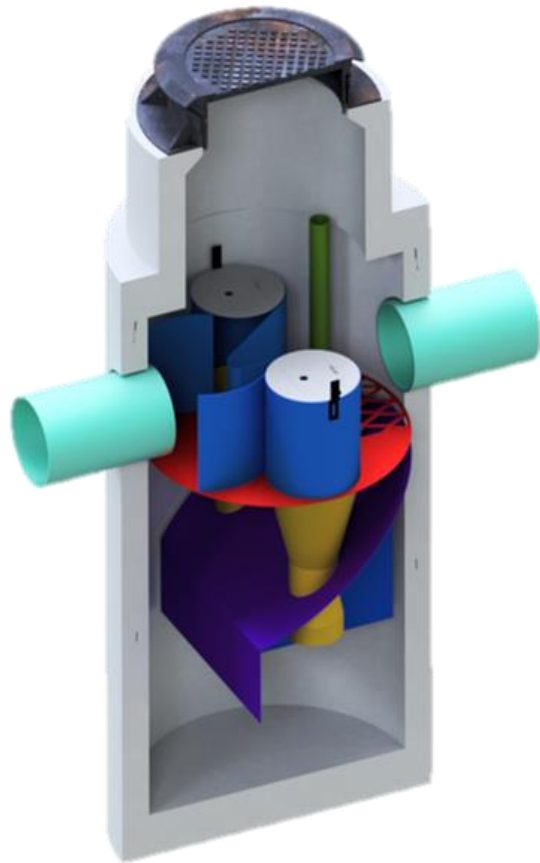




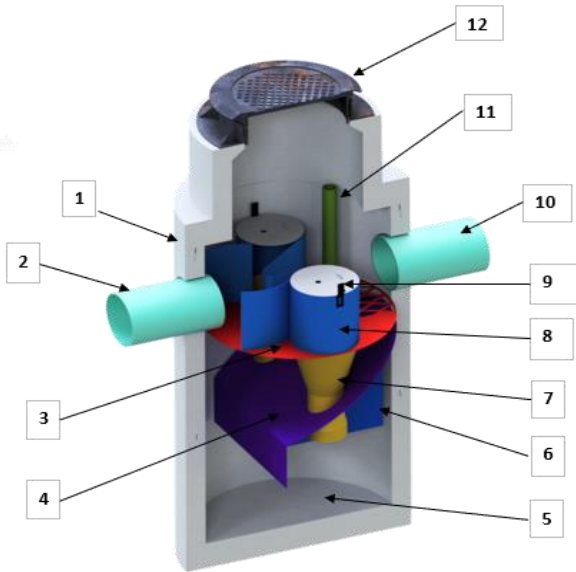
NEXT STORM

# MAINTENANCE MANUAL

## SDD3 - OIL GRIT SEPARATOR



The SDD3 is an innovative stormwater treatment system that ensures maximum removal of suspended solids and oils without the risk of resuspension.



| Item | Description                       |
|------|-----------------------------------|
| 1    | Reinforced concrete manhole cover |
| 2    | Inlet pipe                        |
| 3    | Horizontal plate                  |
| 4    | Oblique plate                     |
| 5    | Sediment storage area             |
| 6    | Oil storage area                  |
| 7    | Vortex                            |
| 8    | Centrifuge plate                  |
| 9    | Protection grid                   |
| 10   | Outlet pipe                       |
| 11   | Oil tank access hose              |
| 12   | Cast iron frame and cover         |

# INTRODUCTION

In order to ensure the proper functioning of the SDD3 and to avoid the resuspension of oils and sediments, it is important to perform periodic maintenance. The maintenance frequency of the SDD3 may vary depending on the installation site. Therefore, to determine the sediment and oil supply for the specific location of the unit, we recommend that SDS3 be inspected every six months during its first year of operation. Thereafter, this frequency can be adjusted as required.

