



WATER COMPLIANCE INSPECTION REPORT

State of Washington Department of Ecology
15700 Dayton Avenue N, Shoreline, WA 98133

WADOE Inspection Form

Facility Type: Shipyard
 Industrial Boatyard
 Construction S & G

Section A: General Data

Inspection Date 02/01/2024	NPDES Permit # WA0031836	County King	Receiving Waters Groundwater and South Fork of the Snoqualmie River	Inspector Jeanne Tran	Facility Type Industrial
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Discharges to: Surface Water Ground Water

ANNOUNCED Inspection

Section B: Facility Data

Name and Location of Site Washington State Fire Training Academy 50810 SE Grouse Ridge Road North Bend, WA 98045	Entry Time 11:20 am	Permit Effective Date 09/15/2016
	Exit Time 2:27 pm	Permit Expiration Date 09/30/2021
On-Site Representative(s): Name(s)/Title(s) Katie Rasmussen Assistant Commander	Additional Participants: Liora Llewellyn and Bryan McKinnon from King County Stormwater Compliance Unit	
Responsible Official(s): Kelly Merz, Interim Commander	Weather: Cloudy and light rain Photos Taken? Yes	

Section D: Summary of Findings/Comments

BACKGROUND

WA State Fire Training Academy (FTA) provides training and certification for fire and emergency response to personnel throughout the state of Washington. Fire training wastewater is collected and treated prior to discharge to groundwater via infiltration and surface water via an unnamed creek to the South Fork of the Snoqualmie River. The discharge is authorized under NPDES Permit No. WA0031836. The purpose of this visit was to conduct a compliance inspection and was an announced joint inspection with King County's Stormwater Compliance Unit, coordinated with FTA Assistant Commander, Katie Rasmussen.

INSPECTION/OBSERVATIONS

Ecology representative Jeanne Tran met with King County representatives Liora Llewellyn and Bryan McKinnon, Water & Wastewater Services representative Erik Thornburgh, and Assistant Commander Katie Rasmussen at the facility at 11:20 am. The group convened at an office to share information about everyone's role, and to discuss the facility's operation including the status of its treatment systems and challenges it encountered.

Liora and Bryan with King County Stormwater Compliance Unit have the role of overseeing the facility's management compliance with hazardous waste as the facility is classified as a small quantity generator and source control. Jeanne with Ecology has the role of overseeing the facility's compliance with the NPDES Permit. Erik is the technical consultant to the facility that operates the facility's MBR treatment system and collects wastewater samples to comply with the facility's state waste discharge permit and the NPDES Permit.

We began our inspection tour at the stormwater pond which consists of 5 cells with Cells 4 and 5 being newly constructed in 2022. The cells are connected in series where water flows from Cells 1 to 5 through underground connecting/equalizing pipes. Cells 1 and 2 are lined, and Cells 3-5 are not lined where water can infiltrate into the ground or flow from one cell to the next when the water level is above the outlet pipe elevation. During the inspection, there was water observed in Cells 1 and 2 and some water in Cells 3 and 4 as seen in photos 1-2. Cell 4 is located on the east side of the MBR treatment building. Cell 5 is located west of the MBR treatment building, and no water was observed in Cell 5 during the inspection (photo 3).

Next, we entered the MBR treatment building. Erik gave us a walk-through of the MBR treatment system and pointed out where he collects treated wastewater samples. This system treats domestic wastewater to meet Class A water quality standards for reuse. The treated water is pumped to the training pond for reuse for firefighting exercises. After the MBR tour, Erik departed the facility and Katie assisted us with the rest of the inspection.

