

**LEGEND**

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



Gustavus - DEC, DOT&PF Gustavus, Alaska	
<b>GUSTAVUS AIRPORT APRIL 2021 ASPHALT RESULTS - PFOS</b>	
April 15, 2021	102599-005
<b>SHANNON &amp; WILSON, INC.</b> <small>GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS</small>	<b>Figure</b>

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

Analytical Method	Analyte	Regulatory Limit	Units	GST-25-AS								
				GST-21-AS	GST-22-AS	GST-23-AS	GST-24-AS	Primary	Duplicate	GST-27-AS	GST-28-AS	GST-29-AS
SECON Test Pit Reference Number				12	13	14	16	17	18	20	15	
EPA 537 (Mod)	Perfluorohexanesulfonic acid (PFHxS)	—	µg/kg	<0.19	0.036 J	0.61	34	1.6	1.6	0.041 J*	<0.19	0.11 J
	Perfluorohexanoic acid (PFHxA)	—	µg/kg	<0.19	<0.19	0.069 J	5.4	0.62	0.60	<0.23	<0.19	<0.20
	Perfluoroheptanoic acid (PFHpA)	—	µg/kg	<0.19	<0.19	<0.19	1.4	0.13 J	0.12 J	<0.23	<0.19	<0.20
	Perfluorononanoic acid (PFNA)	—	µg/kg	<0.19	<0.19	<0.19	0.054 J	<0.19	<0.21	<0.23	<0.19	<0.20
	Perfluorobutanesulfonic acid (PFBS)	—	µg/kg	<0.19	<0.19	0.057 J	5.0	0.44	0.37	<0.23	<0.19	0.058 J
	Perfluorodecanoic acid (PFDA)	—	µg/kg	<0.19	<0.19	<0.19	<0.20	<0.19	<0.21	<0.23	<0.19	<0.20
	Perfluoroundecanoic acid (PFUnA)	—	µg/kg	<0.19	<0.19	<0.19	<0.20	<0.19	<0.21	<0.23	<0.19	<0.20
	Perfluorododecanoic acid (PFDoA)	—	µg/kg	<0.19	<0.19	<0.19	<0.20	<0.19	<0.21	<0.23	<0.19	<0.20
	Perfluorotridecanoic acid (PFTrDA)	—	µg/kg	<0.19	<0.19	<0.19	<0.20	<0.19	<0.21	<0.23	<0.19	<0.20
	Perfluorotetradecanoic acid (PFTeA)	—	µg/kg	<0.19	<0.19	<0.19	<0.20	<0.19	<0.21	<0.23	<0.19	<0.20
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	—	µg/kg	<1.9	<1.9	<1.9	<2.0	<1.9	<2.1	<2.3	<1.9	<2.0
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	—	µg/kg	<1.9	<1.9	<1.9	<2.0	<1.9	<2.1	<2.3	<1.9	<2.0
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	—	µg/kg	<0.19	<0.19	<0.19	<0.20	<0.19	<0.21	<0.23	<0.19	<0.20
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	—	µg/kg	<0.19	<0.19	<0.19	<0.20	<0.19	<0.21	<0.23	<0.19	<0.20
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	—	µg/kg	<0.19	<0.19	<0.19	<0.20	<0.19	<0.21	<0.23	<0.19	<0.20
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	—	µg/kg	<0.24	<0.23	<0.24	<0.25	<0.24	<0.26	<0.28	<0.23	<0.25
	Perfluorooctanesulfonic acid (PFOS)	3.0	µg/kg	<0.47	0.37 J	1.3	<b>290</b>	<b>16</b>	<b>15</b>	0.32 J	<0.47	0.94
	Perfluorooctanoic acid (PFOA)	1.7	µg/kg	<0.19	<0.19	<0.19	<b>3.8</b>	0.25	0.29	<0.23	<0.19	<0.20

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

EPA United States Environmental Protection Agency

PFAS per- and poly-fluoroalkyl substances

µg/kg micrograms per kilogram

— No applicable regulatory limit exists for the associated analyte.

