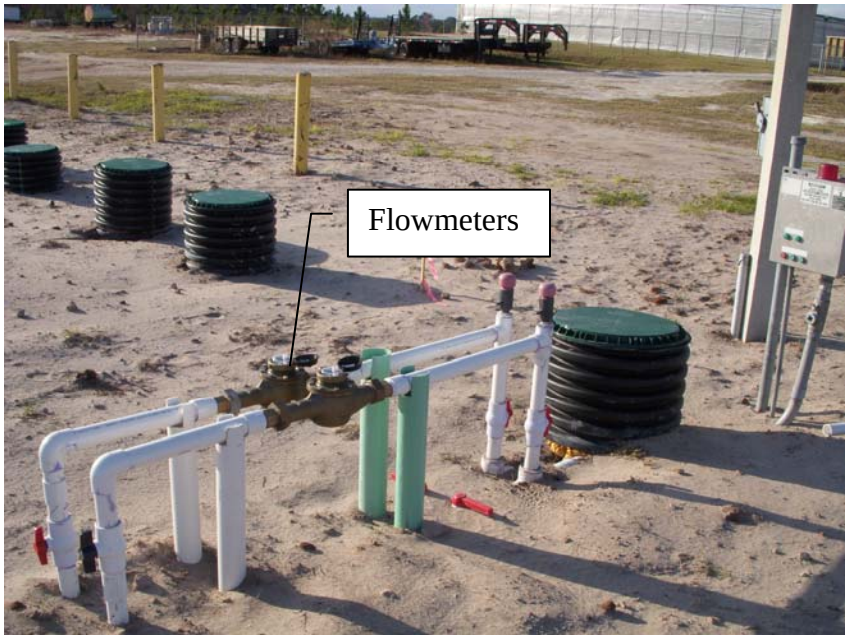
II. Construction Status

The PNRS II pilot test facility construction is substantially complete. Hazen and Sawyer staff conducted a site inspection of the facility on April 26, 2010 and completed a punch list of items for completion by the contractor prior to accepting construction. Storage tank 1 was filled with tap water and all pumps, valves, meters and other equipment were tested. Flow rates were checked, and calibration of flows was begun. The punch list developed is included in Section IV of this progress report. Completion of these items is underway and all items should be complete by mid May.

Start up of the test facility is planned for the week of May 17th. Final calibration of flows to the pilot systems will be completed and the STE supply pump (Pump #1) in GCREC septic tank #2 will be activated, which will then begin supplying wastewater to the system. Water quality monitoring is anticipated to begin in June.

III. Photos Showing Various Components of the Test Facility

1050 Gallon STE Storage Tank 1



Flowmeters for Existing OSTDS System

Wooden Platform North Side

Installing Tanks

Installing Potable Water Line

Mixing Media (Clinoptilolite 8X14 and Oyster Shell)