Katie led us to the dissolved air floatation (DAF) and aeration system. The DAF and aeration treatment system were added as part of the major upgrade of reconfiguring the 2 existing separate systems into one with add-on advanced treatment for

the facility to conduct training exercises using firefighting training foam. After the upgrade was completed in late 2020, the facility began to use the approved fluorine-free firefighting foam known as MicroBlaze Out for training exercises at the site. The DAF and the aeration system were being winterized and not in operation during the inspection. WaterTectonics is contracted to operate the DAF system for the facility. Katie informed us that the DAF was not winterized during the first year after it was installed which led to frozen and busted pipes and required extensive repair. WaterTectonics recommended the system be winterized from December to March every year (See photos 4-7 of the DAF system) due to the low frequency of training exercises during the winter months along with the aforementioned frozen pipes. The DAF treatment system was installed on a paved pad with a drain that connects to the oil water separator (photo 5).

Photos 7 and 8 show training pond 2 with an array of 5 aerators in the pond.

Next, Katie escorted us to the air respirator building where self-contained air respirators or breathing apparatus are stored for the trainees. The waste materials from this building appeared to be properly managed. After the inspection was completed at this building, Liora and Bryan departed the facility and Jeanne continued with inspecting the rest of the site.

Katie gave Jeanne a ride to the Aircraft Rescue and Firefighting Facility (ARFF) on the upper plateau. We inspected the old treatment building. This building is used for the temporary storage of treatment chemicals for the DAF system. Jeanne observed several large poly-containers storing sodium hydroxide (aka caustic) and flocculant agent poly aluminum chloride. (photos 9-11), and a nearby floor drain. This drain is connected to a large underground vault which is currently not being used. The underground vault was part of the old treatment system for the wastewater collected from the ARFF training exercises. This treatment system has been dismantled and reconfigured to route all wastewater from the upper plateau to the centralized treatment system located in the lower yard. Any spills or rinse water will be collected by this underground vault.

After we exited the building, we walked toward the ARFF prop. Since the 2015 fuel line incident at the ARFF prop, it has not been used for training exercises again. Katie informed Jeanne that the facility is considering decommissioning the prop and converting the area for other uses.

We then walked toward the fuel tanks (See photos 12-14). There are 3 aboveground fuel tanks but only two are being used to store off-spec diesel. The far-left tank shown in photo 12 is empty. Each tank has a storage capacity of 20,000 gallons. All three tanks are stored within a containment dike. There is a metal grated drain in this containment which drains to the oil water separator located in the lower yard. No standing water was observed in the containment area.

Next to the aboveground tanks are two double-walled 1,000-gallon horizontal fuel tanks. These horizontal tanks store roadway fuel for the facility. As can be seen in photo 13, these two tanks are situated on a paved ground with a floor drain located adjacent to the 3rd metal pole from the left. This drain line is plumbed into the containment area, so any spills or water from the paved area can be collected and eventually drained to the oil water separator.

The adjacent two propane tanks store fuel for firefighting training exercises with permanent hookup lines. Katie informed me that the facility is waiting for an approved budget to relocate these propane tanks to the lower yard, to be closer to the connecting props. No activity occurred on the upper plateau during the inspection.

Next, Katie gave Jeanne a ride back to the lower yard. There were no training exercises that occurred that day. We walked to several burn pads with props. Each dedicated burn pad contains a metal grated drain to route firefighting oily water to the oil water separator (See photos 15 to 17). Photo 18 shows the fuel meter (in yellow) to measure the amount of fuel for use in each training exercise.

We walked to the oil water separator. The oil water separator consists of 4 bays with 2 not working since December 2023. The two bays out of commission were due to the failure of the skimmer pumps. The facility is waiting for parts to come in for repair. Next to the 4-bay oil water separator is the underground waste oil vault. This vault collects the skimmed floating oil and a mixture of oily water. The dissolved oily water accumulates at the bottom of the vault and is pumped back to the oil water separator. This vault pump was not working and waiting for repair. Clean Harbor was contracted to remove the mixture of oily wastewater and buildup sludges off-site for disposal.

Since the inspection, the skimmer pumps have been repaired and have been brought back online since February 19, 2024. The vault pump was repaired and back in service on March 27, 2024.

We continued the walk-through inspection at the lower yard to the training ponds and the pump house (photo 21). We entered the pump house (red building) and looked at the pumps and the control panel for the pumps (photo 22). Besides the pumps, a spill kit, and a few equipment, nothing else was observed in this building.

