UC San Diego

ENVIRONMENT, HEALTH, AND SAFETY

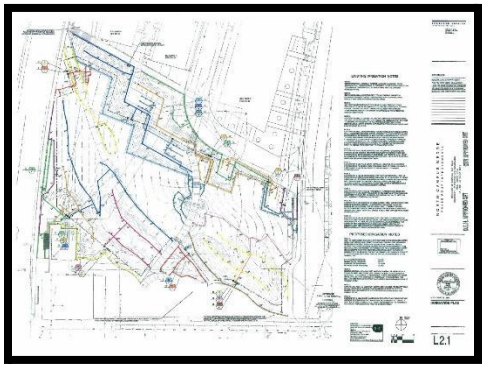
UCSD Recycled Water Inspection Checklist

This checklist represents the steps to be completed for a recycled water site to perform its every routine 4-year cross connection test, or for a new site to build out its irrigation system, and get it approved to run on recycled water. The annual walk and site inspections are a separate, yet much easier, test.

EXISTING SITES (EVERY 4-YEAR TEST)

- Check the Master Recycled Water Site list from EH&S: (https://blink.ucsd.edu/safety/environment/water-quality/index.html#Recycled-water) If your site is heighted for that year, then that site will need to perform its every 4-year cross connection test. The listed person is responsible for the test being completed.

- Have irrigation tech run the entire irrigation system. Have them update the control chart as to any changes. Repost the new control chart(s) in the irrigation controller.



- **Accurate control charts are vital**. Since UCSD has many irrigation systems near each other, showing the site boundaries and areas is critical.

- If there is a potable water backflow, it will need to be tested by either FM Maintenance or hired by an outside contractor. Schedule with your choice to have the backflow tested, repaired, if need be, and retested. A passing report is required by the City of SD. (**Do this as early in the year as possible, as parts may need to be ordered for the backflows**)

- Schedule a shutdown date and time with the City of San Diego inspector, and your landscape provider, FM Landscape most likely. Please give the landscape provider ideally one month notice of the test, so that they can ensure staff availability for your test.

- If an FM Shut Down notice is required, contact FM Work request. FM requires ideally no later than a month's notice. They need two weeks to get the approvals for the shut down, and two weeks that the notice is posted. An email is also set out to the occupants.

- Contact FM Maintenance West to request them to be on site to assist with shutting down water lines if necessary for your site. FM Maintenance may be needed to set up high lines prior to the test, or for gate valve isolation in the street area. A work order will need to be created to cover for their time at the test.

- If a highline is necessary, FM will set it up prior to the test date and time. Site Contact for their site will verify when the highline is up and functional, and confirm proper high line set up and functioning of the building.

- At the day of the test, the City of SD will set gauges on appropriate areas of the water line to be tested.

- The water lines will be isolated. This may be a combination of FM plumbers with site department maintenance staff. Any mechanical systems will be shut down as needed by those department maintenance staff.

- The water line will be depressurized to roughly 30 psi. Close the furthest isolation point first to trap the water pressure, then go back to the backflow and close the water there. Drain the line via the City gauge or test port down to 30 psi or what the inspectors want. Check for hold. You may have to recharge the water line if not holding and retightening down the isolation valves. Hold water pressure for a minimum of 4 hours.

- During this time, the irrigation will be run. The irrigation tech will assist the City of SD in watching the spray of each zone of irrigation. The entire irrigation system will be run for a minimum of 2 minutes per zone. Purple boxes and spray heads will be checked for. Recycled water signs will be checked for. If you need new signs, UCSD has its own small sign. The jpg. And vector for it can be found at (https://blink.ucsd.edu/safety/environment/water-quality/index.html#Recycled-water)

- After 4 hours, the water line(s) may be repressurized. Then the gauge used by the City of SD will be removed. The water to the building can be restored and mechanical systems turned back on. If a highline is present, it may be removed and broken down.

- That is the completion of the test. If there are any corrective actions, the City of SD will follow up to verify completion of noted items to correct. If a retest is needed, it can be scheduled.

NEW CONSTRUCTION & RETROFIT SITES

- Irrigation system designed and plans signed by landscape architect.

- EH&S to walk the site with the City of SD and possibly County of SD to determine the shut down test and get in writing what the initial test for this site will be.

- Landscape architect field verifies the existing system, in partnership with FM landscape.

- UCSD staff review the plans; add comments until final construction documents are created. If a retrofit, particular attention is made to the possible new backflow preventers that will need to be installed and how water lines will be isolated.