Media Storage

Gravel at the Bottom of the Tanks

Installing Geotextile Fabric above Gravel at Bottom of Tanks

Installing Media in Tank (UNSAT-EC-3) above Geotextile Fabric

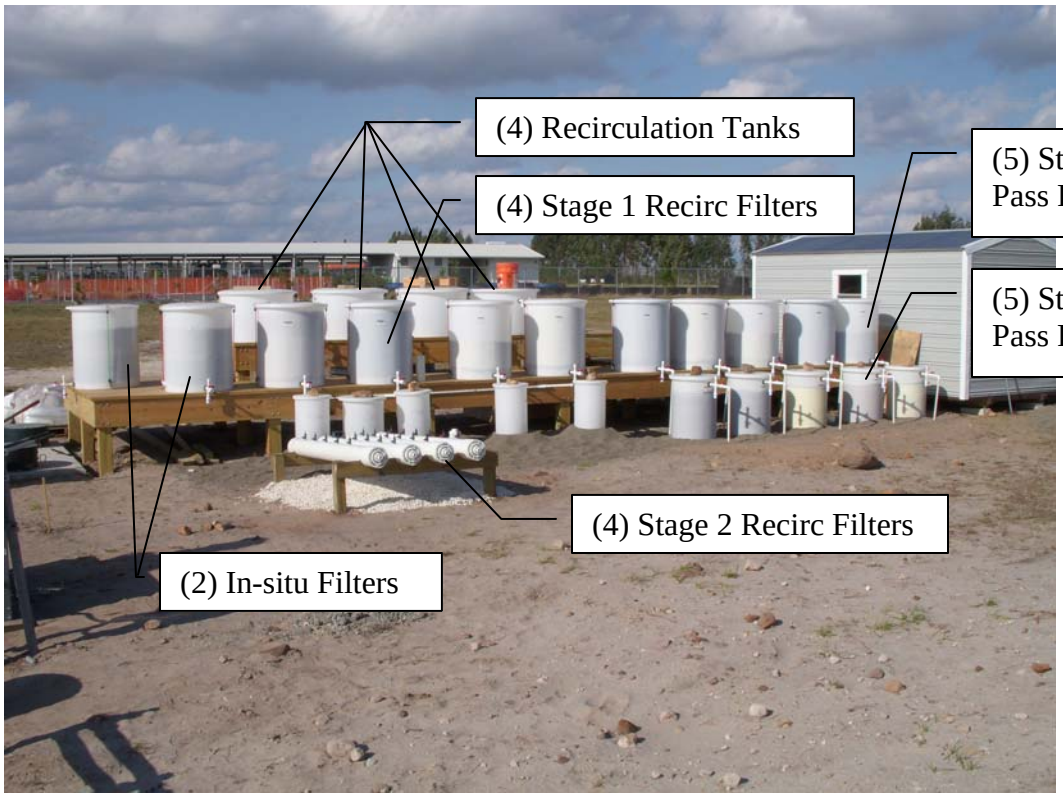
Tamping Media (UNSAT-CL-3)

Installing Sample Piezometers within Stage 2 Upflow Tank (DENIT-LS-2)

Installing Media within 6” x 72” L Stage 2 Filters (DENIT-SU-1)

Storage Shed

New Electrical Transformers


(4) Recirculation Tanks
(4) Stage 1 Recirc Filters
(5) Stage 1 Single Pass Filters
(5) Stage 2 Single Pass Filters
(4) Stage 2 Recirc Filters
(2) In-situ Filters

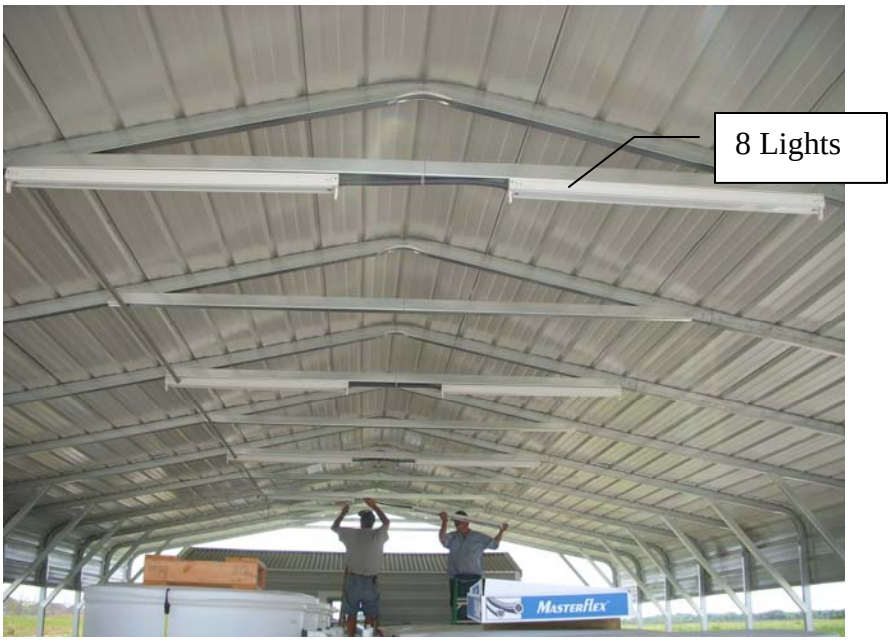
Metal Building Support Beam & Anchors Installed