< Analyte was not detected; reported as <LOD.

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

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

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

**TABLE 1**  
**APRIL 2021 GUSTAVUS SURFACE WATER PFAS RESULTS**

Analytical Method	Analyte	Regulatory Limit	Units	GST-38-SW	
				Primary	Duplicate
EPA 537 (Mod)	Perfluorohexanesulfonic acid (PFHxS)	—	ng/L	0.84 J	0.69 J
	Perfluorohexanoic acid (PFHxA)	—	ng/L	2.2	1.7
	Perfluoroheptanoic acid (PFHpA)	—	ng/L	2.3	2.8
	Perfluorononanoic acid (PFNA)	—	ng/L	0.98 J	1.0 J
	Perfluorobutanesulfonic acid (PFBS)	—	ng/L	0.33 J	<1.7
	Perfluorodecanoic acid (PFDA)	—	ng/L	<1.7	<1.7
	Perfluoroundecanoic acid (PFUnA)	—	ng/L	<1.7 J*	<1.7
	Perfluorododecanoic acid (PFDoA)	—	ng/L	<1.7 J*	<1.7 J*
	Perfluorotridecanoic acid (PFTTrDA)	—	ng/L	<1.7	<1.7
	Perfluorotetradecanoic acid (PFTeA)	—	ng/L	<1.7	<1.7
	N-Methyl perfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	—	ng/L	<4.1	<4.2
	N-Ethyl perfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	—	ng/L	<4.1	<4.2
	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	—	ng/L	<1.7	<1.7
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	—	ng/L	<1.7	<1.7
	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	—	ng/L	<1.7	<1.7
	Hexafluoropropylene oxide dimer acid (HFPO-DA)	—	ng/L	<3.3	<3.4
	Perfluorooctanesulfonic acid (PFOS)	70	ng/L	<1.7	<1.7
	Perfluorooctanoic acid (PFOA)		ng/L	1.6 J	1.9

Notes: Results reported from Eurofins TestAmerica Laboratory work order 320-72243-1.  
Regulatory limit for PFOS and PFOA is the EPA Lifetime Health Advisory Level.

- EPA United States Environmental Protection Agency
- LHA Lifetime Health Advisory Level
- PFAS per- and poly-fluoroalkyl substances
- ng/L nanograms per liter
- No applicable regulatory limit exists for the associated analyte.
- < Analyte was not detected; reported as <reporting limit.
- J Estimated concentration, detected greater than the detection limit (DL) and less than the reporting limit (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**

