



Map source: Google

LEGEND

- PFOS Not Detected
- PFOS Detected Below Regulatory Limit
- PFOS Detected Above Regulatory Limit
- - - Airport Property Boundary



Gustavus - DEC, DOT&PF Gustavus, Alaska	
GUSTAVUS AIRPORT APRIL 2021 ASPHALT RESULTS - PFOS	
April 19, 2021	102599-008
SHANNON & WILSON, INC. <small>GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS</small>	Figure

**TABLE 1
APRIL 2021 GUSTAVUS RUNWAY ASPHALT PFAS RESULTS**

Analytical Method	Analyte	Regulatory Limit	Units	GST-02-AS										
				GST-01-AS	Primary	Duplicate	GST-04-AS	GST-05-AS	GST-06-AS	GST-07-AS	GST-08-AS	GST-09-AS	GST-10-AS	
		SECON Test Pit Reference Number		1	2		3	28	27	30	29	26	25	
EPA 537 (Mod)	Perfluorohexanesulfonic acid (PFHxS)	—	µg/kg	59	0.034 J*	0.067 J*	<0.20	0.20	3.7	0.077 J	13	0.029 J	<0.20	
	Perfluorohexanoic acid (PFHxA)	—	µg/kg	8.3	0.096 J	<0.19	<0.20	0.077 J*	1.2	<0.19	1.5	<0.19	<0.20	
	Perfluoroheptanoic acid (PFHpA)	—	µg/kg	2.7 F1	<0.20	<0.19	<0.20	<0.20	0.22	<0.19	0.26	<0.19	<0.20	
	Perfluorononanoic acid (PFNA)	—	µg/kg	<0.20	<0.20	<0.19	<0.20	<0.20	<0.19	<0.19	<0.20	<0.19	<0.20	
	Perfluorobutanesulfonic acid (PFBS)	—	µg/kg	12	<0.20	<0.19	<0.20	<0.20	0.98	<0.19	1.0	<0.19	<0.20	
	Perfluorodecanoic acid (PFDA)	—	µg/kg	<0.20	<0.20	<0.19	<0.20	<0.20	<0.19	<0.19	<0.20	<0.19	<0.20	
	Perfluoroundecanoic acid (PFUnA)	—	µg/kg	<0.20	<0.20	<0.19	<0.20	<0.20	<0.19	<0.19	<0.20	<0.19	<0.20	
	Perfluorododecanoic acid (PFDoA)	—	µg/kg	<0.20	<0.20	<0.19	<0.20	<0.20	<0.19	<0.19	<0.20	<0.19	<0.20	
	Perfluorotridecanoic acid (PFTrDA)	—	µg/kg	<0.20	<0.20	<0.19	<0.20	<0.20	<0.19	<0.19	<0.20	<0.19	<0.20	
	Perfluorotetradecanoic acid (PFTeA)	—	µg/kg	<0.20	<0.20	<0.19	<0.20	<0.20	<0.19	<0.19	<0.20	<0.19	<0.20 J*	
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	—	µg/kg	<2.0	<2.0	<1.9	<2.0	<2.0	<1.9	<1.9	<2.0	<1.9	<2.0	
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	—	µg/kg	<2.0	<2.0	<1.9	<2.0	<2.0	<1.9	<1.9	<2.0	<1.9	<2.0	
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	—	µg/kg	<0.20	<0.20	<0.19	<0.20	<0.20	<0.19	<0.19	<0.20	<0.19	<0.20	
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	—	µg/kg	<0.20	<0.20	<0.19	<0.20	<0.20	<0.19	<0.19	<0.20	<0.19	<0.20	
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	—	µg/kg	<0.20	<0.20	<0.19	<0.20	<0.20	<0.19	<0.19	<0.20	<0.19	<0.20	
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	—	µg/kg	<0.25	<0.25	<0.23	<0.25	<0.25	<0.24	<0.24	<0.25	<0.24	<0.25	
	Perfluorooctanesulfonic acid (PFOS)		3.0	µg/kg	500	<0.50	<0.46	<0.50	2.5	19	0.36 J	170	<0.47	<0.50
	Perfluorooctanoic acid (PFOA)		1.7	µg/kg	6.5	<0.20	<1.9	<0.20	<0.20	0.44	<0.19	1.6	<0.19	<0.20

Notes: Results reported from Eurofins TestAmerica Laboratory work orders 320-72243-1 & 320-72244-1.
Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).

DEC Alaska Department of Environmental Conservation

EPA United States Environmental Protection Agency

PFAS per- and poly-fluoroalkyl substances

µg/kg micrograms per kilogram, equivalent to parts per billion

— No applicable regulatory limit exists for the associated analyte.

< Analyte was not detected; reported as <reporting limit (RL).

BOLD The detected concentration exceeds the DEC cleanup level for the associated analyte.

J Estimated concentration, detected greater than the detection limit (DL) and less than the RL. Flag applied by the laboratory.

J* Estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc. (*)

**TABLE 1
APRIL 2021 GUSTAVUS RUNWAY ASPHALT PFAS RESULTS**

Analytical Method	Analyte	Regulatory Limit	Units	GST-12-AS									
				GST-11-AS	Primary	Duplicate	GST-14-AS	GST-15-AS	GST-16-AS	GST-17-AS	GST-18-AS	GST-19-AS	
		SECON Test Pit Reference Number		31	4	4	5	7	6	8	9	10	
EPA 537 (Mod)	Perfluorohexanesulfonic acid (PFHxS)	—	µg/kg	0.11 J	<0.19	<0.19	0.041 J*	<0.19	<0.19	<0.19	<0.19	<0.20	
	Perfluorohexanoic acid (PFHxA)	—	µg/kg	<0.26	<0.19	<0.19	<0.19	0.16 J	<0.19	<0.19	0.11 J	0.045 J	
	Perfluoroheptanoic acid (PFHpA)	—	µg/kg	<0.26	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.20	
	Perfluorononanoic acid (PFNA)	—	µg/kg	<0.26	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.20	
	Perfluorobutanesulfonic acid (PFBS)	—	µg/kg	<0.26	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.20	
	Perfluorodecanoic acid (PFDA)	—	µg/kg	<0.26	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.20	
	Perfluoroundecanoic acid (PFUnA)	—	µg/kg	<0.26	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.20	
	Perfluorododecanoic acid (PFDoA)	—	µg/kg	<0.26	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.20	
	Perfluorotridecanoic acid (PFTrDA)	—	µg/kg	<0.26	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.20	
	Perfluorotetradecanoic acid (PFTeA)	—	µg/kg	<0.26	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.20	
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	—	µg/kg	<2.6	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<2.0	
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	—	µg/kg	<2.6	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<2.0	
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	—	µg/kg	<0.26	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.20	
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	—	µg/kg	<0.26	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.20	
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	—	µg/kg	<0.26	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.20	
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	—	µg/kg	<0.33	<0.23	<0.23	<0.24	<0.23	<0.24	<0.23	<0.24	<0.25	
	Perfluorooctanesulfonic acid (PFOS)		3.0	µg/kg	0.70	<0.47	<0.47	0.23 J	0.22 J	<0.47	<0.47	<0.48	<0.49
	Perfluorooctanoic acid (PFOA)		1.7	µg/kg	<0.26	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.20

Notes: Results reported from Eurofins TestAmerica Laboratory work orders 320-72243-1 & 320-72244-1.
 Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).
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BOLD The detected concentration exceeds the DEC cleanup level for the associated analyte.
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**TABLE 1
APRIL 2021 GUSTAVUS RUNWAY ASPHALT PFAS RESULTS**

Analytical Method	Analyte	Regulatory Limit	Units	GST-25-AS								
				GST-20-AS	GST-21-AS	GST-22-AS	GST-23-AS	GST-24-AS	Primary	Duplicate	GST-27-AS	GST-28-AS
SECON Test Pit Reference Number				11	12	13	14	16	17	18	20	
EPA 537 (Mod)	Perfluorohexanesulfonic acid (PFHxS)	—	µg/kg	<0.20	<0.19	0.036 J	0.61	34	1.6	1.6	0.041 J*	<0.19
	Perfluorohexanoic acid (PFHxA)	—	µg/kg	<0.20	<0.19	<0.19	0.069 J	5.4	0.62	0.60	<0.23	<0.19
	Perfluoroheptanoic acid (PFHpA)	—	µg/kg	<0.20	<0.19	<0.19	<0.19	1.4	0.13 J	0.12 J	<0.23	<0.19
	Perfluorononanoic acid (PFNA)	—	µg/kg	<0.20	<0.19	<0.19	<0.19	0.054 J	<0.19	<0.21	<0.23	<0.19
	Perfluorobutanesulfonic acid (PFBS)	—	µg/kg	<0.20	<0.19	<0.19	0.057 J	5.0	0.44	0.37	<0.23	<0.19
	Perfluorodecanoic acid (PFDA)	—	µg/kg	<0.20	<0.19	<0.19	<0.19	<0.20	<0.19	<0.21	<0.23	<0.19
	Perfluoroundecanoic acid (PFUnA)	—	µg/kg	<0.20	<0.19	<0.19	<0.19	<0.20	<0.19	<0.21	<0.23	<0.19
	Perfluorododecanoic acid (PFDoA)	—	µg/kg	<0.20	<0.19	<0.19	<0.19	<0.20	<0.19	<0.21	<0.23	<0.19
	Perfluorotridecanoic acid (PFTrDA)	—	µg/kg	<0.20	<0.19	<0.19	<0.19	<0.20	<0.19	<0.21	<0.23	<0.19
	Perfluorotetradecanoic acid (PFTeA)	—	µg/kg	<0.20	<0.19	<0.19	<0.19	<0.20	<0.19	<0.21	<0.23	<0.19
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	—	µg/kg	<2.0	<1.9	<1.9	<1.9	<2.0	<1.9	<2.1	<2.3	<1.9
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	—	µg/kg	<2.0	<1.9	<1.9	<1.9	<2.0	<1.9	<2.1	<2.3	<1.9
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	—	µg/kg	<0.20	<0.19	<0.19	<0.19	<0.20	<0.19	<0.21	<0.23	<0.19
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	—	µg/kg	<0.20	<0.19	<0.19	<0.19	<0.20	<0.19	<0.21	<0.23	<0.19
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	—	µg/kg	<0.20	<0.19	<0.19	<0.19	<0.20	<0.19	<0.21	<0.23	<0.19
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	—	µg/kg	0.19 J	<0.24	<0.23	<0.24	<0.25	<0.24	<0.26	<0.28	<0.23
	Perfluorooctanesulfonic acid (PFOS)	3.0	µg/kg	<0.49	<0.47	0.37 J	1.3	290	16	15	0.32 J	<0.47
	Perfluorooctanoic acid (PFOA)	1.7	µg/kg	<0.20	<0.19	<0.19	<0.19	3.8	0.25	0.29	<0.23	<0.19

