



RTI Laboratories
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Tuesday, November 12, 2019

Kyle Horne
Sprinturf
146 Fairchild Street, Suite 150
Daniel Island, SC 29492
TEL: (843) 936-6009
FAX:

RE: PFAS Analysis of Synthetic Turf Backing

Work Order #: 1911087

Dear Kyle Horne:

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

This report may only be reproduced in its entirety. Individual pages, reproduced without supporting documentation, do not contain related information and may be misinterpreted by other data reviewers.

Quality control data is within laboratory defined or method specified acceptance limits except if noted.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Lloyd Kaufman".

Lloyd Kaufman
Director of Materials Sciences

Client: Sprinturf

Project: PFAS Analysis of Synthetic Turf Backing

Summary,

Total fluorine content was determined at 81mg/kg (ppm) which equates to 0.0081% w/w

All extractable PFAS compounds were non-detect at a level of 2-4 ug/kg (ppb). Surrogate value exceedances were qualified due to non-detection of target analyte.

Client: Sprinturf
 Project: PFAS Analysis of Synthetic Turf Backing
 Lab ID: 1911087-001
 Client Sample ID: Urethane Coated Turf Backing

Collection Date:
 Matrix:

Analysis	Result	RL	Qual	Units	DF	Date Analyzed	
Elemental Analysis by Bomb Combustion and IC		Method: ASTMD4327				Analyst: LK	
Fluorine	81	32		mg/Kg	1	11/12/2019 8:06 AM	
Perfluorinated Compounds Solid Matrix LC/MS/MS		Method: EPA 537.1MOD				Analyst: DKS	
1H,1H,2H,2H-Perfluorodecanesulfonate	ND	3.9		µg/Kg	1	11/5/2019 3:46 PM	
1H,1H,2H,2H-Perfluorohexanesulfonate	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
1H,1H,2H,2H-Perfluorooctanesulfonate	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
HFPO-DA (GEN X)	ND	3.9		µg/Kg	1	11/5/2019 3:46 PM	
N-ethyl perfluorooctanesulfonamidoacetic acid	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
N-methyl perfluorooctanesulfonamidoacetic acid	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluorobutanesulfonic acid	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluorobutanoic acid	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluorodecanesulfonate	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluorodecanoic acid	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluorododecanoic acid	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluoroheptanesulfonate	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluoroheptanoic acid	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluorohexanesulfonic acid	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluorohexanoic acid	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluoronanesulfonate	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluoronanoic acid	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluorooctanesulfonic acid	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluorooctanoic acid	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluorooctansulfonamide	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluoropentanesulfonate	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluoropentanoic acid	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluorotetradecanoic acid	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluorotridecanoic acid	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Perfluoroundecanoic acid	ND	2.0		µg/Kg	1	11/5/2019 3:46 PM	
Surr: D3-N-MeFOSAA	98.0	50-150		%Rec	1	11/5/2019 3:46 PM	
Surr: D5-N-EtFOSAA	138	50-150		%Rec	1	11/5/2019 3:46 PM	
Surr: M2PFTeDA	78.0	50-150		%Rec	1	11/5/2019 3:46 PM	
Surr: M3 GEN X	84.0	50-150		%Rec	1	11/5/2019 3:46 PM	
Surr: M3PFBS	98.0	50-150		%Rec	1	11/5/2019 3:46 PM	
Surr: M3PFHxS	100	50-150		%Rec	1	11/5/2019 3:46 PM	
Surr: M5PFHpA	102	50-150		%Rec	1	11/5/2019 3:46 PM	
Surr: M5PFHxA	98.0	50-150		%Rec	1	11/5/2019 3:46 PM	
Surr: M5PFPeA	104	50-150		%Rec	1	11/5/2019 3:46 PM	
Surr: M6PFDA	99.0	50-150		%Rec	1	11/5/2019 3:46 PM	
Surr: M7PFUdA	99.0	50-150		%Rec	1	11/5/2019 3:46 PM	
Surr: M8PFOA	101	50-150		%Rec	1	11/5/2019 3:46 PM	
Surr: M8PFOS	91.0	50-150		%Rec	1	11/5/2019 3:46 PM	

RTI Laboratories, Inc. - Analytical Report

WO#: 1911087

Date Reported: 11/12/2019

Revision v1

Client: Sprinturf
Project: PFAS Analysis of Synthetic Turf Backing
Lab ID: 1911087-001
Client Sample ID: Urethane Coated Turf Backing

Collection Date:
Matrix:

Analysis	Result	RL	Qual	Units	DF	Date Analyzed
Surr: M9PFNA	94.0	50-150		%Rec	1	11/5/2019 3:46 PM
Surr: MFPBA	95.0	50-150		%Rec	1	11/5/2019 3:46 PM
Surr: MPFDoA	94.0	50-150		%Rec	1	11/5/2019 3:46 PM