Metal Building J Frame Installed

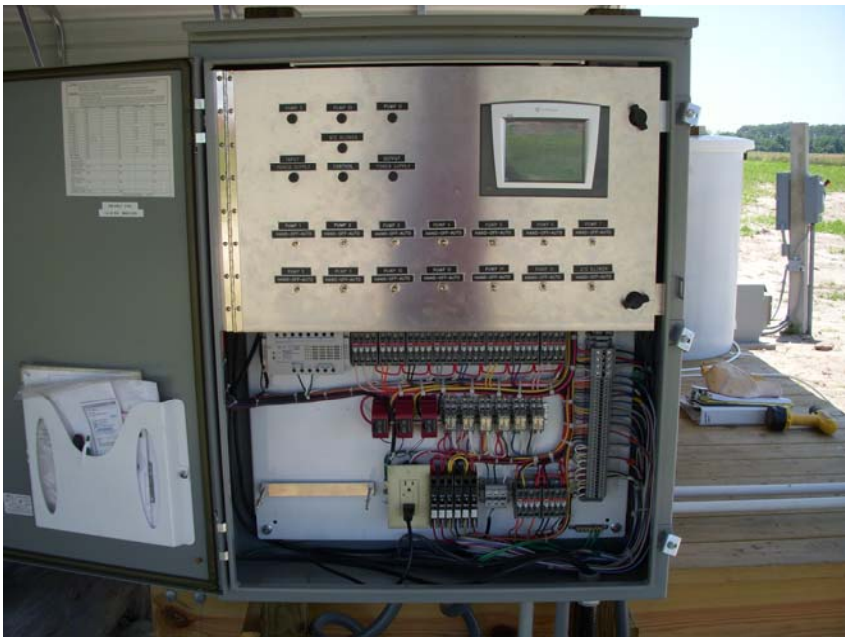
First Roof Panel Installed

Metal Building Roof Panels Almost Complete

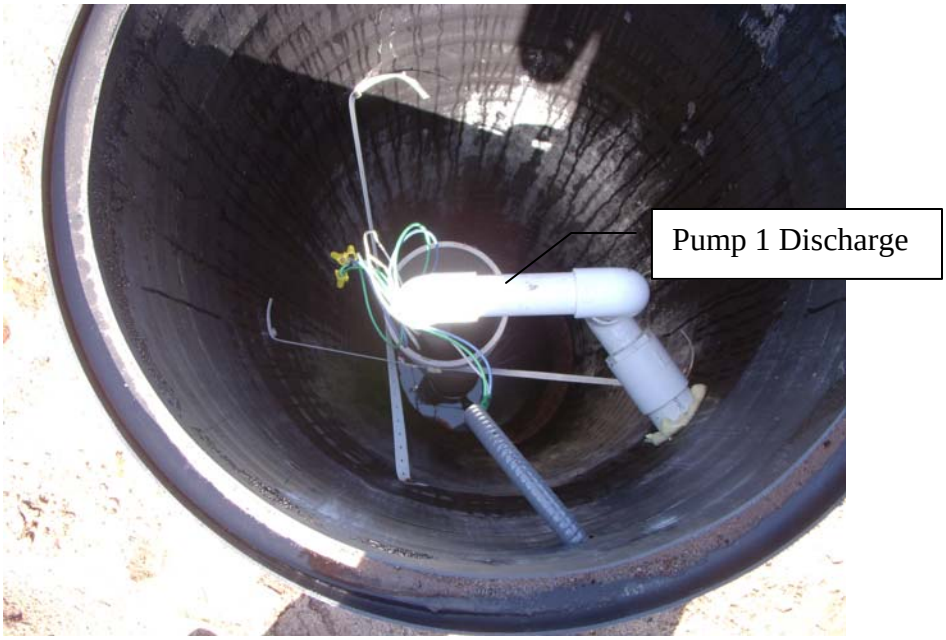
Metal Building Support Beams Almost Complete



