



**Lynnwood Link Extension L300**

**Contract No. RTA/CN 0010-16**

## **Slug Discharge Operations and Maintenance Manual**

Department of Ecology State Waste Discharge Permit #ST0501325

S8.a.1

WAC 173-240-150

**March 22, 2021**

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## Slug Discharge Operations and Maintenance Manual

### Revision History

Revision Number	Revision Date	Description of Changes
00		

# **Slug Discharge Operations and Maintenance Manual**

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## 1.0 Introduction

The Slug Discharge Operation and Maintenance Manual (OMM) has been prepared for Skanska in support of Sound Transit's Lynnwood Link Extension Project (L300) in Montlake Terrace, WA. The OMM has been designed in accordance with the Department of Ecology State Waste Discharge Permit Special Condition 8.a.1 and WAC 173-240-150. Skanska will be responsible for implementing the maintenance and compliance monitoring outline in the OMM. O'Neill Service Group (OSG) will work closely with Skanska to implement field operations, monitoring, and reporting per the OMM.

### 1.1 Responsible Personnel

The following table lists the names, titles, and contact information for the personnel responsible for implementing the OMM.

*Table 1. Project Personnel*

Name and Title	Contact Information
<b>Katie Dale</b> Environmental Engineer	Company: SKANSKA Cell Phone: 206-561-6181
<b>Adrian Zoodsma</b> Environmental Engineer	Company: SKANSKA Cell Phone: 206-445-4632
<b>Rick Truitt</b> TESC Superintendent	Company: SKANSKA Cell Phone: 575-590-0211
<b>Bill Jordan</b> CSEMS (Environmental Manager) (Primary 24/7 Environmental Contact)	Company: O'Neill Service Group Office Phone: 425-429-7800 Cell Phone: 425-457-0642
<b>Zane Sharif</b> Environmental Compliance Inspector (CESCL)	Company: O'Neill Service Group Office Phone: 425-429-7800 Cell Phone: 425-449-9923

## 2.0 DISCHARGE PRACTICES

The pre-treatment system schematics shown in C.2 of the permit application detail the baker tank system that will be used for the Project (Attachment A). The system will discharge to the Montlake Terrace Sewer at the approved discharge locations identified as MLT 7-13; MLT B-2; MLT 3-21A; and MLT 3-56 (Table 3). Only one discharge point will be active at any given time. The Project's pre-treatment systems will be inspected daily, when in use, to ensure the system is functioning as intended and there is adequate storage capacity throughout construction. Discharges leaving the system will be monitored for the parameters listed in Table 4 below at the indicated frequency in Table 2. The pre-treatment system will utilize a weir-tank connected to an open-top tank to minimize slug and sediment. CO<sub>2</sub> will be used to control pH within effluent limits. Discharges will be released in batches rather than continuous to ensure all monitoring requirements are satisfied.

Table 2. Monitoring requirements

Parameter	Units	Laboratory Method	Sampling Frequency	Sample Type
<b>The following monitoring requirements are applicable to all outfalls. The discharge locations authorized in this permit are outlined in Table 3.</b> The Permittee must take a sample from all outfalls that discharge in any given month.				
Flow – total for all discharge points	gpd	N/A	Daily	Calculated
Flow – for each specific discharge point	gpd	N/A	Daily	Metered
Settleable Solids	mL/L	SM 2540-F	Weekly	Grab <sup>a</sup>
Oil and Grease (Hexane Extractable Material)	mg/L	EPA 1664 A or B	Monthly	Grab
Total Residual Chlorine <sup>b</sup>	mg/L	SM 4500 Cl G	Daily	Grab
pH	Standard Units	SM 4500-H <sup>+</sup> B	Daily	Grab
<sup>a</sup>	Grab means an individual sample collected over a 15 minute, or less, period.			
<sup>b</sup>	The Permittee only needs to monitor for total residual chlorine when discharging process wastewater generated from drilling which utilizes the polymer slurry.			

Table 3. Outfall locations

Discharge Location Name	MLT Asset Identifier	Approximate Coordinates <sup>a</sup> (NAD83/WGS84 reference datum)
The Permittee is only authorized to discharge to one outfall at any given time.		
Area 6 (south of 236 <sup>th</sup> Street)	MLT 7-13	47.780142, -122.316375
Area 7 (MLT Transit Center)	MLT B2 (new manhole)	47.784962, -122.315672
Area 9 (south of 228 <sup>th</sup> Street)	MLT 3-21A	47.792170, -122.316857
Area 10 (Melody Hill yard)	MLT 3-56	47.797603, -122.316832

<sup>a</sup> Outfalls are located at the MLT Asset Identifier. Approximate coordinates are given to help in locating the outfalls.