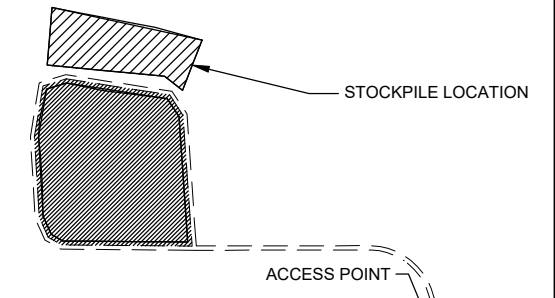
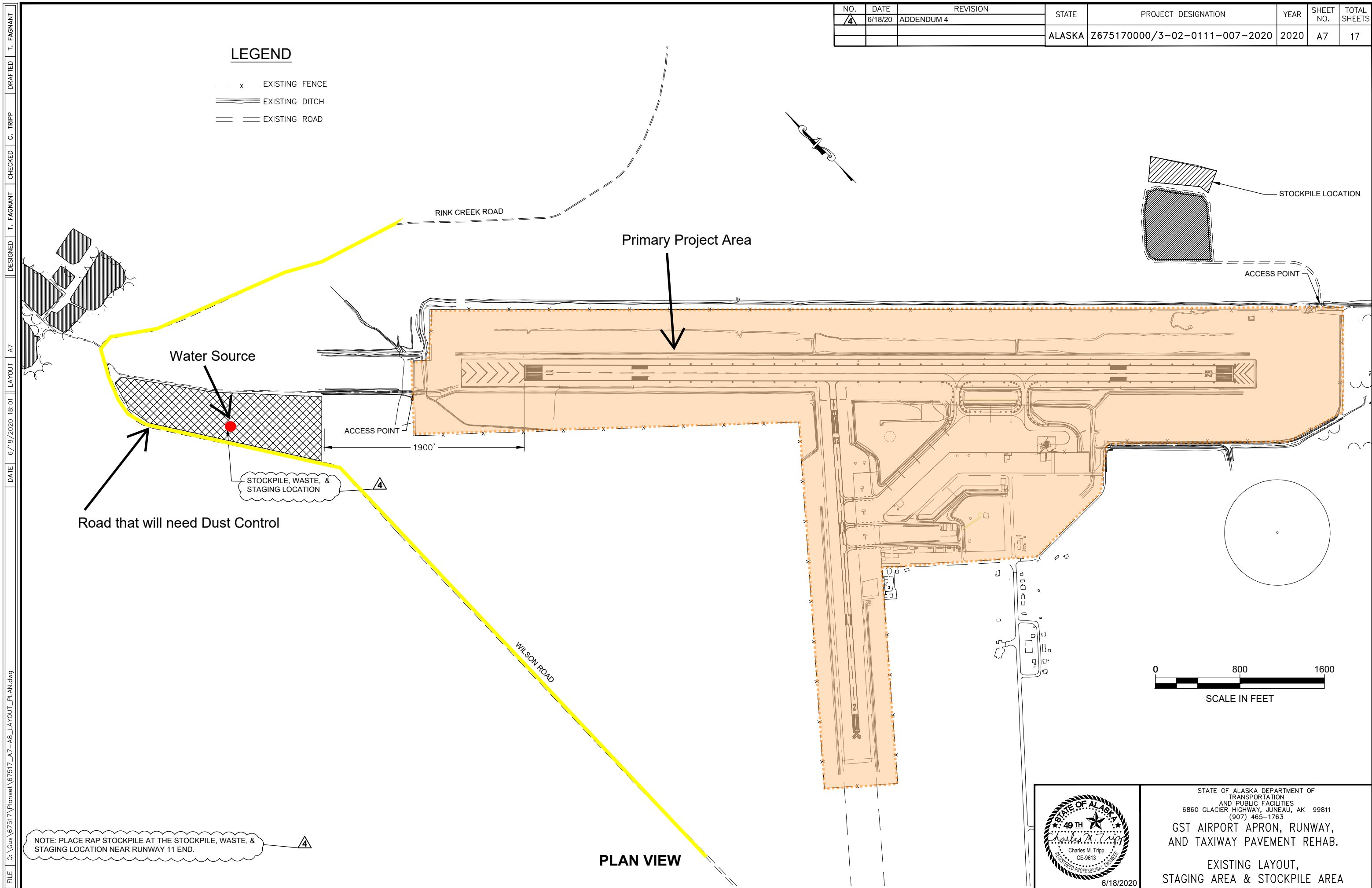
Analytical Method	Analyte	Regulatory Limit	Units	GST-35-AS							
				GST-30-AS	GST-31-AS	GST-32-AS	GST-33-AS	GST-34-AS	Primary	Duplicate	GST-37-AS
		SECON Test Pit Reference Number		19	21	22	23	24	S&W 1	S&W 2	
EPA 537 (Mod)	Perfluorohexanesulfonic acid (PFHxS)	—	µg/kg	0.11 J	0.035 J	<0.20	<0.19	0.043 J	0.52	0.55 J*	6.6
	Perfluorohexanoic acid (PFHxA)	—	µg/kg	<0.19	<0.19	<0.20	<0.19	<0.19	0.35	0.38	2.0
	Perfluoroheptanoic acid (PFHpA)	—	µg/kg	<0.19	<0.19	<0.20	<0.19	<0.19	<0.19	0.039 J	0.33
	Perfluorononanoic acid (PFNA)	—	µg/kg	<0.19	<0.19	<0.20	<0.19	<0.19	<0.19	<0.20	<0.20
	Perfluorobutanesulfonic acid (PFBS)	—	µg/kg	<0.19	<0.19	<0.20	<0.19	<0.19	0.13 J*	0.20 J*	1.6
	Perfluorodecanoic acid (PFDA)	—	µg/kg	<0.19	<0.19	<0.20	<0.19	<0.19	<0.19	<0.20	<0.20
