

Table 1
2018 Husky Superior Refinery
Surface Water Data Summary
Superior, WI

Table with columns for Location, Date, Depth, Sample Type, Parameter, and Units. The table contains data for various hydrocarbon and per- and polyfluoroalkyl substances (PFAS) parameters over time at the Newton Creek Mouth location. Data points include concentrations in ug/l and ng/l, with many values being less than detection limits (<10).

Note
QA/QC in-progress; data updated as QA/QC review has been completed

Table 1
2018 Husky Superior Refinery
Surface Water Data Summary
Superior, WI

Table with columns for Location, Date, Depth, Sample Type, Parameter, Units, and a grid of data points for various parameters (General Parameters, Total Metals, Semivolatile Organic Compounds) across multiple dates from 4/26/2018 to 12/3/2018.

Table 1
2018 Husky Superior Refinery
Surface Water Data Summary
Superior, WI

Table with columns for Location, Date, Depth, Sample Type, and various chemical parameters measured over time from 4/26/2018 to 12/3/2018. The table lists concentrations for hydrocarbons, sulfonates, and other organic compounds.

Note
QA/QC in-progress; data updated as QA/QC review has been completed

Table 1
2018 Husky Superior Refinery
Surface Water Data Summary
Superior, WI

Table with columns for Location, Date, Depth, Sample Type, Parameter, and Units, and rows for various chemical parameters such as Hexachlorobutadiene, Hexachloroethane, Indeno(1,2,3-cd)pyrene, etc., across two locations: 11th St - Newton Creek and 21st St. Impoundment Upstream of Weir.

Table 2
2018 Husky Superior Refinery
Treatment System Data Summary
Superior, WI

Parameter Units			4:2 Fluorotelomer sulfonate (4:2 FTS)	6:2 Fluorotelomer sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonate (8:2 FTS)	n-Ethyl perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	n-Methyl perfluorooctanesulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonate (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonate (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA / PFDoDA)	Perfluorohexane sulfonate (PFHxS)	Perfluorohexanoic acid (PFHpA)	Perfluorohexane sulfonate (PFHxS)	Perfluorohexane sulfonate (PFHxS) - Branched	Perfluorohexane sulfonate (PFHxS) - Linear	Perfluorohexanoic acid (PFHxA)	Perfluorononanesulfonate (PFNS)	Perfluorononanoic acid (PFNA)	Perfluorooctanesulfonamide (PFOSA / FOSA)	Perfluorooctanesulfonate (PFOS)	Perfluorooctanesulfonate (PFOS) - Branched	Perfluorooctanesulfonate (PFOS) - Linear	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluoropentansulfonate (PFPeS)	Perfluorotetradecanoic acid (PFTA / PFTeDA / PFTeA)	Perfluorotridecanoic acid (PFTrDA / PFTrA)	Perfluoroundecanoic acid (PFUnA / PFUnDA)	
Location	Date	Sample Type	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l
SP-1	5/25/2018	N	60	14370	100	< 10	< 10	20	3490	< 10	< 10	< 10	< 10	2500	60	10	40	4760	< 10	10	< 10	10	< 10	< 10	400	12570	20	< 10	< 10	< 10	
	5/26/2018	N	50	18610	260	< 10	< 10	10	2430	< 10	< 10	< 10	< 10	2030	80	10	60	3330	< 10	40	< 10	30	20	10	580	9020	< 10	< 10 *	< 10	< 10	
	5/29/2018	N	30	18390	400	< 10	< 10	10	2470	< 10	10	< 10	< 10	2050	80	10	60	3390	< 10	40	< 10	40	20	< 10	580	9370	10	< 10 *	< 10	< 10	

Table 2
2018 Husky Superior Refinery
Treatment System Data Summary
Superior, WI

Table with columns: Location, Date, Sample Type, Parameter Units (4:2 Fluorotelomer sulfonate (4:2 FTS) to Perfluoroundecanoic acid (PFUnDA)), and numerical values. The table contains two main sections of data, one for the period 9/26/2018 to 11/26/2018 and another for 5/25/2018 to 6/27/2018.

Table 2
2018 Husky Superior Refinery
Treatment System Data Summary
Superior, WI

Parameter Units			4:2 Fluorotelomer sulfonate (4:2 FTS)	6:2 Fluorotelomer sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonate (8:2 FTS)	n-Ethyl perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	n-Methyl perfluorooctanesulfonamidoacetic acid (MeFOSAA)	Perfluorobutane sulfonate (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecane sulfonate (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA / PFDoDA)	Perfluoroheptane sulfonate (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexane sulfonate (PFHxS)	Perfluorohexane sulfonate (PFHxS) - Branched	Perfluorohexane sulfonate (PFHxS) - Linear	Perfluorohexanoic acid (PFHxA)	Perfluorononanesulfonate (PFNS)	Perfluorononanoic acid (PFNA)	Perfluorooctanesulfonamide (PFOSA / FOSA)	Perfluorooctanesulfonate (PFOS)	Perfluorooctanesulfonate (PFOS) - Branched	Perfluorooctanesulfonate (PFOS) - Linear	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluoropentansulfonate (PFPeS)	Perfluorotetradecanoic acid (PFTA / PFTeDA / PFTeA)	Perfluorotridecanoic acid (PFTrDA / PFTrA)	Perfluoroundecanoic acid (PFUnA / PFUnDA)	
Location	Date	Sample Type	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l	ng/l
	11/12/2018	N	< 10	< 10	< 10	< 10	< 10	< 10	3200	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	720	< 10	< 10	< 10	< 10
	11/19/2018	N	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/26/2018	N	< 10	< 10	< 10	< 10	< 10	< 10	700	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	990	< 10	< 10	< 10	< 10

Location/Sample ID	Sample Description
EQ Tank	Prior to normal WWTP
TT-7	Tank before temporary treatment system
SP-0A	Treatment system influent, before prefiltration
SP-0B	Treatment system influent, before prefiltration (alternate)
SP-1	Influent to the lead 10,000-lb GAC vessel (used prior to 05/30/2018)
SP-2	Between lead and lag 10,000-lb GAC vessels
SP2-2	Between lead and lag 10,000-lb GAC vessels
SP-3	After the lag 10,000-lb GAC vessel
SP2-3	After the lag 10,000-lb GAC vessel
SP-4	Before the lead 5,000-lb GAC vessel (sampling will only occur here if the lead 10,000-lb vessel is taken offline)
SP-5	After the lag 5,000-lb GAC vessel (sampling will only occur here if the lead 10,000-lb vessel is taken offline)
SP-6	After the ion exchange vessels, treatment system #1 effluent
SP2-6	After the ion exchange vessels, treatment system #2 effluent
SP-6/SP2-6 Composite	After the ion exchange vessels, combined treatment system #1 and #2 effluent

Data Footnotes and Qualifiers

--	Not analyzed/Not available.
N	Sample Type: Normal
FD	Sample Type: Field Duplicate
ND	Not detected.
*	Estimated value, QA/QC criteria not met.
a	Estimated value, calculated using some or all values that are estimates.
b	Potential false positive value based on blank data validation procedures. Concentrations identified as potential false positive are excluded from calculations.
h	EPA recommended sample preservation, extraction or analysis holding time was exceeded.
j	Estimated detected value. The reported value is less than the stated laboratory quantitation limit but greater than the laboratory method detection limit.