Maintenance of the SDD3 is simple and carried out entirely from the ground surface, without having to enter the unit. In addition, no disassembly of the internal system is required. To facilitate handling, the SDD3 should be serviced in dry weather and in accordance with local safety regulations. It is the responsibility of the users to determine and implement appropriate safety and environmental practices.

Cleaning of SDD3 is recommended when the sediment level exceeds 75% of the storage capacity, which is a value less than or equal to the maintenance threshold (S) indicated in Appendix 1. The maximum sediment storage level (C) is also indicated in Appendix 1. When oil is present in the unit, a preliminary cleaning of the unit is desirable to reduce disposal costs.

The reference parameters for SDD3 maintenance are shown in Figure 1.

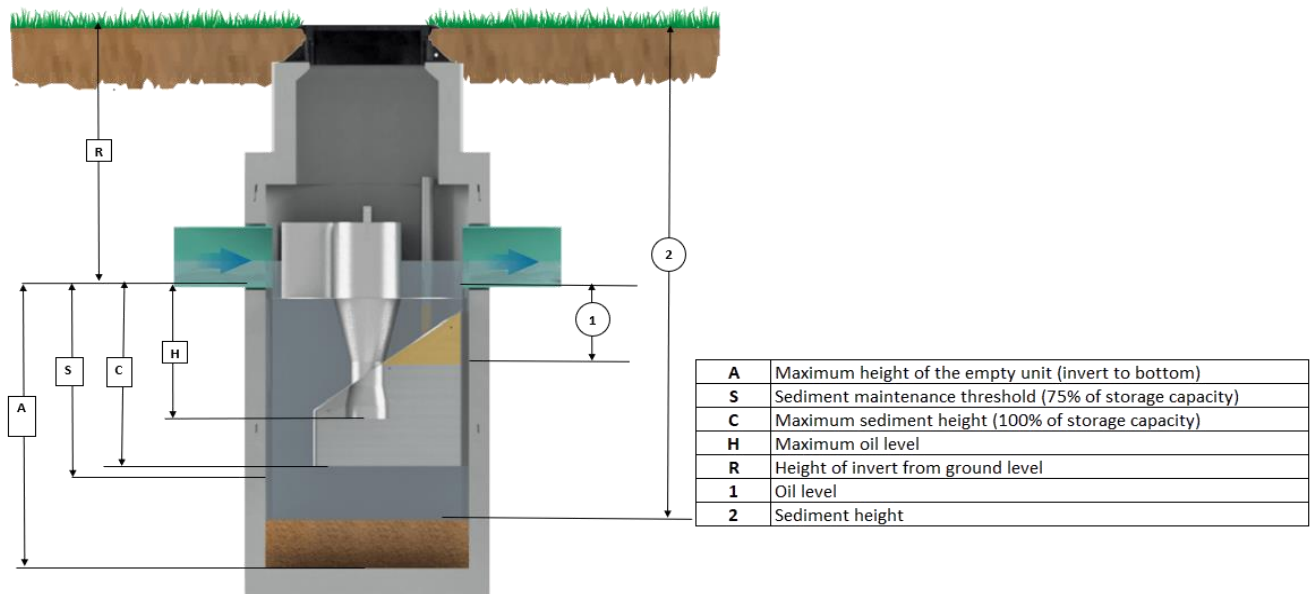
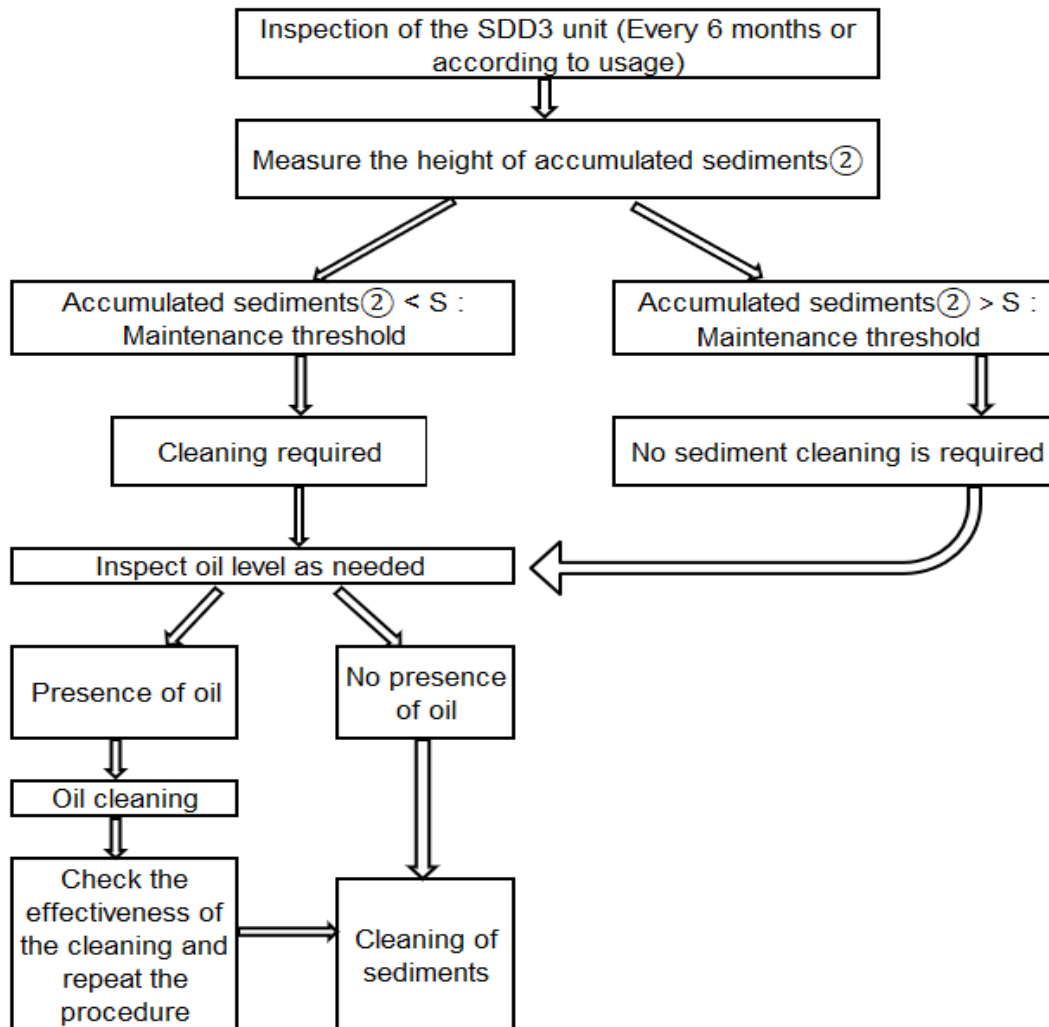


