

	State of Washington Department of Ecology WASTEWATER TREATMENT PLANT COMPLIANCE INSPECTION REPORT	Northwest Regional Office 15700 Dayton Ave N Shoreline, WA 98133 206-594-0000 ph 206-366-7810 fax (last update 7-6-2021)
	Section A: General Information	

Report Version <input checked="" type="checkbox"/> New <input type="checkbox"/> Changed <input type="checkbox"/> Delete	PERMIT # ST0007373	mo/day/yr 03/28/22	Inspection Type C	Inspector Code S	Facility Type <input checked="" type="checkbox"/> 1 Municipal <input checked="" type="checkbox"/> Public <input type="checkbox"/> Private
Remarks					
Inspection work days 2.0	Facility Self-Monitoring 5	Photos Taken <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Samples Taken <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	BI N	QA N
Lead Ecology Inspector(s) Madison Diaz, Shawn McKone					

Section B: Facility Data		
Name, Location, and Phone of Facility Inspected Holmes Harbor Sewer District Water Reclamation Facility 1200 E. Antelope Dr. Freeland, WA 98249 Island County	Entry Time 8:45 AM	Permit Effective Date 01/01/19
Name(s)/Title(s) of On-Site Representative(s) Chad Clay, General Manager (Group IV) Steve Terrell, Operator (Group III)	Exit Time 12:15 PM	Permit Expiration Date 12/31/23
Name, Address, Title, Phone, and Fax Number of Responsible Official Bill Hamilton, Commissioner/President Holmes Harbor Sewer District P.O. Box 1330 Freeland, WA 98249 Island County Phone Number 360-331-4636 Fax 360-331-4676 Contacted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Ecology Staff On-Site Madison Diaz, Permit Manager Shawn McKone, P.E. Municipal Unit Supervisor	
Other Facility Data Mamdouh El-Aarag from Washington State Department of Health assisted with the inspection.		

Section C: Areas Evaluated During Inspection (Check only those areas evaluated)					
<input checked="" type="checkbox"/> Permit	<input checked="" type="checkbox"/> Flow Measurement	<input checked="" type="checkbox"/> Operations & Maintenance	<input type="checkbox"/> CSO/SSO (Sewer Overflow)		
<input checked="" type="checkbox"/> Records/Reports	<input checked="" type="checkbox"/> Effluent <input type="checkbox"/> Receiving Water	<input checked="" type="checkbox"/> Sludge Handling/Disposal	<input type="checkbox"/> Pollution Prevention		
<input checked="" type="checkbox"/> Facility Site Review	<input type="checkbox"/> Compliance Schedules	<input type="checkbox"/> Pretreatment	<input type="checkbox"/> Multimedia		
<input checked="" type="checkbox"/> Self-Monitoring Program	<input checked="" type="checkbox"/> Laboratory	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Other		

Section D: Summary of Findings/Comments

I. INTRODUCTION

Ecology staff conducted an inspection of the Holmes Harbor Sewer District Water Reclamation Facility (HHSD WRF) on March 28, 2022. Madison Diaz, NWRO Water Quality Program Municipal Permit Manager and Shawn McKone, P.E., NWRO Water Quality Program Municipal Unit Supervisor, along with Mamdouh El-Aarag, Washington State Department of Health, conducted the inspection with assistance from Holmes Harbor Sewer District (District) – Staff Chad Clay and Steve Terrell. The purpose of this inspection was to observe current conditions at the facility, orient Ecology's new permit manager with facility operations, and discuss future water reclamation projects and uses.

II. RESULTS AND DISCUSSION

Within the last year, HHSD WRF was able to produce about 23.5 Million Gallons (MG) of Class A reclaimed water and distributed about 14.5 MG to the Golf Course irrigation ponds and greenways.

Collection System:

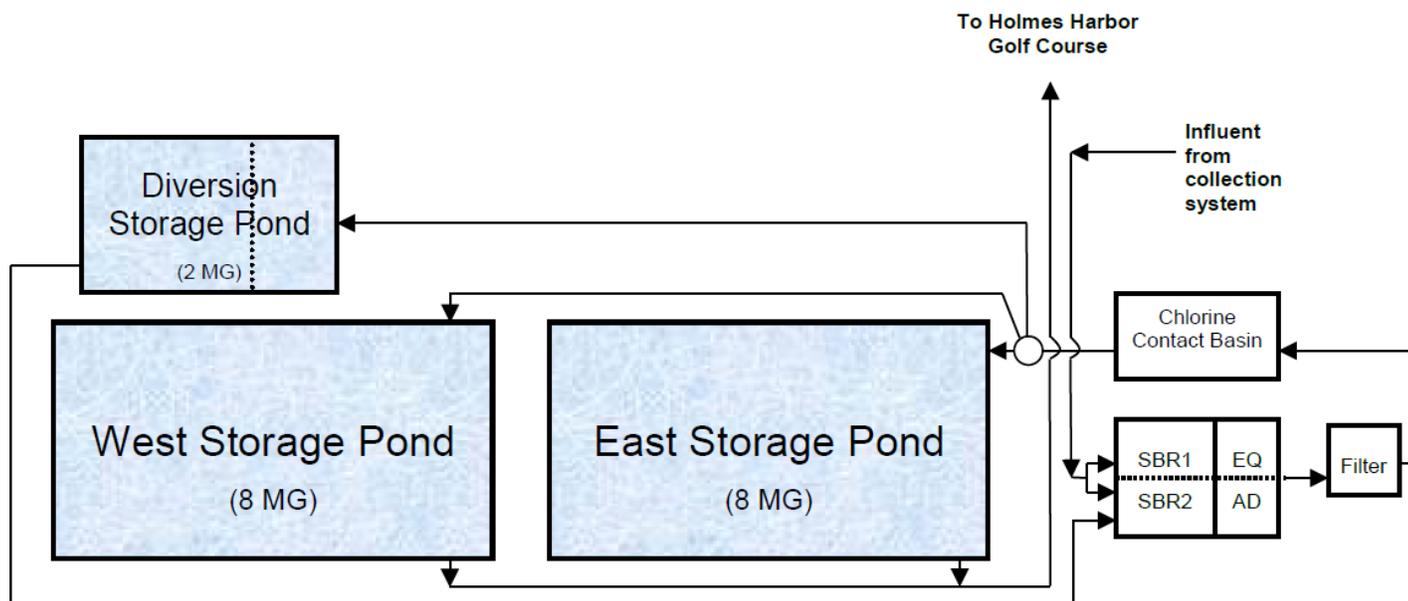
The District currently has 462 active connection with about 50 grinder pump connections in the system. Wastewater is collected through STEP systems that are located on single family homes on private property. The STEP systems are comprised of a septic tank which has a pump in it that propels wastewater from the septic tank into the collection system. There are about 50 grinder pumps in the collection systems, the District is not allowing any additional grinder pumps systems to be installed as new connections and some of the current grinder pump systems will convert to STEP systems if possible.

The entire system is conveyed through pressurized pipe and pumps. Currently, the District is responsible for upkeep and repairs on the tank and pump systems in the STEP systems and the homeowners are responsible for piping from the home to the septic tank and for cleaning and emptying the tank. The Board of Commissioners plan to discuss these responsibility and perhaps draft by-laws to clarify what is the homeowner’s responsibility and what is the district responsibility when it comes to the STEP systems. Based on flow records, the system may experience excessive inflow and infiltration (I/I). Flow records show that during storm events flows tend to be much larger than dry weather flows. The District is currently looking at clearing weeds and roots near the manhole covers on the STEP systems and also water proofing the lids when they go out on inspections to the STEP system. The updated Operations and Maintenance (O&M) Manual and General Sewer Plan will have additional projects that can be completed to minimize (I/I). Staff are currently looking into becoming permitted for working in confined spaces for maintenance purposes on the STEP systems.

Liquid Stream:

After wastewater is collected from the STEP systems, it is then conveyed through the influent flow meter and directed to one of two sequencing batch reactors (SBR) basins for treatment. The influent will alternate between the two SBRs, as one can be in the middle of the treatment cycle while the other fills with influent. The number of cycles completed each day varies. Each cycle includes a fill, react fill, react, settle, decant and idle stage and the entire process takes about 5 hours. One of the SBR was recently cleaned and had some maintenance performed on it. The other SBR will be cleaned soon as well. After the SBR systems, the wastewater then flows through an equalization basin prior to inline polymer blending, coagulation, and filtration through a traveling bridge sand filter. The polymer blend that is introduced after the EQ basin is a liquid poly (Summaclear – 100), which is used to promote coagulation and floc creation before the sand filter. The sand filter is backwashed on a regular basis and backwash is routed to the SBRs. After leaving the sand filters, the treatment process continues into the chlorine contact chambers. The plant utilizes 12.5% sodium hypochlorite solution and flow passes through one-of-two 3,140-gallon contact chambers. The contact chambers are now covered with aluminum panels, which are much lighter and easier to move than the wood panels that were used in the past. After disinfection the final effluent is sent to either the storage ponds before being distributed to the golf course. The plant also has automatic and manual diversion valves that send water to a diversion storage pond when problems at the facility lead to inadequate treatment of the wastewater. Pumps at the diversion pond return the off-spec water back to the treatment plant for treatment prior to distribution.