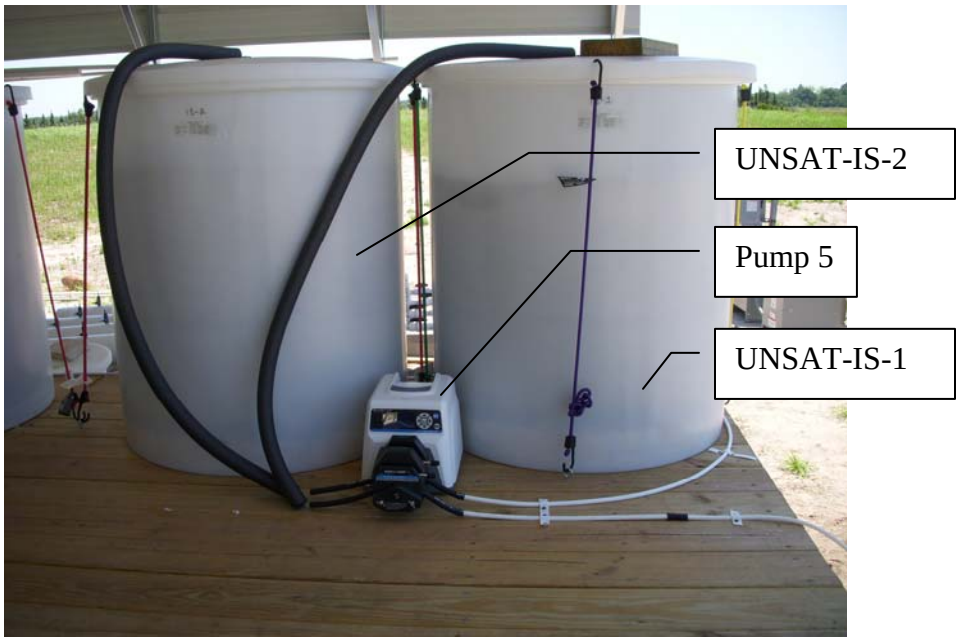
Lights on Metal Building



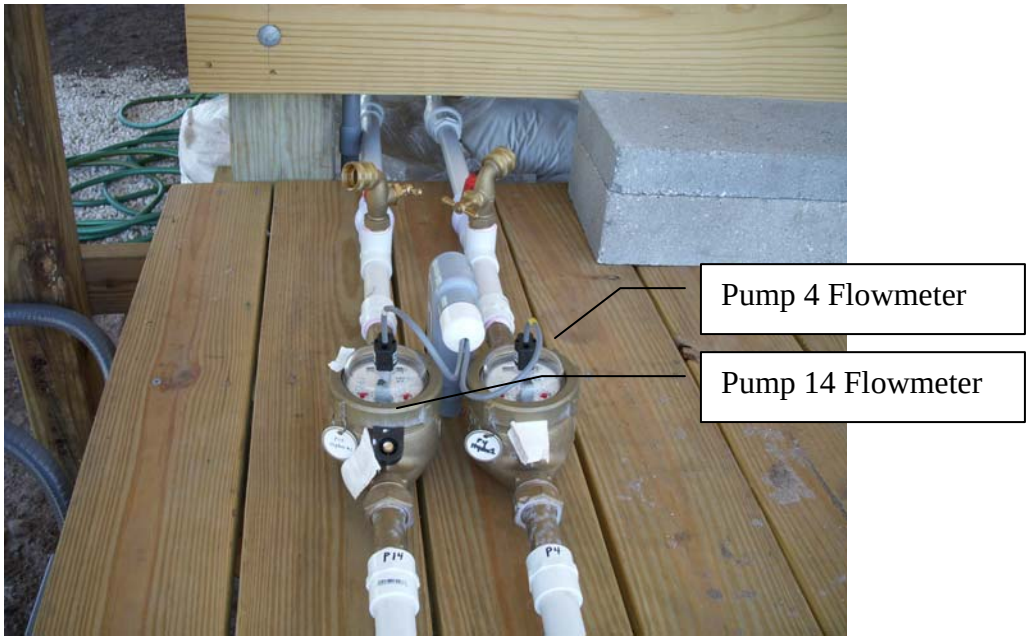
Main Control Panel



Pump 1 in Existing Tank#2



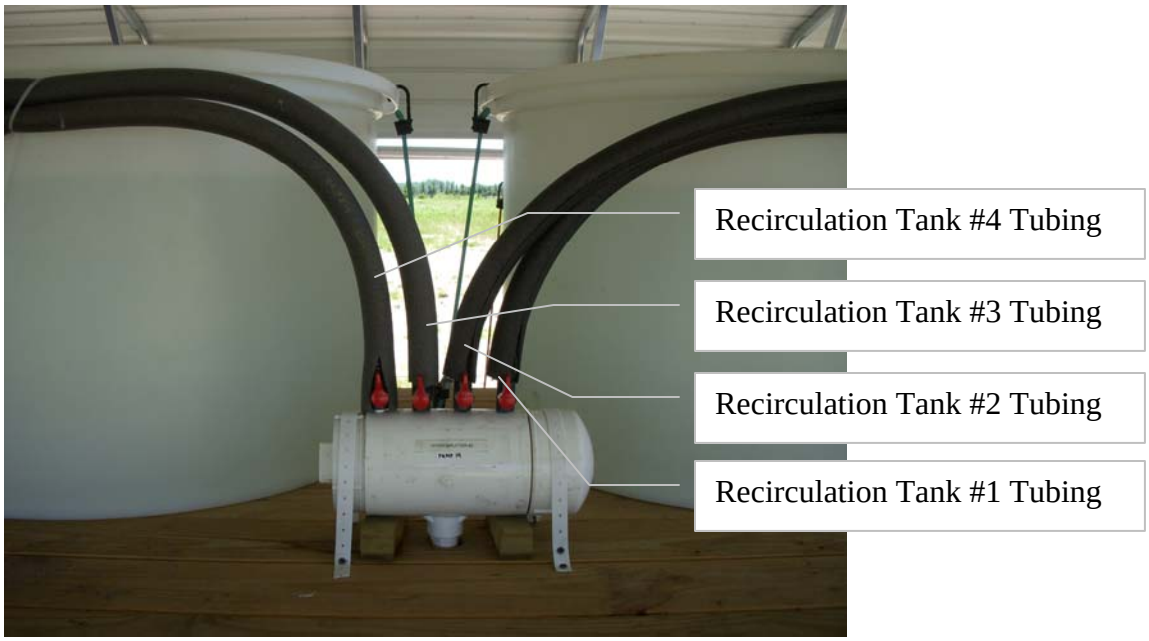
UNSAT-IS-1 and 2 Biofilters



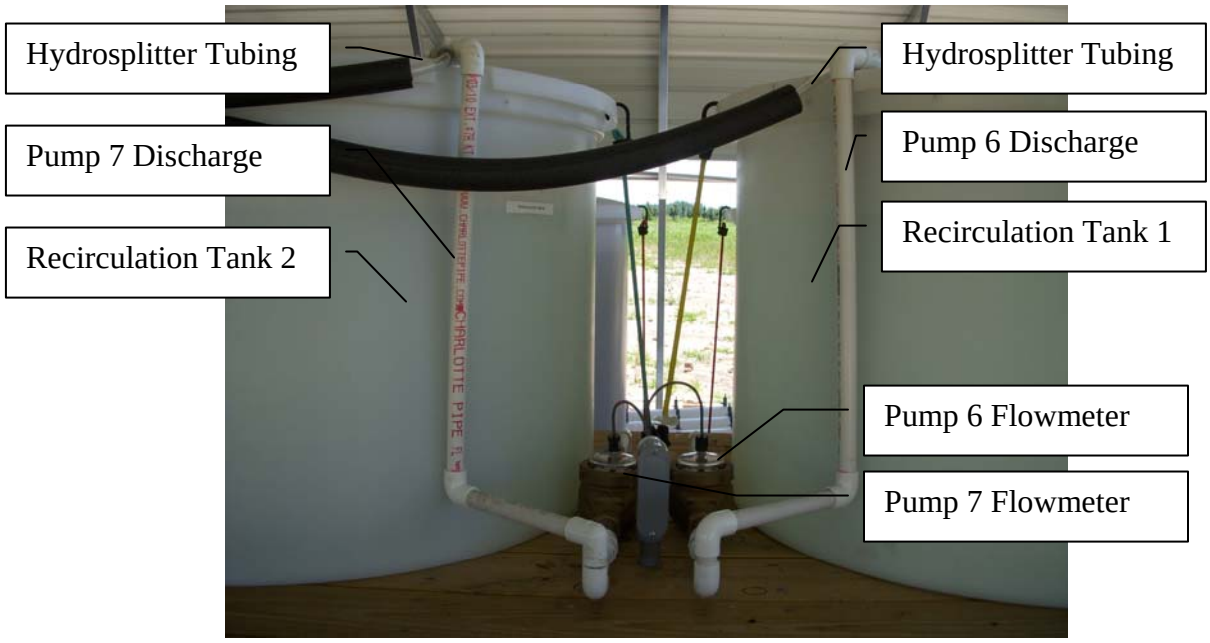
Hydrosplitter Flowmeters

Hydrosplitter #1 (Single Pass Systems)

Single Pass Systems



Hydrosplitter #2



Recirculation Systems 1 and 2 (Upstream)

Recirculation Systems 1 and 2 (Downstream)

Recirculation Systems - Stage 2 Filters

Completed PNRS II Test Facility

IV. Punch List

PNRS II TEST FACILITY CONSTRUCTION
CONTRACTOR PUNCH LIST

Location	Item	Description	Complete
STE Storage Tank #1	1.	Low Low Float shall be moved to Pump Chamber	04/27/2010
Pump 6 Discharge Line	2.	Install 1/2” ball valve for flow adjustment	04/27/2010
