

State of Washington Department of Ecology  
Northwest Regional Office  
**WATER COMPLIANCE INSPECTION REPORT**

substitute for OMB No. 2040-0057  
and EPA form 3560-3 (Rev. 9-94)  
(last file update 12-95.)

**Section A: National Data System Coding (i.e., PCS)**

Transaction Code 1 <b>N</b> 2 <b>5</b>	NPDES # 3 <b>ST0501319</b> 11	yr/mo/day 12 <b>20/01/08</b> 17	Inspection Type 18 <b>C</b>	Inspector 19 <b>S</b>	Facility Type 20 <b>2</b>
Remarks					
Inspection work days 67 <b>1.8</b> 69	Facility Self-Monitoring Evaluation Rating 70 <b>3</b>	BI 71 <b>N</b>	QA 72 <b>N</b>	-----Reserved----- 73 _____ 74 _____ 75 _____ 80	

**Section B: Facility Data**

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number) Terramar Brewery 5712 Gilkey Street Edison, WA 98232	Entry Time/Date 10:00 AM 01/08/20	Permit Effective Date 01/02/2020
	Exit Time / Date 10:50 AM 01/08/20	Permit Expiration Date 12/31/2024
Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s) Chris Barker Owner 360-510-6747	Other Facility Data	
Name, Address of Responsible Official/Title/Phone and Fax Number. Same		
Phone Number _____ Fax Contacted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

**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 type="checkbox"/> Records/Reports	<input checked="" type="checkbox"/> Self-Monitoring Program	<input type="checkbox"/> Sludge Handling/Disposal	<input type="checkbox"/> Pollution Prevention
<input type="checkbox"/> Facility Site Review	<input type="checkbox"/> Compliance Schedules	<input type="checkbox"/> Pretreatment	<input type="checkbox"/> Multimedia
<input type="checkbox"/> Effluent/Receiving water	<input checked="" type="checkbox"/> Laboratory	<input type="checkbox"/> Storm Water	<input checked="" type="checkbox"/> Irrigation system

**Section D: Summary of Findings/Comments**

**INTRODUCTION**

This is a "kick-off" inspection for the permit issued on December 1, 2019, with an effective date of January 1, 2020.

The Terramar Brewery facility is a new microbrewery and distillery located on a former brownfield site at 5712 Gilkey Street, Edison, Washington. The location is unique in that it is surrounded on three sides by Edison Slough, a marine water body near the land application area. For this reason, the site will require careful application and monitoring of its wastewater land treatment so as not to impact groundwater or surface water.

The facility is a former slaughterhouse and used wood dealer. The owner has modified the existing buildings to include areas for the brewing, a large beer/cider tasting room, a smaller distillery tasting room, a take-out wood-fired pizza operation, an art studio, an outdoor recreation area, and an office. Future plans include the addition of a craft coffee roasting operation, and distilling equipment. The facility, as inspected on January 8, 2020, had only fermentation tanks for beer and hard cider.

The former wood dealer area has been top soiled and seeded for use as an outdoor recreation area. New gravel has also been placed on existing pathways. This area serves as the land treatment site for all facility process wastewater. Sanitary wastewater from bathrooms and kitchen areas is handled by a separate sanitary septic system.



## INSPECTION RESULTS

On January 8, 2020 Mr. Chris Martin, Permit Manager and NWRO Water Quality Section Hydrogeologist, did an announced site inspection. Mr. Martin had set-up the meeting date in December to discuss his expectations for the newly issued permit with the Permittee.

Mr. Martin arrived on site at 10:00 AM and met with Mr. Chris Barker (Proprietor) and Mr. Greg Spore (Lead Brewer). The three took up seats in the future distillery tasting area to discuss Ecology expectations for the new permit and to answer any questions from the Permittee. Mr. Martin opened the discussion by stating that he took Mr. Barker's comments on monitoring very seriously. However, due to the unique location (surrounded on three sides by Edison Slough) Mr. Martin wanted to ensure the permit is also protective of the environment. Mr. Martin then discussed his expectations around the monitoring requirements. He wanted to try to "phase-in" the monitoring, by first doing the shallow soil moisture monitoring. Should the results of this monitoring show land applied wastewater to be mounding above a low permeability layer then the next "phase" would be to install vadose wells to monitor/sample this area. Samples from these wells would be subject to the monitoring frequency and parameters specified in Special Condition S2.B. of the permit. If mounding is not found or continued downward migration of irrigated wastewater is evident then groundwater monitoring wells will be installed. These wells will be sampled for the parameters and at the frequency described in Special Condition S2.C of the permit.