Below is a diagram of the treatment process, storage ponds, and off-spec/diversion storage pond:



Off-Spec/Diversion Storage Pond:

During large storm events or large flow events, the plant will have to divert flow to the off-spec pond because proper treatment times cannot be maintained. The off-spec pond is able to hold about 2 million gallons (MG) of partially treated wastewater. Currently the diversion to the off-spec pond happens after disinfection, however the treatment plant is looking at adding a valve before the SBR units that can divert excess flows to the off-spec pond. This would allow some of the flow to

be treated and the rest of the flow to be sent to the off-spec pond. Currently, if flow needs to be diverted to the off spec pond, everything must be diverted. According to plant staff, the current setup uses more chemicals and puts a strain on the entire treatment system. The current diversion location would still be in place just in case something happens during the treatment process and flow would need to be diverted to the off-spec pond.

Storage Ponds:

The WRF has two storage ponds, each able to hold about 8 MG of treated class A reclaimed water. During the winter months most processed water is held in the storage ponds. The storage ponds do not have covers to prevent birds from landing in them. In the summer months water is then syphoned off the storage ponds and distributed to 2 golf course irrigation ponds. Effluent water that enters into the storage ponds is chlorinated, however the water is not chlorinated before distribution to the golf course irrigation ponds. Pumps at the golf course then distribute water from the irrigation ponds to the irrigation system that waters the greenways of the golf course. One of the storage ponds was completely drained and cleaned in summer 2021 and the other storage pond should undergo the same dewatering and cleaning process in the summer 2022. The plant staff is also looking into draining and cleaning the 2 golf course irrigation ponds, but are still determining if this would be possible.

Solids Stream:

The solid stream begins after the SBR when solids and scum travel to the aerobic digester. After digestion, solids are allowed to settle to the bottom before being transferred to a holding tank. The facility then transports the solids via truck to Island County's Septage Treatment Facility for further treatment and land application. Polymers are added to the solids to increase solids concentration. The facility is looking into reevaluating their biosolids program and are working with Amber Corfman on how they would be able to provide biosolids to the community and golf course.

Flow Measurement:

The plant influent flow is measured before the SBR tanks and is located near the influent sampling location. The influent flow device is located in a vault near the laboratory generator. The effluent flow meter is located after the equalization basin and before the sand filter. There is also a flow meter before the off-spec pond to measure any diverted flow that is discharged to the off-spec pond.

Sampling:

The plant influent sampler is located near the office/laboratory. The configuration of the plant's influent piping does not allow for an influent automatic composite sampler, thus manual composite samples must be collected for BOD and TSS. Manual composite samples consist of 4 manual grab samples taken at least two hours apart. The effluent automatic composite sampler takes a sample just after the sand filters (the chlorine disinfection injection tap is located just after the effluent sampler tap) and at the time of the inspection the refrigerator where effluent samples are stored was 4.5°C.

Alarms/Back-up Power:

There are two generators at the HHSD WRF and they are able to supply power to the entire facility. The facility has high flow alarms, high turbidity, high SBR, digestion and EQ basin levels, low chlorine and power failure alarms. The plant also has an auto dialer alarm system that calls out to the standby operator if any alarms trigger.

Staffing:

The HHSD WRF is a Class III facility. The facility is staffed with two operators. Chad Clay has a Group IV operator certification and Steve Terrel has a Group III operator certification. The plant is staffed by the operators Monday through Friday from 7am-3pm. The operators rotate who is on call during off-hours, including evenings, weekends, and holidays and have an emergency line if something happens with the collection system or plant. The plant is looking to hire one or two operators in training.

Records Review:

A review of Discharge Monitoring Report (DMR) records, Individual National Pollutant Discharge Elimination System (NPDES) Permit and Fact Sheet, Operations and Maintenance (O&M) manual and program, and maintenance and calibration records was conducted during the inspection. All of these items either matched what was submitted to Ecology or was reviewed to determine accuracy. All of these documents are easily accessible to all staff. All DMR records were accounted

for during the last five years and are organized in files by year. A comparison of the January 2021 DMR verified reported data matches the WWTP records. Some of the documents did have white-out in them, District staff informed Ecology this was done for neatness and uniformity. Ecology staff informed the WRF staff that they just need to cross out the data and not use white-out. The WWTP does have an older O&M manual, however a consultant is currently working on updating the old O&M manual and creating an electronic version. The facility has a calibration and routine maintenance program and they also have back-ups of all equipment for the plant and STEP systems. The staff is currently working on a maintenance program for the collection system and are following an example from a WWTP in Lacey, WA that has a similar set up to HHSD WRF.