Pump 7 Discharge Line	3.	Install 1/2” ball valve for flow adjustment	04/27/2010
Pump 8 Discharge Line	4.	Install 1/2” ball valve for flow adjustment	04/27/2010
Pump 9 Discharge Line	5.	Install 1/2” ball valve for flow adjustment	04/27/2010
UNSAT-IS-1 and 2 Drain Pipe	6.	Seal connection to main drain line	04/27/2010
DENIT-LS-1	7.	Tighten and seal caps on inlet side (leaking)	05/5/2010
DENIT-SU-2	8.	Tighten and seal caps on inlet side (leaking)	05/5/2010
DENIT-SU-1	8.	Tighten and seal caps on inlet side (leaking)	05/5/2010
HYDROSPLITTER #1	9.	Tighten and re-tape cleanout connection (leaking)	04/27/2010
HYDROSPLITTER #1	10.	Tighten and re-tape petcock valve for UNSAT-CL-1 connection to Hydrosplitter (leaking)	04/27/2010
HYDROSPLITTER #2	11.	Tighten and re-tape cleanout connection (leaking)	04/27/2010
HYDROSPLITTER #2	12.	Tighten and re-tape petcock valve for Recirculation Tank #4 connection to Hydrosplitter (leaking)	04/27/2010
Pump 6 Dose Tank	13.	Glue overflow pipe tee connection to common drain to Denite Feed Tank	04/27/2010
Denite Feed Tank (Tank 3)	14.	Install bulkhead fitting for overflow pipe, pipe and connect to main drain	04/27/2010
Single Pass Stage 2 Biofilters DENIT-LS-4, SU-4, LS-3, LS-2 and SU-3	15.	Provide lid opening for sample tubes	04/27/2010
Single Pass Stage 1 Biofilters	16.	Install splash plates made of plexiglass	TBC
UNSAT-IS-1 and 2 Biofilters	17.	Install splash plates made of plexiglass	TBC
Control Panel	18.	Programming changes to software to revise cycle times to MM:SS input rather than MMM	TBC
Control Panel	19.	Programming change to software to include a reset button to zero all flows, runtimes, etc.	TBC