Figure 1 : Reference parameters for the maintenance of SDD3

# INSPECTION METHODS FOR SDD3

The following diagram provides an overview of the frequency and criteria for maintenance of the SDD3 system. The steps will be described in the following diagram.



During inspections, the following steps should be followed to obtain the information necessary to assess cleaning needs. This is done by completing the inspection form (see Appendix 2).

## 1. Oil Level Inspection (Figure 2)

Step 1: Remove the cast iron cover to access the SDD3 or the valve box cover which gives direct access to the oil cleaning hose (models SDD3-1800 and above).

Step 2: Slowly insert an oil level sampler, such as a sludge judge or equivalent, into the vertical pipe provided.

Step 3: Lower the sampler to level H, then quickly remove it and check the oil level. This step should be done slowly in order to get as accurate a picture as possible of the oil level in the unit.

Step 4: Record the data collected on the inspection form (Appendix 2).

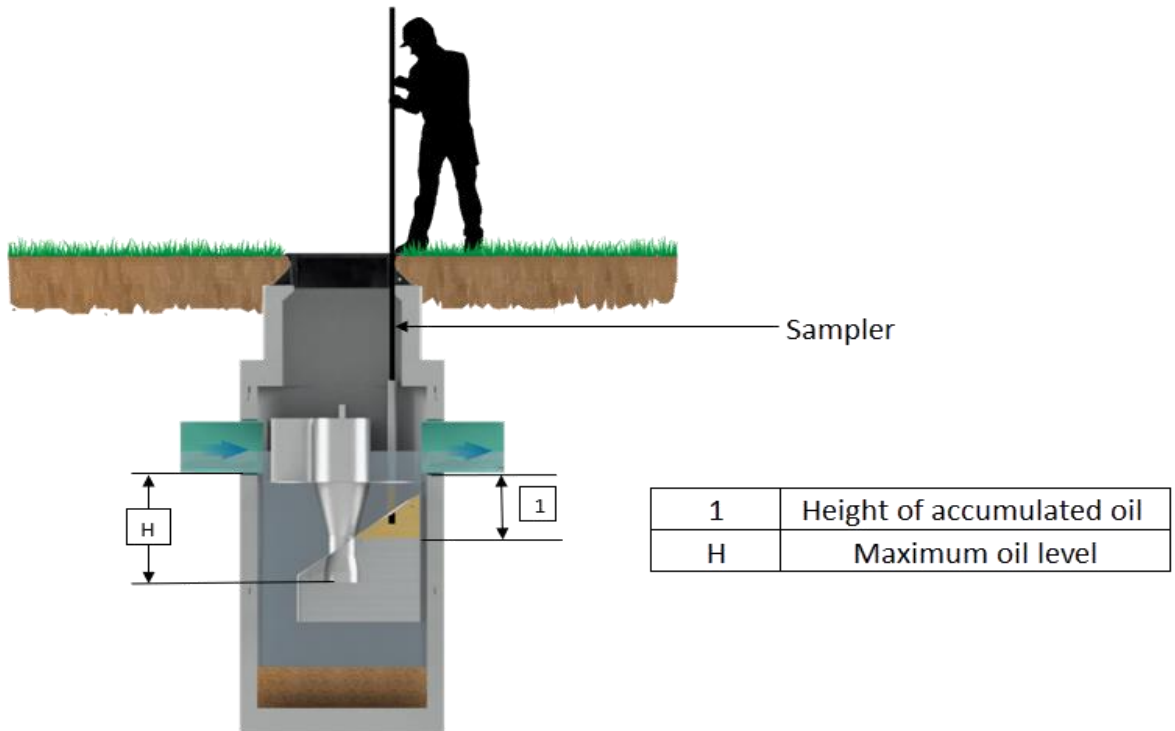


Figure 2 : Oil level inspection method

## 2. Sediment level inspection (Figure 3)

Step 1: Remove the cast iron cover to access the SDD3.

Step 2: Insert a rigid measuring instrument into one of the vortexes to determine the current sediment accumulation in the unit. This measurement is taken from the top of the lid to above the sediment at the bottom of the unit.

Step 3: Repeat step 1, but this time in the second vortex. The smaller of the two measurements will be used to determine cleaning requirements.

Step 4: Sediment cleaning is required when the sediment height (②) is less than or equal to the maintenance threshold (S) shown in Figure 1.

Step 5: Record the information collected in the inspection sheet (Appendix 2).