An electrical transformer on a concrete pad is located northeast of the pump house. The oil capacity of this transformer is estimated at 200 gallons of mineral oil. This transformer is owned and operated by Puget Sound Energy.

We continued to walk around Pond 3 and then followed the route to the stormwater pond. Ecology inspector Jeanne exited the facility at approximately 2:27 pm after the walk-through inspection was completed.

Section E: Compliance/Recommendations

Recommendation:

Ecology recommends the facility have at least one backup pump available onsite to swap out the failed pump during emergencies.

For questions about this report, please contact Ecology Inspector Jeanne Tran at vutr461@ecy.wa.gov, (425) 395-2456, or Jeanne Tran at jtra461@ecy.wa.gov, (425) 531-8311, or Dept. of Ecology, Water Quality Program, 15700 Dayton Ave. N., Shoreline WA 98133.

For assistance with any of these compliance issues, see NPDES Permit No. WA031836 and the Stormwater Management Manual for Western Washington. To obtain a copy of the SWMM you may go to Ecology’s website at: <http://www.ecy.wa.gov/programs/wq/stormwater/manual.html>

The Department of Ecology has the authority to issue formal enforcement actions including issuance of orders and civil penalties of up to \$10,000 per day per violation for violations of your NPDES permit and/or state laws and regulations.

Ecology’s contact: Jeanne Tran, facility manager, should be contacted at (425) 5311-8311 with permit-related questions.

Attachments: Photos and site map.

Copies to: PARIS, WQ 6.1

Signatures

Name(s) and Signatures of Inspector(s)	Agency/Office/Telephone	Date
Jeanne Tran 	WA Dept. of Ecology, NWRO, (425) 531-8311	04/02/24
Signature of Management Q A Reviewer Monika Kannadaguli 	Agency/Office/Phone and Fax Numbers WA Dept. of Ecology/ NW Regional Office/ 206-594-0000	Date 04/02/2024

PHOTO ADDENDUM –WA STATE FIRE TRAINING ACADEMY,. WA0031836



PHOTO #:01 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: STORMWATER DETENTION POND CONSISTING OF 5 CELLS. THIS PICTURE SHOWS CELLS #1-3.

PHOTO #:02 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: THE PHOTO SHOWS STORMWATER DETENTION POND CELL #4, LOCATED ACROSS THE ROADWAY FROM CELLS #1-3, NEXT TO THE MEMBRANE BIOREACTOR (MBR) TREATMENT SYSTEM FOR THE FACILITY’S DOMESTIC WASTEWATER.



PHOTO #:03 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: THIS PHOTO SHOWS CELL #5 WHICH IS LOCATED ON THE OTHER SIDE OF THE MBR SYSTEM. SEE THE ATTACHED STORMWATER FLOW DIAGRAM.

PHOTO #:04 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: DISSOLVED AIR FLOATATION SYSTEM (DAF). THE DAF ALONG WITH THE AERATION SYSTEM WAS APPROVED IN LATE 2019 AND THIS UPGRADE TO THE EXISTING SYSTEM WAS CONSTRUCTED IN 2020.

PHOTO ADDENDUM –WA STATE FIRE TRAINING ACADEMY, WA0031836



PHOTO #:05 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: ANOTHER VIEW OF THE DAF. THE RED COVER BIN STORES SLUDGE BUILDUP.



PHOTO #:06 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: THE TOP VIEW OF THE DAF UNIT. THE UNIT WAS BEING WINTERIZED AND NOT IN OPERATION DURING THE INSPECTION.



PHOTO #:07 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: THE TREATED WATER FROM THE DAF SYSTEM IS PUMPED TO POND 2 WHERE IT RECEIVES AERATION. SINCE THE DAF WAS BEING WINTERIZED, THE AERATION SYSTEM WAS NOT TURNED ON.



PHOTO #:08 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: A CLOSE-UP VIEW OF AN ARRAY OF FIVE LATERALS AERATION SYSTEM INSTALLED AT POND 2. AERATION ALLOWS INCREASED CONTACT TIME TO REDUCE CONTAMINANT LEVELS.