	Perfluoroundecanoic acid (PFUnA)	—	µg/kg	<0.19	<0.19	<0.20	<0.19	<0.19	<0.19	<0.20	<0.20
	Perfluorododecanoic acid (PFDoA)	—	µg/kg	<0.19	<0.19	<0.20	<0.19	<0.19 J*	<0.19	<0.20	<0.20
	Perfluorotridecanoic acid (PFTrDA)	—	µg/kg	<0.19	<0.19	<0.20	<0.19	<0.19	<0.19	<0.20	<0.20
	Perfluorotetradecanoic acid (PFTeA)	—	µg/kg	<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	<1.9	<1.9	<2.0	<1.9	<1.9	<1.9	<2.0	<2.0
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	Hexafluoropropylene oxide dimer acid (HFPO-DA)	—	µg/kg	<0.23	<0.24	<0.25	<0.24	<0.24	<0.24	<0.25	<0.25
	Perfluorooctanesulfonic acid (PFOS)	3.0	µg/kg	0.99	<0.48	0.21 J	<0.48	0.32 J	<b>5.9</b>	<b>6.6 J*</b>	<b>53</b>
	Perfluorooctanoic acid (PFOA)	1.7	µg/kg	<0.19	<0.19	<0.20	<0.19	<0.19	0.10 J	<0.20	0.72