Upcoming Projects:

The facility is currently updating their General Sewer Plan and O&M manual and will be submitting these items by the end of the year. An asset management program is being looked into to help organize processes and items at the plant. Additional reclaimed water uses are being assessed and the facility is providing information and updates to the permit manager.

III. CONCLUSION

The facility at the time of this inspection was very clean, well maintained, records appeared to be well-organized and the facility does not have any outstanding compliance issues. There have been no major changes at the facility since the last inspection conducted on 03/06/2018. The facility has spare parts for almost everything in the facility in case something breaks or needs replacing. Overall, the facility is maintaining compliance and following permit guidelines.

Name(s) and Signatures of Inspector(s)	Agency/Office/Telephone	Date
Madison Diaz, <i>Madison Diaz</i>	WA Dept. of Ecology, NWRO, (425) 495-1777	05/04/2022
Name and Signature of Management QA Reviewer	Agency/Office/Telephone	Date
Shawn McKone 	WA Dept. of Ecology, NWRO, (206) 594-0158	05/04/2022

ANNOUNCED Inspection

INSTRUCTIONS

Section A: General Information

Report Version: N for 1st version, C for Changed or amended, or D for Delete

NPDES Permit No.: Enter the facility's NPDES or State permit number.

Inspection Date: Insert the date entry was made into the facility. Use the month/day/year format (e.g., 06/30/04 = June 30, 2004).

Inspection Type: Use one of the codes listed below to describe the type of inspection:

A Performance Audit	L Enforcement Case Support	2 IU Sampling Inspection
B Compliance Biomonitoring	M Multimedia	3 IU Non-Sampling Inspection
C Compliance Evaluation (non-sampling)	P Pretreatment Compliance Inspection	4 IU Toxics Inspection
D Diagnostic	R Reconnaissance	5 IU Sampling Inspection with Pretreatment
E Corps of Engineers Inspection	S Compliance Sampling	6 IU Non-Sampling Inspection with pretreatment
F Pretreatment Follow-up	U IU Inspection with Pretreatment Audit	7 IU Toxics with Pretreatment
G Pretreatment Audit	X Toxics Inspection	
I Industrial User (IU) Inspection	Z Sludge	

Inspector Code: Use one of the codes listed below to describe the *lead agency* in the inspection:

C - Contractor or Other Inspectors (Specify in Remarks Columns)	N - NEIC Inspectors
E - Corps of Engineers	R - EPA Regional Inspector
J - Joint EPA/State Inspectors - EPA Lead	S - State Inspector
	T - Joint State/EPA Inspectors - State Lead

Facility Type: Use one of the choices below to describe the facility.

- 1 - Municipal. Publicly Owned Treatment Works (POTWs) with 1987 Standard Industrial Code (SIC) 4952.
- 2 - Industrial. Other than municipal, agricultural, and Federal facilities.
- 3 - Agricultural. Facilities classified with 1987 SIC 0111 to 0971.
- 4 - Federal. Facilities identified as Federal by the EPA Regional Office

Remarks: These columns are reserved for remarks.

Inspection Work Days.: Estimate the total work effort (to the nearest 0.1 work day), up to 99.9 days, that were used to complete the inspection. This estimate includes the accumulative effort of all participating inspectors; any effort for laboratory analyses, testing, travel time and preparation time. This estimate does not require detailed documentation.

Facility Evaluation Rating: Use information gathered during the inspection (regardless of inspection type) to evaluate the quality of the facility self-monitoring program. Grade the program using a scale of 1 to 5 with a score of 5 being used for very reliable self-monitoring programs, 3 being satisfactory, and 1 being used for very unreliable programs.

Biomonitoring Information. Enter D for static testing. Enter F for flow through testing. Enter N for no biomonitoring.

Quality Assurance Data Inspection. Enter Q if the inspection was conducted as follow-up on quality assurance sample results. Enter N otherwise.

Photos Taken: Yes or No

Samples Taken: Yes or No

Lead Ecology Inspector: Enter lead inspector's name

Section B: Facility Data

This section is self-explanatory except for: "Other Facility Data," which may include new information not in the permit or PCS (e.g., new outfalls, names of receiving waters, new ownership, and other updates to the record), e-mail addresses...; and "Ecology Staff On-Site", which may include staff names, titles, phone numbers, or e-mail addresses.

Section C: Areas Evaluated During Inspection

Check only those areas evaluated by marking the appropriate box. Use Section D and additional sheets as necessary.