RTI Laboratories, Inc. - QC SUMMARY REPORT

WO#: 1911087

Date Reported: 11/12/2019

Revision v1

Client: Sprinturf

Project: PFAS Analysis of Synthetic Turf Backing

Batch ID: 50525

Sample ID: MB-50525	Samp Type: MBLK	Test Code: EPA_537-Mod-S-I	Units: µg/Kg	Prep Date: 11/5/2019	RunNo: 114713
Client ID: PBS	Batch ID: 50525	TestNo: EPA_537-Mod		Analysis Date: 11/5/2019	SeqNo: 2237100

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
1H,1H,2H,2H-Perfluorodecanesulfonate	ND	4.0									
1H,1H,2H,2H-Perfluorohexanesulfonate	ND	2.0									
1H,1H,2H,2H-Perfluorooctanesulfonate	ND	2.0									
HFPO-DA (GEN X)	ND	4.0									
N-ethyl perfluorooctanesulfonamidoacetic acid	ND	2.0									
N-methyl perfluorooctanesulfonamidoacetic acid	ND	2.0									
Perfluorobutanesulfonic acid	ND	2.0									
Perfluorobutanoic acid	ND	2.0									
Perfluorodecanesulfonate	ND	2.0									
Perfluorodecanoic acid	ND	2.0									
Perfluorododecanoic acid	ND	2.0									
Perfluoroheptanesulfonate	ND	2.0									
Perfluoroheptanoic acid	ND	2.0									
Perfluorohexanesulfonic acid	ND	2.0									
Perfluorohexanoic acid	ND	2.0									
Perfluorononanesulfonate	ND	2.0									
Perfluorononanoic acid	ND	2.0									
Perfluorooctanesulfonic acid	ND	2.0									
Perfluorooctanoic acid	ND	2.0									
Perfluorooctansulfonamide	ND	2.0									
Perfluoropentanesulfonate	ND	2.0									
Perfluoropentanoic acid	ND	2.0									
Perfluorotetradecanoic acid	ND	2.0									
Perfluorotridecanoic acid	ND	2.0									
Perfluoroundecanoic acid	ND	2.0									
Surr: D3-N-MeFOSAA	7.9		9.990		79.0	50	150				
Surr: D5-N-EtFOSAA	8.8		9.990		88.0	50	150				
Surr: M2PFTeDA	10		9.990		102	50	150				
Surr: M3 GEN X	9.1		9.990		91.0	50	150				

RTI Laboratories, Inc. - QC SUMMARY REPORT

WO#: 1911087

Date Reported: 11/12/2019

Revision v1

Client: Sprinturf

Project: PFAS Analysis of Synthetic Turf Backing

Batch ID: 50525

Sample ID: MB-50525	Samp Type: MBLK	Test Code: EPA_537-Mod-S-I	Units: µg/Kg	Prep Date: 11/5/2019	RunNo: 114713						
Client ID: PBS	Batch ID: 50525	TestNo: EPA_537-Mod		Analysis Date: 11/5/2019	SeqNo: 2237100						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Surr: M3PFBS	8.5		9.990		85.0	50	150				
Surr: M3PFHxS	9.1		9.990		91.0	50	150				
Surr: M5PFHpA	9.7		9.990		97.0	50	150				
Surr: M5PFHxA	8.6		9.990		86.0	50	150				
Surr: M5PFPeA	9.0		9.990		90.0	50	150				
Surr: M6PFDA	9.3		9.990		93.0	50	150				
Surr: M7PFUdA	9.3		9.990		93.0	50	150				
Surr: M8PFOA	9.3		9.990		93.0	50	150				
Surr: M8PFOS	8.9		9.990		89.0	50	150				
Surr: M9PFNA	9.2		9.990		92.0	50	150				
Surr: MFPBA	8.7		9.990		87.0	50	150				
Surr: MPFDoA	9.2		9.990		92.0	50	150				

Sample ID: LCS-50525	Samp Type: LCS	Test Code: EPA_537-Mod-S-I	Units: µg/Kg	Prep Date: 11/5/2019	RunNo: 114713						
Client ID: LCSS	Batch ID: 50525	TestNo: EPA_537-Mod		Analysis Date: 11/5/2019	SeqNo: 2237101						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
1H,1H,2H,2H-Perfluorodecanesulfonate	13	4.0	9.995	0	128	70	130				
1H,1H,2H,2H-Perfluorohexanesulfonate	9.7	2.0	9.995	0	97.0	70	130				
1H,1H,2H,2H-Perfluorooctanesulfonate	12	2.0	9.995	0	123	70	130				
HFPO-DA (GEN X)	11	4.0	9.995	0	112	70	130				
N-ethyl perfluorooctanesulfonamidoacetic acid	11	2.0	9.995	0	109	70	130				
N-methyl perfluorooctanesulfonamidoacetic acid	11	2.0	9.995	0	111	70	130				
Perfluorobutanesulfonic acid	10	2.0	9.995	0	102	70	130				
Perfluorobutanoic acid	11	2.0	9.995	0	109	70	130				
Perfluorodecanesulfonate	11	2.0	9.995	0	107	70	130				
Perfluorodecanoic acid	11	2.0	9.995	0	110	70	130				
Perfluorododecanoic acid	11	2.0	9.995	0	110	70	130				
Perfluoroheptanesulfonate	11	2.0	9.995	0	112	70	130				