PHOTO ADDENDUM –WA STATE FIRE TRAINING ACADEMY, WA0031836



PHOTO #:09 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: THE OLD TREATMENT BUILDING LOCATED IN THE ARFF AREA ON THE UPPER PLATEAU IS USED TO STORE TREATMENT CHEMICALS.

PHOTO #:10 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: LIQUID CAUSTIC FOR THE DAF SYSTEM.



PHOTO #:11 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: FLOCCULANT POLY ALUMINUM CHLORIDE IS USED FOR THE DAF SYSTEM.

PHOTO #:12 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: THREE UPRIGHT FUEL TANKS, 2 DOUBLE-WALLED HORIZONTAL FUEL TANKS, AND 2 PROPANE TANKS ARE STORED ON THE ARFF, UPPER PLATEAU AREA.

PHOTO ADDENDUM –WA STATE FIRE TRAINING ACADEMY, WA0031836



PHOTO #:13 DATE: 02/01/2024
TAKEN BY: JEANNE TRAN
DESCRIPTION: A CLOSEUP VIEW OF THE HORIZONTAL DOUBLE-WALLED FUEL TANKS AND THE PROPANE TANKS.

PHOTO #:14 DATE: 02/01/2024
TAKEN BY: JEANNE TRAN
DESCRIPTION: OUTDOOR TANKS IN CONTAINMENT.



PHOTO #:15 DATE: 02/01/2024
TAKEN BY: JEANNE TRAN
DESCRIPTION: ONE OF THE BURN PADS WITH PROP. NOTE THE DRAIN WITHIN THE BURN PAD TO COLLECT FIRE FIGHTING OILY WATER TO THE OIL WATER SEPARATOR.

PHOTO #:16 DATE: 02/01/2024
TAKEN BY: JEANNE TRAN
DESCRIPTION: ANOTHER BURN PAD WITH DRAIN.

PHOTO ADDENDUM –WA STATE FIRE TRAINING ACADEMYWA031836



PHOTO #:17 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: ANOTHER BURN PAD WITH DRAIN.

PHOTO #:18 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: FUEL METER TO MEASURE THE AMOUNT OF FUEL USED AT BURN PAD FOR EACH FIREFIGHTING EXERCISE.



PHOTO #:19 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: OIL WATER SEPARATOR (OWS) WITH 5 BAYS. THE SKIMMER PUMP WAS NOT WORKING AND WAITING FOR REPAIR. THEY ARE ALSO WAITING FOR CLEAN HARBOR TO COME REMOVE THE WASTE OIL AND GET THE SEPARATOR BACK ONLINE.

PHOTO #:20 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: A CLOSE-UP VIEW OF THE OWS AND THE UNDERGROUND VAULT TO COLLECT SKIMMED WASTE OIL.

PHOTO ADDENDUM –WA STATE FIRE TRAINING ACADEMY, WA0031836



PHOTO #:21 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: A VIEW OF THE PUMP HOUSE AND TRAINING POND #3.



PHOTO #:22 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: PUMP HOUSE CONTROL PANEL.