Notes: Results reported from Eurofins TestAmerica Laboratory work orders 320-72243-1 & 320-72244-1.
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APRIL 2021 GUSTAVUS RUNWAY ASPHALT PFAS RESULTS**

Analytical Method	Analyte	Regulatory Limit	Units	GST-35-AS								
				GST-29-AS	GST-30-AS	GST-31-AS	GST-32-AS	GST-33-AS	GST-34-AS	Primary	Duplicate	GST-37-AS
SECON Test Pit Reference Number				15	19	21	22	23	24	S&W 1	S&W 2	
EPA 537 (Mod)	Perfluorohexanesulfonic acid (PFHxS)	—	µg/kg	0.11 J	0.11 J	0.035 J	<0.20	<0.19	0.043 J	0.52	0.55 J*	6.6
	Perfluorohexanoic acid (PFHxA)	—	µg/kg	<0.20	<0.19	<0.19	<0.20	<0.19	<0.19	0.35	0.38	2.0
	Perfluoroheptanoic acid (PFHpA)	—	µg/kg	<0.20	<0.19	<0.19	<0.20	<0.19	<0.19	<0.19	0.039 J	0.33
	Perfluorononanoic acid (PFNA)	—	µg/kg	<0.20	<0.19	<0.19	<0.20	<0.19	<0.19	<0.19	<0.20	<0.20
	Perfluorobutanesulfonic acid (PFBS)	—	µg/kg	0.058 J	<0.19	<0.19	<0.20	<0.19	<0.19	0.13 J*	0.20 J*	1.6
	Perfluorodecanoic acid (PFDA)	—	µg/kg	<0.20	<0.19	<0.19	<0.20	<0.19	<0.19	<0.19	<0.20	<0.20
	Perfluoroundecanoic acid (PFUnA)	—	µg/kg	<0.20	<0.19	<0.19	<0.20	<0.19	<0.19	<0.19	<0.20	<0.20
	Perfluorododecanoic acid (PFDoA)	—	µg/kg	<0.20	<0.19	<0.19	<0.20	<0.19	<0.19 J*	<0.19	<0.20	<0.20
	Perfluorotridecanoic acid (PFTrDA)	—	µg/kg	<0.20	<0.19	<0.19	<0.20	<0.19	<0.19	<0.19	<0.20	<0.20
	Perfluorotetradecanoic acid (PFTeA)	—	µg/kg	<0.20	<0.19	<0.19	<0.20	<0.19	<0.19 J*	<0.19	<0.20	<0.20
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	—	µg/kg	<2.0	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9	<2.0	<2.0
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	—	µg/kg	<2.0	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9	<2.0	<2.0
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	—	µg/kg	<0.20	<0.19	<0.19	<0.20	<0.19	<0.19	<0.19	<0.20	<0.20
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	—	µg/kg	<0.20	<0.19	<0.19	<0.20	<0.19	<0.19	<0.19	<0.20	<0.20
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	—	µg/kg	<0.20	<0.19	<0.19	<0.20	<0.19	<0.19	<0.19	<0.20	<0.20
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	—	µg/kg	<0.25	<0.23	<0.24	<0.25	<0.24	<0.24	<0.24	<0.25	<0.25
	Perfluorooctanesulfonic acid (PFOS)	3.0	µg/kg	0.94	0.99	<0.48	0.21 J	<0.48	0.32 J	5.9	6.6 J*	53
	Perfluorooctanoic acid (PFOA)	1.7	µg/kg	<0.20	<0.19	<0.19	<0.20	<0.19	<0.19	0.10 J	<0.20	0.72

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