Table 4. Effluent limits

Parameter	Maximum Daily <sup>a</sup>
The following effluent limits are applicable to all outfalls. The outfalls authorized in this permit are outlined in Table 3.	
The Permittee is only authorized to discharge to one outfall at any given time.	
Flow – total for all discharge points (gpd)	Dry season <sup>b</sup> – 312,000 Wet season <sup>b</sup> – 96,000
Flow – total for each specific discharge point (gpd)	Report Only
Discharge Rate (gpm)	Dry season: Off peak <sup>c</sup> – 250 Peak <sup>c</sup> – 150  Wet season: Off peak – 100 Peak – No discharge allowed
Settleable Solids (mL/L)	7
Oil and Grease (mg/L)	100
Total Residual Chlorine (mg/L)	Report Only

Parameter	Daily Minimum	Daily Maximum
pH (standard units)	5.0	11.0

<sup>a</sup>	Maximum daily effluent limit means the highest allowable daily discharge. The daily discharge means the maximum discharge of a pollutant measured during a calendar day.
<sup>b</sup>	Dry season means between May 1 and September 30. Wet season means between October 1 and April 30.
<sup>c</sup>	Off peak means between the daytime hours of 9am to 5pm and nighttime hours of 8pm to 4am. Peak means between the morning hours of 4am to 9am and evening hours of 5pm to 8pm.

## 2.1 SAMPLING PROTOCOL

Sampling will occur for parameters and frequencies outline in Table 2. Skanska will coordinate with OSG to meet sampling requirements. Skanska will document flow, settleable solids, pH, and chlorine. OSG

will sample for oil and grease. Oil and grease samples will be analyzed at a 173-50 WAC accredited lab. Sampling data will be reported monthly in the Discharge Monitoring Report (DMR) submitted to the Department of Ecology via the WQWebPortal. The form that is to be filled out and submitted is included as Attachment B.

### **3.0 NON-COMPLIANT PROTOCOLS**

For non-complaint reporting protocols reference S3.F. of the State Waste Discharge Permit ST0501325.

#### **3.1 NON-COMPLIANT CONTACTS**

If any noncompliance occurs that may endanger health or the environment immediately, a notification must be made to one of the following Ecology contacts within 24-hours.

- Northwest Regional Office: (425) 649-7000
- Edmonds WWTP: (425) 771-0237
- Mountlake Terrace Sewer District: (425) 670-8264

#### **3.2 EMERGENCY RESPONSE EQUIPMENT**

Spill response kits will be maintained near hazardous materials and equipment and will be immediately accessible to project personnel. The Project's spill kits will be checked during site inspections by the Project's CSEMS and/or Certified Erosion and Sediment Control Lead (CESCL) to ensure the on-site spill kits are adequately stocked with spill response materials. Spill kits will be stocked with the following (or similar) materials.

- Absorbent pads
- Absorbent booms
- Absorbent Litter or Powder
- Nitrile gloves
- Disposal bags

The various absorbent materials found in the on-site spill kits are used for specific types of spills. Absorbent pads and booms are used for the cleanup of a petroleum spill onto water. Absorbent litter or powder is used for the cleanup of spills onto paved surfaces, asphalt, or concrete.

## **4.0 SAFETY TRAINING**

Prior to starting work on-site, Project personnel include, but not limited to, craft workers, subcontractors, vendors, field engineers, and inspectors will be required to attend Project Orientation Training that will include spill response and awareness training.

## **5.0 SUPPLIERS**

Local providers will be used to acquire CO2 and baker tanks, as necessary.