Mr. Martin then asked about any questions Mr. Barker may have. Mr. Barker asked about Special Condition S2.E., Crop Monitoring. He stated that the current intent is to mow-and-mulch clippings from the irrigation area. Mr. Martin explained that Section S2.E. applied only if the grass area is harvested. Therefore, there will likely be no information related to this section. Mr. Barker also asked about laboratory accreditation. They have a small lab area for brewing QA/QC. Mr. Martin explained that this section is a carryover from the municipal permit shell and applies only if the facility intends to do on-site analysis of other permit parameters. Mr. Barker stated that his intent is to only perform the non-accredited testing (flow, pH, turbidity, etc.) and send other samples to an off-site accredited laboratory.

Mr. Barker asked about the Groundwater monitoring network evaluation (Special Condition S9.). Mr. Martin explained that his intent was to spread out due dates for permit deliverables, such as the O&M manual and this report so as to assist with spreading out the facilities capital expenditures. At the completion of the discussion, Mr. Barker and Mr. Spore gave a facility tour to Mr. Martin.

Mr. Martin commented on how much the facility had changed from his last visit in March of 2018. The brewery, tasting room, and pizza kitchen opened in August of 2019. The first "stop" was the new tasting room (Photo 1). Mr. Barker stated that this area had been the old cold storage portion of the slaughterhouse, and that during refurbishment they found the old beams with the meat hooks. These were turned into the light fixtures for the bar room. Off the bar room is a larger tasting area with a separate room for groups and a playroom for children.

The group then exited the back (north side) of this building. Mr. Barker pointed out the current storage building used to be a rendering plant when the slaughterhouse was in operation (Photo 2). Photo 3 shows a view, looking North, of the regraded and reseeded former used wood dealer area. Long-term plans for the former wood dealers sawmill area are to possibly convert it into a stage to allow for summer outdoor concerts.

Mr. Barker pointed out the 30,000-gallon wastewater-holding tank. This tank holds neutralized wastewater from brewery cleanup. There are two pumps in this tank. One that discharges to the land treatment area and a second, located about two-thirds of the way up from the bottom that discharges to the wastewater drain field. This placement ensures that little to no solids enter the drain field. Flow to these systems is measured by both a digital and a mechanical flow meter (Photo 4). This valve pit also contains the sampling tap.

The group then proceeded up to the top of the back areas central mound. From here Mr. Barker pointed out the mitigation plantings (Photo 5). Mr. Martin ask for confirmation about the different drain fields. Mr. Barker confirmed the existing sanitary drain field that is still in use (Photo 6), the new sanitary drain field (Photo 7), and the new wastewater drain field (Photo 8). Neither of the new drain fields have been used, but Mr. Barker noted that they had tested the new sanitary drain field, which is why the grass on top is a little greener.

We then returned to the northeast corner of the building. Here Mr. Barker pointed out the new (Photo 9) and existing (Photo 10) sanitary septic tanks. At this time, the facility has only a single restroom. Mr. Barker also showed Mr. Martin the existing sanitary tanks and grease trap from the kitchen area (Photo 11). Mr. Barker also noted that the workshop/office on the adjacent property to the southeast shares this sanitary septic system. This building also has only a single restroom.



The group then entered the brewery portion of the facility through the shipping/receiving area. The south end of this part of the building houses the beer cooler (Photo 12). Grain mixes to be used for brewing are supplied by a local grower in super-sacks and milled onsite (Photo 13). A small auger conveys milled grain up to the distribution hopper. From this hopper the grain mix is reweighed and feed into the brewing area (Photo 14). All fermentation is done in stainless steel tanks with steam heat from a new boiler (Photo 15). Mr. Barker stated that they are waiting on the final permit that will allow distilling of spirits. However, they do have a permit for the production of hard ciders (Photo 16).

Mr. Martin noted the floor trench drain and asked about how wastewater is handled. Any wastewater that reaches the floor drains (i.e., from floor cleaning) is pumped back to a small collection tank (Photo 17). Also all tank cleaning wastewater goes to this collection tank. From here it is pumped into a large neutralization tank. The small collection tank allows for easy addition of caustic or acids for pH adjustment. It also allows for recirculation of the neutralization tank until the contents meet the permit prescribed pH level. Once reaching the appropriate pH the neutralization tank is discharged into the floor trench drain and the valve to a buried 1,000-gallon holding tank (Photo 18) is opened. The neutralization tank discharges through a special sock to collect residual solids and keep them out of the wastewater system (Photo 19). The 1,000-gallon holding tank can be isolated from the 30,000-irrigation tank in the event of a process upset.

The group then went back outside where Mr. Barker showed Mr. Martin the computer control panel for the irrigation system (Photo 20). This system can be programed to apply any specified amount of wastewater to an area. The system also monitors a mini-weather station (Photo 21) and can adjust irrigation timing based on whether there is sun or rain.

