***Colchester ~ East Hampton***

 Water Pollution Control Facilities

**P.O. Box 218**

**20 Gildersleeve Drive**

 **East Hampton, Connecticut 06424-0218**

 **Telephone Telephone**

 **Administration Operations**

 **(860) 267-2536 FAX (860) 267-9913 (860) 267-4142**

 Joint Facilities Pump Station Checks

Standard Operating Procedure

Lake Hayward Pump Station

* 89 New London Road, Colchester CT

Effective date: xxxxxxxxxx

**RATIONALE / PURPOSE**

* Pump stations should be inspected at least weekly. (Based on system design and capacity, more frequent inspections may be required).
* Records of these inspections must be maintained through the use of written notes, logs, notebooks, and /or computer format.
* These are to be referenced by management, operations, and maintenance crews, to ensure established procedures are being followed to ensure the maximum lifespan of all facilities and equipment.
* Documentation may also be required by outside regulatory agencies and insurance companies in the event of a spill, equipment failure, or property loss.

**INSPECTIONS**

* DAILY Monday – Friday
* Pickup any trash on the property.
* Plow and shovel snow within the station limits and spread ice melt if needed.
* Visually inspect the wet well covers, locks, Mission system alarm antenna, Eversource meter, and vents for damage or vandalism.
* Report any potential safety conditions observed to the Superintendent and Colchester Utilities Administrator.
* Record generator hours.
* Record pump hours.
* Ensure generator block heater and trickle charger are functioning properly.
* WEEKLY
* Inspect and clean floats.
* Inspect valve vault.
* Report to Superintendent as to the general condition of the pump station.
* QUARTERLY – Jan, Apr, Jul, Oct
* At least quarterly, operate main generator under load.
* Inspection of pumps by monitoring the minute readings (without seeing an increase) in average minutes would ensure that the impeller is free of debris and fully pumping.
* Exercise pump station shutoff valves.
* Wet well inspection.

**METHODS / PROCEDURES: DAILY CHECKLIST**

* For daily inspections unlock the pump station gate.
* Proceed to the generator control panel on the left and push the fault/acknowledge/test button.
* Record the generator hours reading on the checklist.
* On the front side of the generator inspect the fuel level and record it on the checklist.
* On the generator control panel keypad scroll through the engine status screen to inspect the battery charger voltage and confirm it’s at 13.3 volts.
* Physically touch the generator block it should be warm to the touch.
* Check generator components for leaks.
* Record Generator hours on the checklist.
* Note generator tank fuel level and record on the checklist.
* Proceed to the pump control cabinet and open the doors.
* On the pump control panel inspect the pump run hours and record them on the checklist.
* On the pump control panel ensure that the pumps are on in “Auto” position and take note of any alarms.
* Verify the pumps are operating in “Alternate” on the control panel.
* Note anything unusual and record it on the pump station checklist, write it in log book, and notify the Superintendent and Colchester Utilities Administrator by text or email.
* Before leaving the pump station ensure that all lights are turned off, and the doors are locked.

**METHODS / PROCEDURES: WEEKLY CHECKLIST**

* For weekly inspections unlock the pump station gate.
* Open the wet well lid and inspect all floats for proper operation by lifting them up and turning them on. Confirm that alarm floats are sending alarms through the Mission System.
* While inspecting the floats clean each float so it is free of debris, rags, and grease.
* Open the pump control cabinet.
* Pickup any trash in the control panel cabinet.
* Proceed to the valve vault and unlock and open the hatch.
* Confirm that the lights are working properly and the floor drain is not obstructed.
* Note anything unusual and record it on the pump station checklist, write it in log book, and notify the Superintendent and Colchester Utilities Administrator by text or email.
* Before leaving the pump station ensure that the doors and gate are locked.

**METHODS / PROCEDURES: QUARTERLY INSPECTION**

* For quarterly inspections unlock the pump station gate.
* Proceed to the main breaker panel and in between pump cycles shutoff the main power and operate the generator under load. Ensure proper operation of generator and lift station under emergency power supply. Run test for a minimum of 15 minutes. Check fuel levels, battery and general condition of generator.
* To return the station to street power in between pump cycles push down and lift up the main breaker on the main breaker cabinet.
* Log onto the Mission system and review the efficiency of the pumps by monitoring the minute readings (without seeing an increase) in average minutes would ensure that the impeller is free of debris and fully pumping.
* Proceed to the valve vault and open the valve vault hatch.
* Plug in the portable blower and place the hose in the vault and evacuate old air for 3-5 minutes.
* Turn off both pumps and lock them out in the control cabinet.
* Turn on the Drager X-am 2500 gas meter (Figure: 1) by holding down the green ok on button for three seconds.
* Dräger’s X-am® 2500 accurately detects Ch4, O2, H2S and CO.
* Tie Drager X-am 2500 gas meter to a rope and lower down the stairwell tube to make sure the air at all levels is safe to enter.
* OSHA considers a space to have a **hazardous atmosphere** if it has any of the following conditions:
	+ >10% of Ch4 of flammable gas or vapor.
	+ Hydrogen sulfide level must be maintained below 10 ppm H2S.
	+ Oxygen, levels must be above 19.5% and not exceed 23.5% oxygen.
	+ Carbon monoxide, levels must remain below 35ppm.
* If anyone of these conditions is present down inside of the chamber there will be high pitched audio alarm, visually red flashing light and the Drager X-am 2500 gas meter will be vibrating.
* If an alarm should sound and acceptable levels are exceeded, secure the area and notify supervisor immediately.
* The gas monitoring device shall remain with the entrant while in the confined space during the entire maintenance process when entry is required.
* Fill out confined space alternate entry checklist before going down wet well stairs with the Drager X-am 2500 gas meter attached to your belt.
* Descend carefully down the vault ladder to the bottom.
* Turn each valve fully clockwise and fully counter-clockwise and make sure to return them to their normal operating position (open).
* Inspect all discharge piping and valves visually and audibly for leaks.
* Ensure that both pumps are valved properly before ascending the ladder.
* Ascend the ladder to the surface, turn off the blower and close the hatch. Turnoff the Drager X-am 2500 gas meter by holding down the blue + button along with the green ok on button for three seconds, verify that vault lid is closed before leaving, and finish up confined space permit.
* Unlock the pumps and return them to auto.
* Inspect wet well walls and rails for grease or rag build-up and damage. This includes heavy rust or degrading wet well components like pipes, movables, gaskets and connectors.
* Check wet well penetrations for leaks.
* Note anything unusual and record it on the lift station checklist, write it in log book, and notify the Superintendent and Colchester Utilities Administrator by text or email.
* Before leaving the pump station ensure that all lights are turned off, and the doors and gate are locked.

Figure: 1