### **4.1 SUPPLIER CONTACTS**

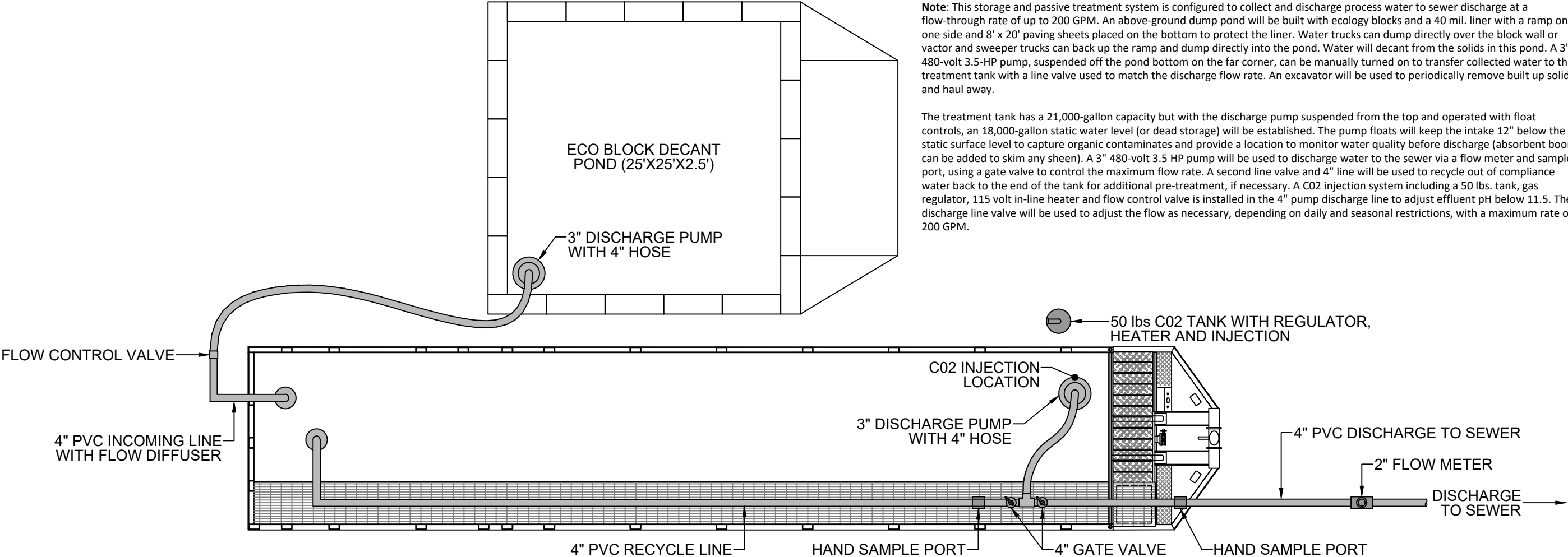
- ProVac Clean Services: (425) 432-8005
- Northwest Soil Cement LLC: (425) 864-1645



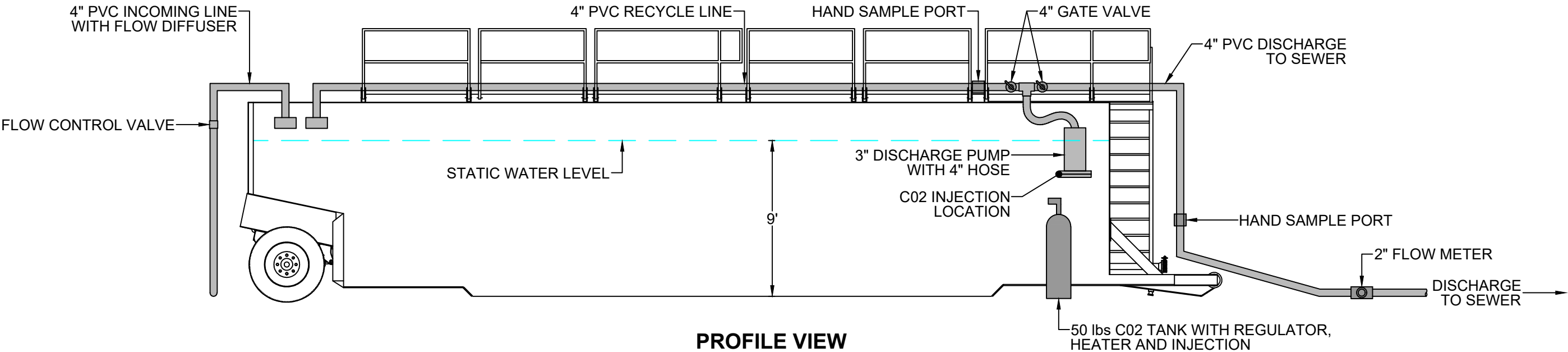
## **Attachment A**

### Treatment System Schematics

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**PLAN VIEW**  
NOT TO SCALE



