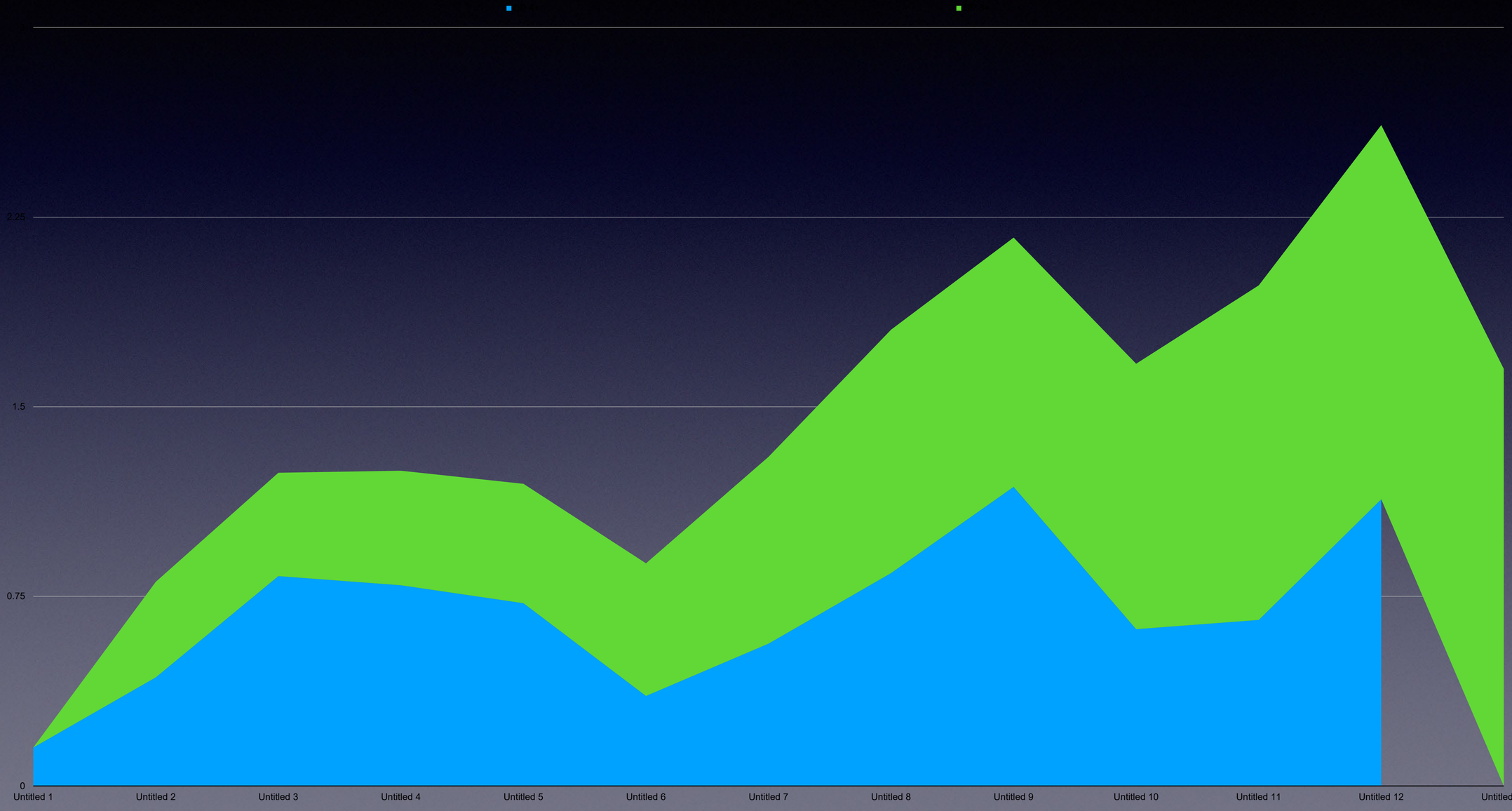
Understanding distillery waste water

What is it?

- COD/BOD unconverted starches
- Acetic acid
- lactic acid
- glycerol
- residual ethanol
- Starches/sugars

DP 4+	DP 3+	Maltose	Glucose	Lactic Acid	Glycerol	Ethanol	COD
0.152	0.082	0.033	0	0.650	0.072	0.335	**37800**
0.430	0.349	0.405	0.076	0.564	0.619	0.035	**40900**
0.83	0.094	0.097	0.023	0.066	0.586	0	**45300**
0.794	0.155	0.153	0.011	0.662	0.866	1.751	**47200**
0.723	0.194	0.222	0.064	0.260	0.328	0.823	**52450**
0.356	0.209	0.085	0	0.537	0.466	0.714	**73900**
0.563	0.190	0.131	0	0.440	0.438	0.061	**96300**
0.842	0.017	0.147	0.078	0.315	0.465	0.027	**98600**
1.183	0.095	0.199	0.210	0.40	0.572	0.837	**105000**
0.620	0.064	0.134	0.040	0.379	0.821	0.053	**132300**
0.657	0.072	0.037	0.028	0.418	0.338	0.021	**148000**
1.134	0.151	0.15	0.13	1.914	1.331	0.946	**165000**

DP4+ vs (COD/10,000)



Mitigating COD/BOD

- MASTER the cook process and fermentation health
- Implement a post distillation treatment system for the stillage
- Consider using backset to reduce environmental impact of the discharge and using less fresh water.

Concerns about COD/BOD.

- Increased levels of COD/BOD coming from a distillery put significant stress on local environments by overwhelming treatment systems
- Wasting grain by not extracting optimum yields

Environmental Impact

- A typical family of 4 produces about 7 - 9 lbs of COD per day.
- A distillery discharging 5,000 gallons a day of stillage can be the equivalent adding 3,300 single family homes to a treatment plant.

SUMMARY

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