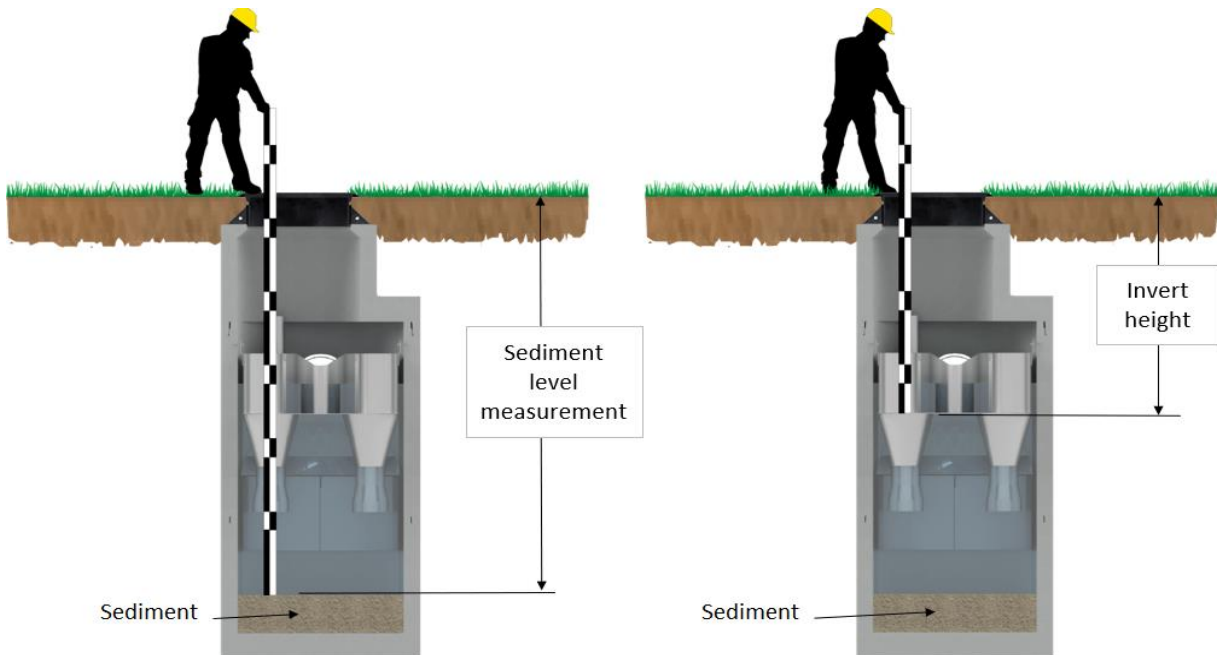


Figure 3 : Sediment inspection method



# SDD3 MAINTENANCE PROCEDURE

## 1. Oil cleaning (if required)

When oil is present in the unit, a preliminary cleaning of the unit is desirable to reduce maintenance costs. If this step is not carried out, the entire contents of the unit (liquid and vacuumed sediments) would be considered contaminated and would have to be sent to a contaminated materials treatment centre, which increases disposal costs.

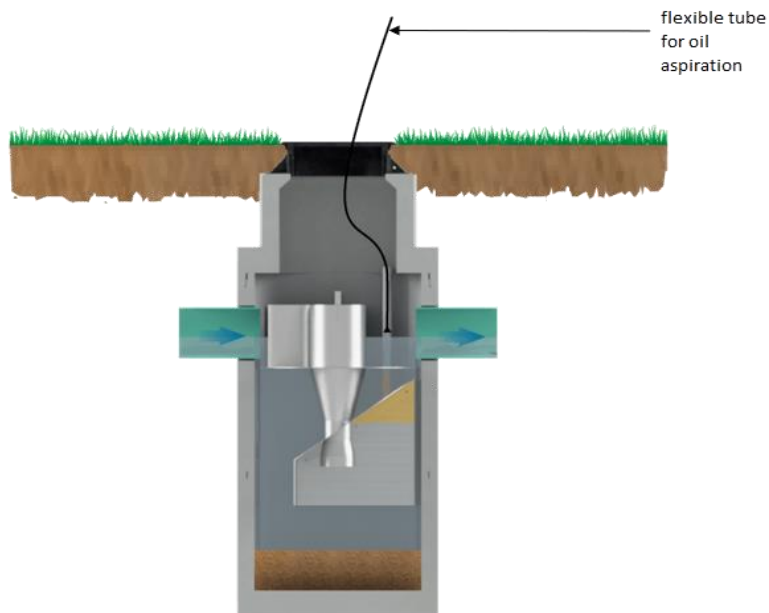


Figure 4: Oil cleaning



Oil cleaning is carried out using a portable pumping system or a vacuum truck equipped with a flexible hose with a diameter of 50 mm (2 in) or less. To carry out the complete oil cleaning, the following steps should be carried out:

Step 1: Remove the cast iron cover in place to access the contents of the SDD3 and determine the oil level.