Section D: Summary of Findings/Comments

Support the findings, as necessary, in a narrative report. Use the headings given on the report form (staffing, back-up power) as appropriate. Reference a list of attachments, such as completed checklists, photos, lab reports, etc. Use extra sheets as necessary.

LINKS AND INFORMATION:

“Informational Manual for Treatment Plant Operators”; February 2004; by the Department of Ecology
Publication Number 04-10-020:

<http://www.ecy.wa.gov/pubs/0410020.pdf>

The manual was prepared to help wastewater treatment plant operators complete and submit their Discharge Monitoring Reports (DMRs) and other annual reports to the Department of Ecology. The manual is available in hard copy. To request a copy, contact the Department of Ecology, Publications Distribution Center at P.O. Box 47600, Olympia, WA 98504-7600 or by Telephone: (360) 407-7472. Updates to the manual are included on the website version.

Ecology’s Wastewater and Reuse website:

<http://www.ecy.wa.gov/programs/wq/wastewater/index.html>

Ecology’s Operator Certification website:

http://www.ecy.wa.gov/programs/wq/wastewater/op_cert/index.html

Ecology’s Laboratory Accreditation website:

http://www.ecy.wa.gov/programs/eap/labs/labs_main.html

Ecology’s Biosolids website:

<http://www.ecy.wa.gov/programs/swfa/biosolids/>

Ecology’s Operator Outreach: Shane Cooper (360) 870-6297; shco461@ecy.wa.gov

Ecology’s Municipal Compliance Specialist (Northwest Regional Office): Greg Lipnickey (425) 449-6560;

glip461@ecy.wa.gov

Ecology’s Wastewater Operator Certification Coordinator: Poppy Carre (360) 407-6449; 1-800-633-6193 (within the state)

poca461@ecy.wa.gov

Ecology’s Biosolids Coordinator (Northwest Regional Office): Amber Corfman (360) 918-4786 amber.corfman@ecy.wa.gov

Reporting Spills/Overflows/Upsets/Bypasses/Loss of Disinfection IMMEDIATELY:

Ecology’s 24-hour number: (206) 594-0000 to report a spill

Department of Health – Shellfish Program 24-hour number: (360) 236-3330

Inspection Photos

PHOTO NO. 1

Date: 3/28/2022
Taken by: Shawn McKone
Witness: Madison Diaz

Description:
TSS Samples from the SBRs and WAS line.



PHOTO NO. 2

Date: 3/28/2022
Taken by: Shawn McKone
Witness: Madison Diaz

Description:
Influent flow meter in vault



PHOTO NO. 3

Date: 3/28/2022
Taken by: Shawn McKone
Witness: Madison Diaz

Description:
Laboratory/Office generator



PHOTO NO. 4

Date: 3/28/2022
Taken by: Shawn McKone
Witness: Madison Diaz

Description:
Chlorine Channels and diversion vault



PHOTO NO. 5

Date: 3/28/2022
Taken by: Shawn McKone
Witness: Madison Diaz

Description:
SBR #2 In fill cycle



PHOTO NO. 6

Date: 3/28/2022
Taken by: Shawn McKone
Witness: Madison Diaz

Description:
SBR #1 In react cycle



PHOTO NO. 7

Date: 3/28/2022
Taken by: Shawn McKone
Witness: Madison Diaz

Description:
Equalization Basin



PHOTO NO. 8

Date: 3/28/2022
Taken by: Shawn McKone
Witness: Madison Diaz

Description:
Digester



PHOTO NO. 9

Date: 3/28/2022
Taken by: Shawn McKone
Witness: Madison Diaz

Description:
Generator for most of the facility



PHOTO NO. 10

Date: 3/28/2022
Taken by: Shawn McKone
Witness: Madison Diaz

Description:
Chlorine disinfection dosing system



PHOTO NO. 11

Date: 3/28/2022
Taken by: Shawn McKone
Witness: Madison Diaz

Description:
Old solids systems and experimental solids



PHOTO NO. 12

Date: 3/28/2022
Taken by: Shawn McKone
Witness: Madison Diaz

Description:
Influent sampling location



PHOTO NO. 13

Date: 3/28/2022
Taken by: Shawn McKone
Witness: Madison Diaz

Description:
Two holding ponds and off-spec pond



PHOTO NO. 14

Date: 3/28/2022
Taken by: Shawn McKone
Witness: Madison Diaz

Description:
Large irrigation storage pond



PHOTO NO. 15

Date: 3/28/2022
Taken by: Shawn McKone
Witness: Madison Diaz

Description:
Smaller irrigation storage pond