The group then went to the front (South end) of the facility (Photo 22) for final wrap-up. There were no more questions from any of the attendees, so Mr. Martin said farewell and departed the site at 10:50 AM.

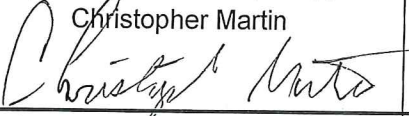
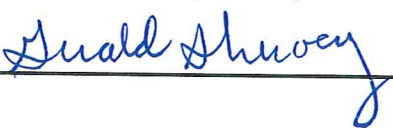
#### DISCUSSION

This is a brand new brewery making use of a former slaughterhouse. The buildings had been empty for some time before Mr. Barker undertook the renovation. The resulting facility is quite clean and good housekeeping was evident.

The local artist who had been using one of the old buildings has moved in permanently and added a showroom (Photo 23). When asked Mr. Barker stated that the business was doing well and drawing in people from Seattle and Vancouver. They have also started distribution to local establishments. Mr. Barker noted that he is hoping to get a restaurant license so that seating can be added to the pizza kitchen, which is currently carry-out only. In addition, as stated earlier, he is awaiting their distilling license so they can set-up the distillery and begin making custom spirits.

Mr. Martin also noted that they would need a SAW account and separate Ecology account to access the Water Quality Portal for the input of data monitoring report information. Mr. Martin further agreed to forward a copy of the EXCEL wastewater spreadsheets to Mr. Barker.

Since the facility has only been opened since August, 2019 (approximately five months) they have not had to land apply any wastewater to date. Ecology has no recommendations at this point.

Name(s) and Signatures of Inspector(s) Christopher Martin 	Agency/Office/Telephone WA Dept. of Ecology NWRO / (425)649-7110 3190 160th SE, Bellevue, WA 98008-5452	Date 2/5/2020
Signature of Management QA Reviewer Jerry Shervey 	Agency/Office/Phone and Fax Numbers WA Dept. of Ecology NWRO / (425)649-7000 Fax: (425)649-7098	Date 2-6-2020

**ANNOUNCED** Inspection



## Appendix E

## INSTRUCTIONS

## Section A: National Data System Coding (i.e., PCS)

**Column 1: Transaction Code.** Use N, C, or D for New Change or Delete. All inspections will be new unless there is an error in the data entered.

**Columns 3-11: NPDES Permit No.** Enter the facility's NPDES permit number. (Use the Remarks columns to record State permit number, if necessary.)

**Columns 12-17: Inspection Date.** Insert the date entry was made into the facility. Use the year/month/day format (e.g., 94/06/30 = June 30, 1994).

**Column 18: 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	

**Column 19: 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

**Column 20: Facility Type.** Use of one of the codes 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

**Columns 21-66: Remarks.** These columns are reserved for remarks at the discretion of the Region.

**Columns 67-69: 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 and submit a QA reviewed report of findings. This estimate includes the accumulative effort of all participating inspectors; any effort for laboratory analyses, testing, and remote sensing; and the billed payroll time for travel and pre and post inspection preparation. This estimate does not require detailed documentation.

**Column 70: 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.

**Column 71: Biomonitoring Information.** Enter D for static testing. Enter F for flow through testing. Enter N for no biomonitoring.

**Column 72: Quality Assurance Data Inspection.** Enter Q if the inspection was conducted as follow-up on quality assurance sample results. Enter N otherwise.

**Columns 73-80:** These columns are reserved for regionally defined information.

## 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).

## Section C: Areas Evaluated During Inspection

Check only those areas evaluated by marking the appropriate box. Use Section D and additional sheets as necessary. Support the findings, as necessary, in a brief narrative report. Use the headings given on the report form (e.g., Permit, Records/Reports) when discussing the areas evaluated during the inspection. The heading marked "Multimedia" may indicate medium such as CAA, RCRA, and TSCA. The heading marked "Other" may indicate activities such as SPCC, BMPs, and concerns that are not covered elsewhere.

## Section D: Summary of Findings/Comments

Briefly summarize the inspection findings. This summary should abstract the pertinent inspection findings, not replace the narrative report. Reference a list of attachments, such as completed checklists taken from the NPDES Compliance Inspection Manuals and pretreatment guidance documents, including effluent data when sampling has been done. Use extra sheets as necessary.



## Photo Addendum – Terramar Brewery



Photo 1 Description: Brewery bar and tasting room.



Photo 2 Description: Former rendering building. Now used for storage.



Photo 3 Description: Looking North at back "yard". Wastewater will be applied to grassy areas.