Step 2: Insert the pump hose into the oil tank access pipe.

Step 3: Start the pump and pump oil down the hose to the oil level measured in step 2 during the oil inspection.

Step 4: Repeat the second step of the oil inspection to check the pumping efficiency.

Step 5: Repeat steps 3 to 5 if necessary.

## **2. Sediment clean-up (Figure 5)**

Sediment cleaning is carried out using a vacuum truck equipped with flexible hoses of up to 125mm (5 in) for small SDD3 models ( $\leq 1200$  mm) and up to 400 mm for larger models (Table 2). Incidentally, the use of a pressurised water jet and a rigid handle to direct the nozzle is desirable to perform optimal cleaning.

The procedure for cleaning the sediment is as follows:

Step 1: Remove the cast iron cover.

Step 2: Insert the vacuum hose into one of the vortexes and suck out the water in the unit.

Step 3: Once the water is sucked out, add the angled pressure water jet to the same vortex to agitate and loosen the accumulated sediment.

Step 4: Once the first part of the unit is clean, repeat the cleaning procedure in the second vortex.

Step 5: To assess the effectiveness of the cleaning, visually inspect and measure the sediment level as described above. The value of this measurement should be approximately equal to value A, corresponding to a completely empty tank.



Step 6: Repeat steps 2 to 5 if necessary.

Step 7: Replace the cast iron cover when cleaning is complete.

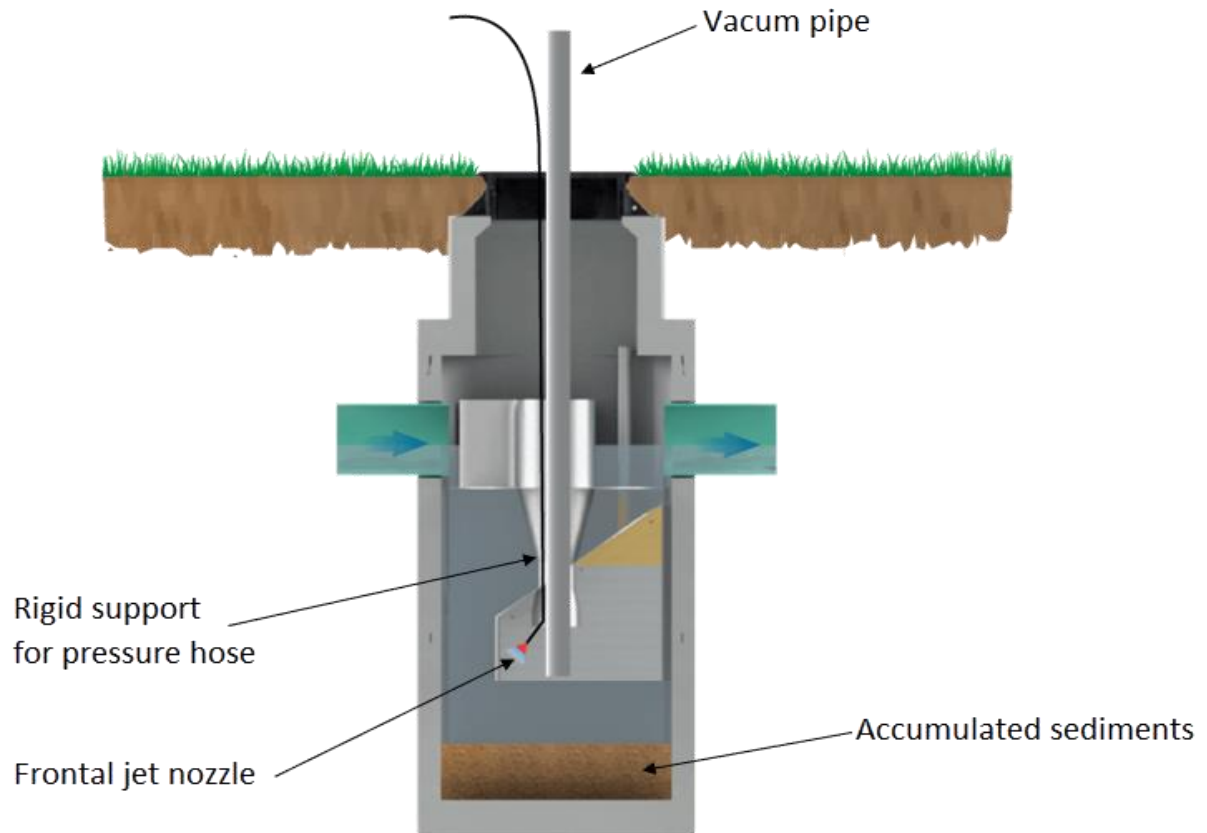
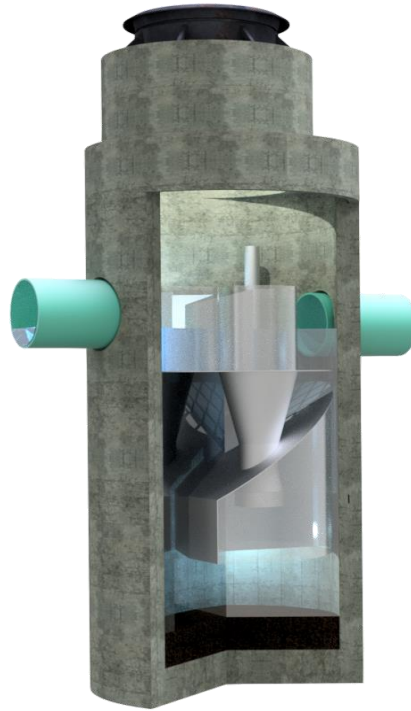