Notes: Results reported from Eurofins TestAmerica Laboratory work order 320-72243-1.  
 Regulatory limits from 18 AAC 75.341 Table B1 Method Two - Soil Cleanup Levels Table (Migration to Groundwater).  
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NO.	DATE	REVISION	STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
4	6/18/20	ADDENDUM 4	ALASKA	Z675170000/3-02-0111-007-2020	2020	A7	17

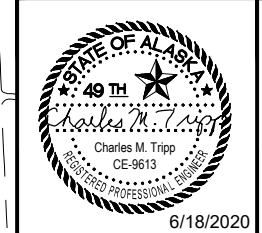
**LEGEND**

- x — EXISTING FENCE
- ==== EXISTING DITCH
- == EXISTING ROAD



NOTE: PLACE RAP STOCKPILE AT THE STOCKPILE, WASTE, & STAGING LOCATION NEAR RUNWAY 11 END.

**PLAN VIEW**



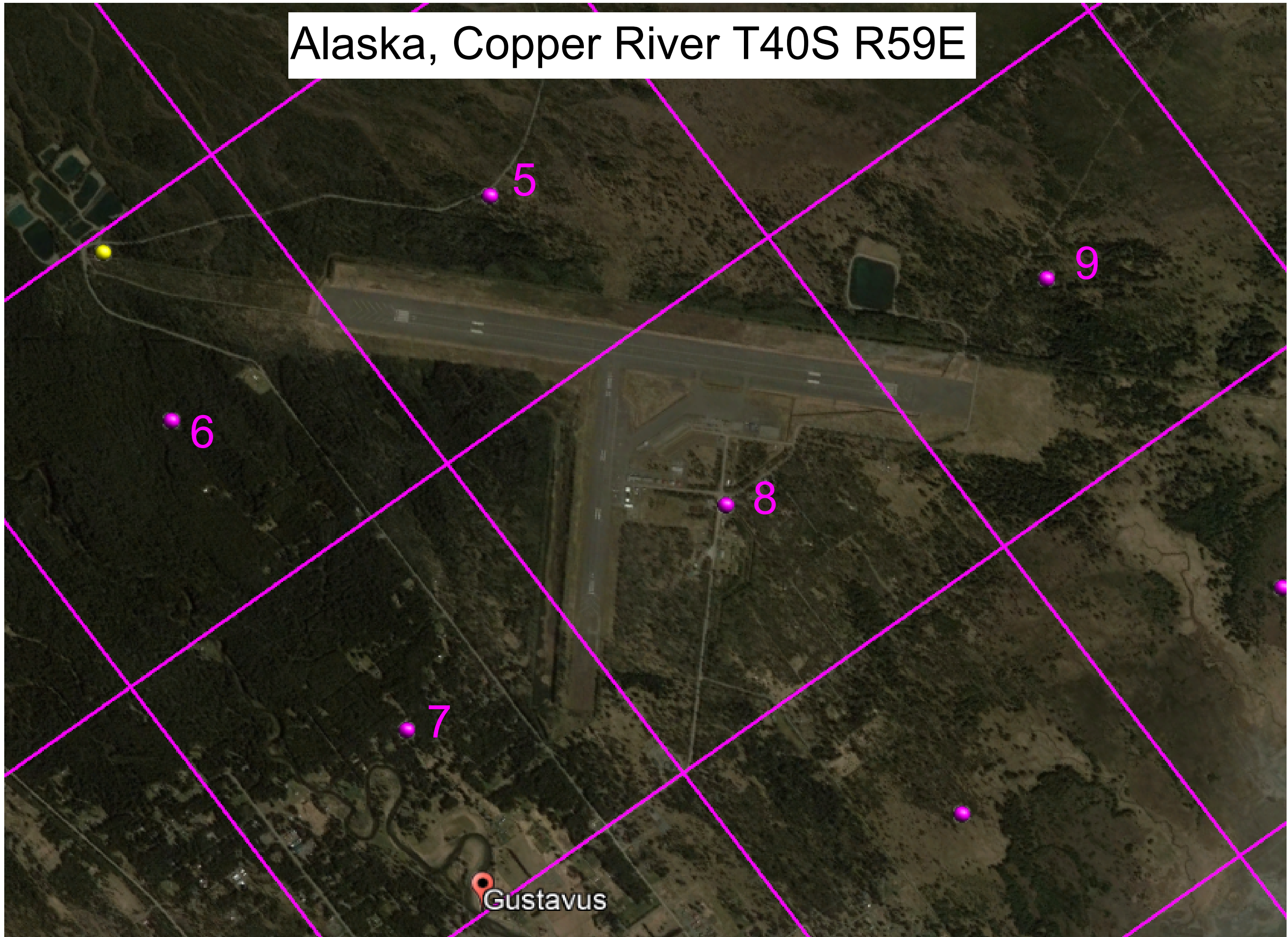
STATE OF ALASKA DEPARTMENT OF  
TRANSPORTATION  
AND PUBLIC FACILITIES  
6860 GLACIER HIGHWAY, JUNEAU, AK 99811  
(907) 465-1763

**GST AIRPORT APRON, RUNWAY,  
AND TAXIWAY PAVEMENT REHAB.**

EXISTING LAYOUT,  
STAGING AREA & STOCKPILE AREA

FILE Q:\Gus\67517\Plmset\67517\_A7-A8\_LAYOUT\_PLAN.dwg  
 DATE 6/18/2020 18:01 LAYOUT A7  
 DESIGNED T. FAGNANT  
 CHECKED C. TRIPP  
 DRAFTED T. FAGNANT

Alaska, Copper River T40S R59E



# Water Area



This pit was dug on the project site. It subsequently filled with water. Secon intends to use this water for dust control on the nearby wilson road and Airport project site. The pit appears to fill overnight and is restabilized the next morning. The water in this area fills from ground water which is very shallow in Gustavus, Alaska. Based on the test results, alternative water sources will be used.