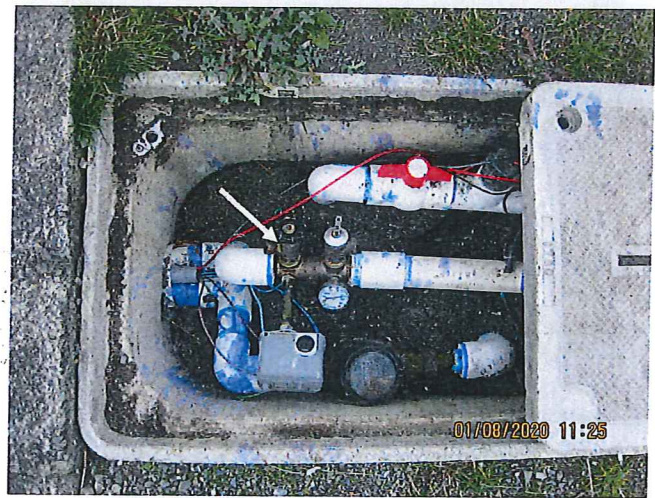


Photo 4 Description: Irrigation system flow meters and sample tap (arrow).



Photo 5 Description: Mitigation plantings.



Photo 6 Description: Existing sanitary drain field.



Photo Addendum – Terramar Brewery



Photo 7

Description: New sanitary drain field (arrow).



Photo 8

Description: New wastewater drain field.



Photo 9

Description: New sanitary septic tanks.



Photo 10

Description: Existing sanitary septic tanks.



Photo 11

Description: Kitchen area sanitary septic tanks. Arrow shows grease trap.



Photo 12

Description: Inside beer cooler.



## Photo Addendum – Terramar Brewery



Photo 13

Description: Dry material storage and milling machine.



Photo 14

Description: Milled grain hopper and feed to brewery area.



Photo 15

Description: New steam boiler.



Photo 16

Description: Fermentation tanks for hard cider.



Photo 17

Description: Wastewater collection "tank" and pump to neutralization tank (seen at upper right).



Photo 18

Description: Buried 1,000-gallon storage tank.



## Photo Addendum – Terramar Brewery



Photo 19

Description: Discharge with solids sock from neutralization tank.

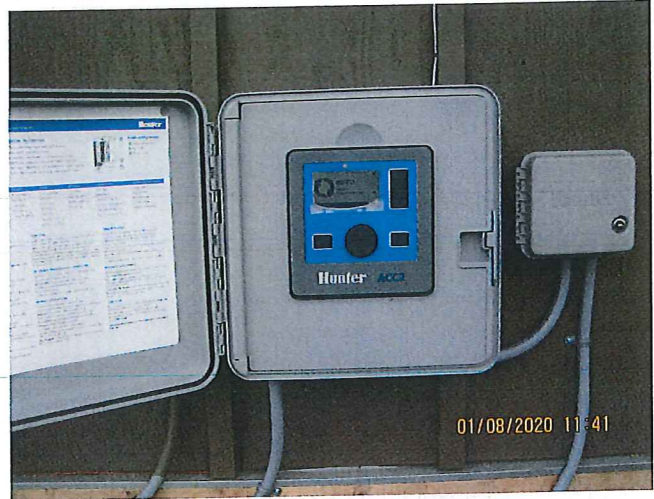


Photo 20

Description: Digital irrigation control panel.

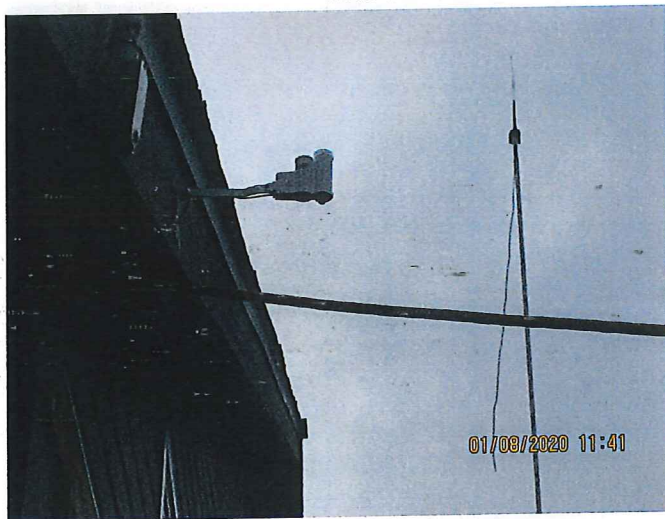


Photo 21

Description: Mini-weather station to irrigation controller.



Photo 22

Description: Front entrance to the facility.



Photo 23

Description: Artist showroom and workshop.