



CASE STUDY



Engineering Company Test Project Northern Washington Storage Warehouse

A storage warehouse in Northwest Washington, close to the Canadian border along I-5 with hundreds of trucks in and out weekly installed a *Biochar*

Stormwater Treatment Filtration System, Pump to Passive, **44S TOTE** with **BiocharPEAT™** on January 29, 2020.

Note that the drainage area to the tote was huge because of roof water contribution. The following are the areas that contributed to the pilot tote:

- Relatively “clean” roof area: probably about 0.5 to 0.6 acres
- Dirty paved areas: about 0.2 acres
- Gravel parking lot area with turbid (not muddy, but turbid) runoff: 0.13 acres

Parameters Given: approximate inflow maximum concentrations that might help you prepare the biochar system:

- Turbidity: 400 NTU
- Zinc: 1,500 ug/L
- Copper: 50 ug/L
- BOD: 15 mg/L
- Nitrate/Nitrite: 1.6 mg/L
- Phosphorus: 1.0 mg/L



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Engineering Company Test Project Bellingham 2020 Storage Warehouse

Test Results by
Engineering
Company:

Date	Gallons Treated	Parameter	Inlet	Outlet	Benchmark	% reduction
2/6/20	238,507	pH	6	6.5	Within 5 to 9	--
2/6/20	238,507	Turbidity	500	45	25 NTU	91%
2/6/20	238,507	Copper	0.0398	0.0037	0.014 mg/L	91%
2/6/20	238,507	Zinc	0.533	0.0472	0.117 mg/L	91%
2/6/20	238,507	N	0.11	0.14	0.68 mg/L	-27%
2/6/20	238,507	P	1.3	0.261	2.0 mg/L	80%
2/6/20	238,507	BOD	25	5	30 mg/L	80%
Date	Gallons Treated	Parameter	Inlet	Outlet	Benchmark	% reduction
2/13/20	283,471	pH	6.5	7	Within 5 to 9	--
2/13/20	283,471	Turbidity	160	80	25 NTU	50%
2/13/20	283,471	Copper	0.0328	0.0149	0.014 mg/L	55%
2/13/20	283,471	Zinc	0.627	0.276	0.117 mg/L	56%
2/13/20	283,471	N	0.52	0.03	0.68 mg/L	94%
2/13/20	283,471	P	14.7	4.43	2.0 mg/L	70%
2/13/20	283,471	BOD	609	168	30 mg/L	72%

Gray shading indicates a benchmark exceedance

44S TREATMENT TOTE INFORMATION

External Dimensions: 39" x 46 3/4" x 42 1/2" H

Internal Dimensions: 36" x 43 3/4" x 36 3/8" H

Volume Capacity: 240.7 Gallons / 55,600 cubic inches

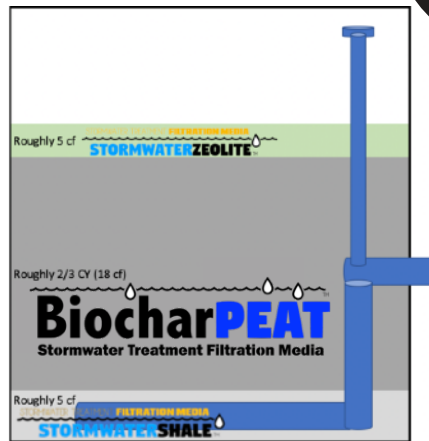
Cap ~5 cf of



Treatment ~2/3 CY of



Base ~5 cf of



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No maintenance was performed during the sixteen days that the water was pumped through the test unit. All information and results provided by an engineering company hired to recommend the best option.



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