

Inventory of Carbon Scrubbers

Scrubber No.	Scrubber Description	Description & Process	Scrubber Specification	Additional Notes
H ₂ S Scrubber 1	CHP H ₂ S Scrubber	Scrubber prior to the CHP engine ensures that levels of hydrogen sulphide are below 150 ppm, protecting the engine from damage.	2m ³ Scrubber Capacity 2" inlet & 2" outlet Scrubber Height 2.5 m Discharge Point via an additional 2" vent – height at discharge is 4.5 m	The engine has its own H ₂ S monitor
H ₂ S Scrubber 2	ABP / MBT Displaced Air Scrubber	Treats the displaced air from the ABP / MBT holding tanks, the maximum pump rate is 20 m ³ /hour into one or both of the tanks.	2m ³ Scrubber Capacity 2" inlet & 2" outlet Scrubber Height 2.5 m Discharge Point via an additional 2" vent – height at discharge is 4.5 m	Both tanks are covered. MBT / ABP tanks hold 50m ³ each. The DAF can utilise pH correction, polymer & coagulant dosing and peroxide addition, which feeds to ABP / MBT with treated effluent.
H ₂ S Scrubber 3	DAF (1) Break Tank	Treats the displaced air from the DAF 1 break tank, which has a maximum pump rate of 20m ³ /hour into one or both tanks.	2m ³ Scrubber Capacity 2" inlet & 2" outlet Scrubber Height 2.5 m	

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			Discharge Point via an additional 2" vent – height at discharge is 4.5 m	
H ₂ S Scrubber 4	RT 1 & R1	Treats the displaced air from RT1 & R1.	2m ³ Scrubber Capacity 2" inlet & 2" outlet Scrubber Height 2.5 m Discharge Point via an additional 2" vent – height at discharge is 4.5 m	Maximum air displacement rate from RT1 is 120 m ³ /hour. R1 could have a displacement flow of up to 3,600 cfm. To minimise odour release, we will use our pump to offload tankers. Nano bubble technology will assist with odour removal. Also treated with carbon scrubber.
H ₂ S Scrubber 5	Feedstock Tanks, White, Gold & Grey	The displaced air will be treated via a carbon scrubber. The displaced air is pulled via the extraction blower to the odour control unit.	2m ³ Scrubber Capacity 2" inlet & 2" outlet Scrubber Height 2.5 m Discharge Point via an additional 2" vent – height at discharge is 4.5 m	The maximum total combined capacity is 150 m ³ . The maximum displaced air flow is 120 m ³ /hour. The waste composition of all odour sources is as per acceptance analyses and within acceptance parameters.
H ₂ S Scrubber 6 & 7	Complex waste & warehouse	Treated via carbon scrubber and odour treatment system	2m ³ Scrubber Capacity 2" inlet & 2" outlet	Also has connected into the centralised scrubbing system

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			<p>Scrubber Height 2.5 m</p> <p>Discharge Point via an additional 2" vent – height at discharge is 4.5 m</p>	
Centralised Scrubbing System	<i>Carbon & Nano Bubble / Chemical Treatment Process to treat odour</i>	The centralised scrubbing system treats displaced gases throughout the whole of site and spec'd to facilitate such loads. It is inverter controlled so can ramp up and down from its maximum capacity.	See included drawing & notes	There will be a maximum of 2 tankers discharging at any one time which equates to a displacement flow of 240m ³ /hour. The total capacity of all points would be 623 m ³ (if all pumping at once) plus a maximum flow of 240 m ³ , the odour management facility will have an extraction blower rated to do a minimum of 863 m ³ /hour. The odour scrubber will discharge the flow via the discharge point on top of the unit after additional peroxide treatment (where required).