- For retrofits or older potable water irrigation systems, the water lines in the ground may remain, but the valve boxes, quick couplers and spray heads will all need to be converted to recycled water purple colors. Recycled water signs posted also. Old gate valves in the building may be present, but it is safest to have one new one installed as part of the project. This is to ensure that the water lines will hold. Old valves are not as reliable.

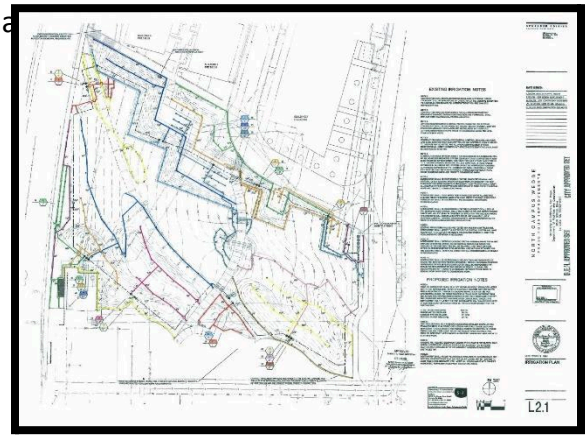
- Plans are submitted to County DEH for approval, then those approved plans are submitted to the City of SD for approval. Contractor pays for review fees and all resubmittals till approved/stamped plans are obtained. UCSD and the contractor now have approved plans to work from. These plans may be separate plans from the 100% CD plans that are built from.

- City of SD Inspector to meet contactor and visit site. Site walk with County and City to determine what water lines will be isolated for the X-connection tests. EH&S will confirm to the contractor what was stated by County and City for required testing via early walk with EH&S.

- Built out by the contractor. City of SD inspector called out by contractor to witness pressure testing of main lines and any potable water crossings. The construction documents on the landscape pages state that, "**It is the contractor's responsibility to obtain compliance with the City of SD."** Thus, UCSD may assist in this compliance, by bringing in the IOR, PM, EH&S or FM to assist the contractor. It is not UCSD's responsibility to carry out the compliance, it is the contractors as part of the project. UCSD will assist as needed, but the responsibility of compliance rests with the contractor.

- Any RFIs or changes to the plans but be routed to UCSD EH&S to review. The movement of backflows and or isolation valves can make the required testing worse and possibly require fire services and more buildings to be shut down for the testing.

- All backflows will need to be tested and certified. Copies of certifications forwarded to EH&S. This shows that the backflows are functiona



- Once build out is complete, EH&S, IOR, CPM, FM and contractor all walk the site together to finalize what was done, and any changes to the County and City approved plans.

- Control charts are present in the irrigation controller. Accurate control charts are vital, and County of SD will require them. They are also a deliverable per UCSD contract documents. Landscaping company normally provides laminated 11x17 sheets to UCSD to be held in the controller.

- EH&S will coordinate with either the contractor or campus to verify that the water lines hold. This will be done with the City of SD gauges. This is to test that the new water lines hold pressure and do not leak. This is a pretest prior to the County coming out.

- CPM to issue $2280 check to County of SD for shut down. When check deposited, and City of SD satisfied that the site is ready to test, then City of SD to contact County for a shutdown date. UCSD to provide a preferred date and time. EH&S to coordinate the emails out to campus.

- If an FM Shut Down notice is required, contact FM Work request. FM requires ideally no later than a month's notice. They need two weeks to get the approvals for the shut down, and two weeks that the notice is posted. An email is also set out to the occupants. Fire Watch may be required also. Either EH&S or the contractor will coordinate this.

- Contact FM Maintenance West to request them to be on site to assist with shutting down water lines if necessary for your site. FM Maintenance may be needed to set up high lines prior to the test, or for gate valve isolation in the street area. A work order will need to be created to cover for their time at the test.

- Test the site with County and City on site. Shut down water lines. FM maintenance may need to be on site for isolation. IOR to create work order. Contractor and/or campus landscape to run all irrigation in question. IOR to create work order for FM or HDH landscapers to be on site. Check for overspray, tags, quick couplers, valve boxes, and signage. When tests are complete, the City will come back to 24-hour irrigation drain down test. City to forward all tests to County for review.

- Once the County reviews the test, then approval is given to the City. City of SD to notify UCSD that the site is approved.

- UCSD to coordinate with City of SD to have City witness highline being disconnected. UCSD then permitted to install submeter and turn on recycled water feed to the system. FM meter shop notified by contactor, so that FM knows the date of meter install. Contractor to coordinate Metasys transponder synch with campus meters system.

(end of report)