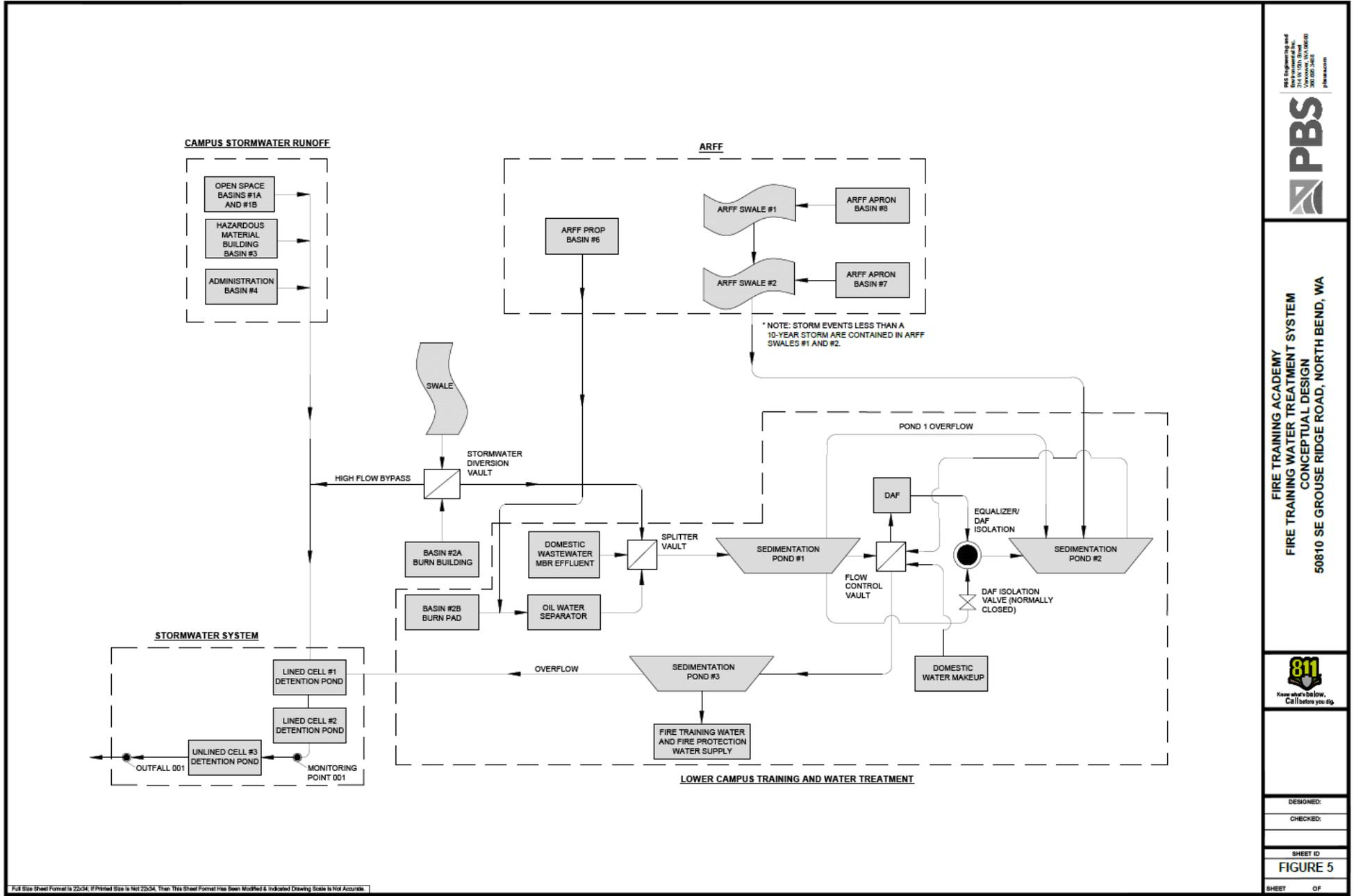


PHOTO #:23 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: ONE OF THE YARD DRAINS. NO OILY SHEEN WAS OBSERVED ON THE WATER INSIDE THE DRAIN.



PHOTO #:24 DATE: 02/01/2024
 TAKEN BY: JEANNE TRAN
 DESCRIPTION: ANOTHER DRAIN AND NO OILY SHEEN WAS OBSERVED AT THIS DRAIN EITHER.

Image: Flow Diagram



PBS Engineering and Environment Inc. Vancouver, WA 98601 360.583.3811 pbse.com



FIRE TRAINING ACADEMY
FIRE TRAINING WATER TREATMENT SYSTEM
CONCEPTUAL DESIGN
50810 SE GROUSE RIDGE ROAD, NORTH BEND, WA



DESIGNED:
CHECKED:
SHEET ID
FIGURE 5
SHEET OF

Figure 1 Process flow diagram