Figure 5 : Sediment cleaning



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## Appendix 1. SDD3 MAINTENANCE CRITERIA

| Parameter*                                       |  | SDD3 MODEL |           |           |           |           |           |           |           |           |           |           |
|--|--|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|  |  | SDD3-900   | SDD3-1200 | SDD3-1500 | SDD3-1600 | SDD3-1800 | SDD3-2100 | SDD3-2400 | SDD3-3000 | SDD3-3200 | SDD3-3600 | SDD3-4000 |
| <b>A</b>   | Maximum height of the unit when cleaned (m)                  | 1.389      | 1.743     | 1.955     | 2.061     | 2.361     | 2.792     | 3.146     | 3.695     | 3.695     | 3.948     | 3.972     |
| <b>S</b>   | Sediment maintenance threshold (75% of storage capacity) (m) | 0.806      | 1.114     | 1.134     | 1.400     | 1.603     | 1.930     | 2.098     | 2.605     | 2.605     | 3.005     | 3.035     |
| <b>C</b>   | Maximum sediment height - 100% of storage capacity (m)       | 0.611      | 0.904     | 0.860     | 1.179     | 1.350     | 1.643     | 1.748     | 2.241     | 2.241     | 2.690     | 2.723     |
| <b>H</b>   | Max oil level (m)  | 0.526      | 0.692     | 0.937     | 0.937     | 0.980     | 1.208     | 1.406     | 1.784     | 1.784     | 1.833     | 1.833     |
| <b>Max. diameter for cleaning equipment (mm)</b> |  | 375        | 600       | 750       | 750       | 900       | 900       | 1050      | 1050      | 1050      | 1050      | 1050      |
| <b>Max oil volume (m3)</b>                       |  | 0.12       | 0.28      | 0.546     | 0.65      | 0.98      | 1.55      | 2.33      | 4.544     | 4.54      | 7.87      | 7.87      |
| <b>Maximum sediment volume (m3)</b>              |  | 0.384      | 0.736     | 1.481     | 1.330     | 1.994     | 2.953     | 4.903     | 7.382     | 8.770     | 9.926     | 12.080    |