**PROFILE VIEW**  
NOT TO SCALE

**Note:** This storage and passive treatment system is configured to collect and discharge process water to sewer discharge at a flow-through rate of up to 200 GPM. An above-ground dump pond will be built with ecology blocks and a 40 mil. liner with a ramp on one side and 8' x 20' paving sheets placed on the bottom to protect the liner. Water trucks can dump directly over the block wall or vactor and sweeper trucks can back up the ramp and dump directly into the pond. Water will decant from the solids in this pond. A 3" 480-volt 3.5-HP pump, suspended off the pond bottom on the far corner, can be manually turned on to transfer collected water to the treatment tank with a line valve used to match the discharge flow rate. An excavator will be used to periodically remove built up solids and haul away.

The treatment tank has a 21,000-gallon capacity but with the discharge pump suspended from the top and operated with float controls, an 18,000-gallon static water level (or dead storage) will be established. The pump floats will keep the intake 12" below the static surface level to capture organic contaminants and provide a location to monitor water quality before discharge (absorbent boom can be added to skim any sheen). A 3" 480-volt 3.5 HP pump will be used to discharge water to the sewer via a flow meter and sample port, using a gate valve to control the maximum flow rate. A second line valve and 4" line will be used to recycle out of compliance water back to the end of the tank for additional pre-treatment, if necessary. A CO2 injection system including a 50 lbs. tank, gas regulator, 115 volt in-line heater and flow control valve is installed in the 4" pump discharge line to adjust effluent pH below 11.5. The discharge line valve will be used to adjust the flow as necessary, depending on daily and seasonal restrictions, with a maximum rate of 200 GPM.

PREPARED FOR	BY	LYNNWOOD LINK EXTENSION (L300) NE 200TH STREET TO LYNNWOOD CITY CENTER CONTRACT NO. RTA/CN 0010-16	Drawn By:	J. Stewart
			Reviewed By:	M. Foster
SKANSKA	OSG O'Neill Service Group	MOUNTLAKE TERRACE - MELODY HILL PROCESS WATER TREATMENT SYSTEM	Approved By:	M. Foster
			Date:	May 2019
			Project No.:	1883

## **Attachment B**

Discharge Monitoring Sheet

[illegible]





[illegible]

## **Attachment C**

### Operation Instructions



## L300: City of Mountlake Terrace Sewer Discharge SOP

### Requirements per the Permit:

- pH maximum 11.0
- Can only discharge one system at a time.

1. Prior to discharging, a sample for pH and TSS must be taken. TSS must be below 7mL/L; pH must be between 5 and 11 prior to discharge. A sample must be taken for Fats/Oils once per month. Flow meter should be recorded at the beginning and end of each discharge. Samples can be taken from the nozzle at the top of the open-top tank.



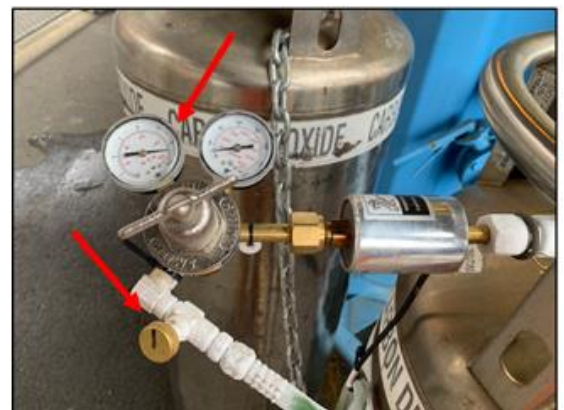
2. To reduce pH, open the CO2 tank valve to sparge the system with CO2 until pH is reduced below 11.0. To turn on the CO2 system:

- a. Make sure CO2 regulator is connected to the CO2 tank and the valve from the CO2 tank is in the fully open position.



- b. Make sure heating unit for the CO2 regulator is plugged in.

- c. Adjust CO2 as needed with the small needle control valve to about 12 PSI. If pH is still above 11.00, adjust CO2 regulator VERY SLIGHTLY using the needle valve to inject more CO2.



3. To begin discharge, flip the float up. Once the discharge is complete, flip the float down to stop discharge. Turn CO2 needle control valve to off position, close CO2 tank, and unplug heating unit.