**SDD Model**

**Project name**

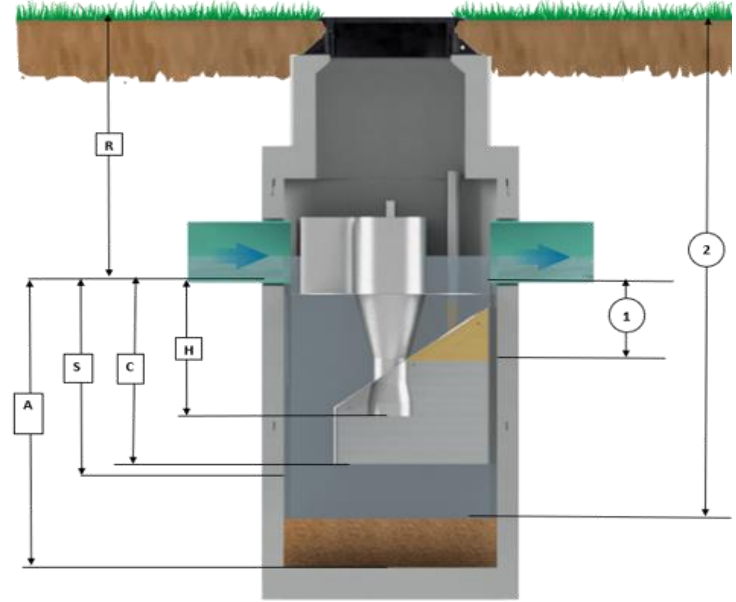
**# de projet Brunet :**

**City**

**Unit location**

**GPS Coordinates**

## SDD SYSTEM INSPECTION FORM



| Parameter  | Dimension |
|--|-----------|
| A Maximum height of the unit when cleaned (m)                  |           |
| S Sediment maintenance threshold (75% of storage capacity) (m) |           |
| C Maximum sediment height - 100% of storage capacity (m)       |           |
| H Maximum oil level (m)  |           |
| R Height of invert from top of paving (m)                      |           |

| Date<br>(JJ/MM/AA) | Employee's name | Oil                |   |                    | Sediment                 |  |                                | System integrity<br>Presence of breakage | Comments |
|--------------------|-----------------|--------------------|---|--------------------|--------------------------|--|--------------------------------|--|----------|
|                    |                 | ①<br>Oil level (m) | Oil cleaning required?<br>YES if :<br>① > H | Oil cleaning done? | ②<br>Sediment height (m) | Sediment cleaning required?<br>YES if :<br>② < S | Sediment cleaning carried out? |  |          |
|                    |                 |                    | Yes / No                                    | Yes / No           |                          | Yes / No   | Yes / No                       | Yes / No                                 |          |
|                    |                 |                    | Yes / No                                    | Yes / No           |                          | Yes / No   | Yes / No                       | Yes / No                                 |          |
|                    |                 |                    | Yes / No                                    | Yes / No           |                          | Yes / No   | Yes / No                       | Yes / No                                 |          |
|                    |                 |                    | Yes / No                                    | Yes / No           |                          | Yes / No   | Yes / No                       | Yes / No                                 |          |
|                    |                 |                    | Yes / No                                    | Yes / No           |                          | Yes / No   | Yes / No                       | Yes / No                                 |          |
|                    |                 |                    | Yes / No                                    | Yes / No           |                          | Yes / No   | Yes / No                       | Yes / No                                 |          |
|                    |                 |                    | Yes / No                                    | Yes / No           |                          | Yes / No   | Yes / No                       | Yes / No                                 |          |
|                    |                 |                    | Yes / No                                    | Yes / No           |                          | Yes / No   | Yes / No                       | Yes / No                                 |          |
|                    |                 |                    | Yes / No                                    | Yes / No           |                          | Yes / No   | Yes / No                       | Yes / No                                 |          |