RTI Laboratories, Inc. - QC SUMMARY REPORT

WO#: 1911087

Date Reported: 11/12/2019

Revision v1

Client: Sprinturf

Project: PFAS Analysis of Synthetic Turf Backing

Batch ID: 50525

Sample ID: LCS-50525	Samp Type: LCS	Test Code: EPA_537-Mod-S-I	Units: µg/Kg	Prep Date: 11/5/2019	RunNo: 114713
Client ID: LCSS	Batch ID: 50525	TestNo: EPA_537-Mod		Analysis Date: 11/5/2019	SeqNo: 2237101

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Perfluoroheptanoic acid	11	2.0	9.995	0	113	70	130				
Perfluorohexanesulfonic acid	11	2.0	9.995	0	109	70	130				
Perfluorohexanoic acid	11	2.0	9.995	0	108	70	130				
Perfluorononanesulfonate	11	2.0	9.995	0	113	70	130				
Perfluorononanoic acid	11	2.0	9.995	0	114	70	130				
Perfluorooctanesulfonic acid	11	2.0	9.995	0	108	70	130				
Perfluorooctanoic acid	12	2.0	9.995	0	117	70	130				
Perfluorooctansulfonamide	11	2.0	9.995	0	110	70	130				
Perfluoropentanesulfonate	9.4	2.0	9.995	0	94.0	70	130				
Perfluoropentanoic acid	10	2.0	9.995	0	104	70	130				
Perfluorotetradecanoic acid	11	2.0	9.995	0	110	70	130				
Perfluorotridecanoic acid	9.6	2.0	9.995	0	96.0	70	130				
Perfluoroundecanoic acid	11	2.0	9.995	0	106	70	130				
Surr: D3-N-MeFOSAA	8.3		9.995		83.0	50	150				
Surr: D5-N-EtFOSAA	9.3		9.995		93.0	50	150				
Surr: M2PFTeDA	9.4		9.995		94.0	50	150				
Surr: M3 GEN X	10		9.995		100	50	150				
Surr: M3PFBS	8.2		9.995		82.0	50	150				
Surr: M3PFHxS	8.1		9.995		81.0	50	150				
Surr: M5PFHpA	9.0		9.995		90.0	50	150				
Surr: M5PFHxA	8.5		9.995		85.0	50	150				
Surr: M5PFPeA	8.2		9.995		82.0	50	150				
Surr: M6PFDA	8.6		9.995		86.0	50	150				
Surr: M7PFUdA	9.3		9.995		93.0	50	150				
Surr: M8PFOA	8.7		9.995		87.0	50	150				
Surr: M8PFOS	8.8		9.995		88.0	50	150				
Surr: M9PFNA	9.0		9.995		90.0	50	150				
Surr: MFPBA	8.2		9.995		82.0	50	150				
Surr: MPFDoA	8.9		9.995		89.0	50	150				

RTI Laboratories, Inc. - QC SUMMARY REPORT

WO#: 1911087

Date Reported: 11/12/2019

Revision v1

Client: Sprinturf

Project: PFAS Analysis of Synthetic Turf Backing

Batch ID: 50525

Sample ID:	LCSD-50525	Samp Type:	LCSD	Test Code:	EPA_537-Mod-S-I	Units:	µg/Kg	Prep Date:	11/5/2019	RunNo:	114713
Client ID:	LCSS02	Batch ID:	50525	TestNo:	EPA_537-Mod	Analysis Date:	11/5/2019	SeqNo:	2237102		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
1H,1H,2H,2H-Perfluorodecanesulfonate	12	4.0	9.916	0	126	70	130	12.79	2.37	30	
1H,1H,2H,2H-Perfluorohexanesulfonate	11	2.0	9.916	0	107	70	130	9.695	9.01	30	
1H,1H,2H,2H-Perfluorooctanesulfonate	12	2.0	9.916	0	120	70	130	12.29	3.27	30	
HFPO-DA (GEN X)	8.6	4.0	9.916	0	87.0	70	130	11.19	25.9	30	
N-ethyl perfluorooctanesulfonamidoacetic acid	12	2.0	9.916	0	118	70	130	10.89	7.13	30	
N-methyl perfluorooctanesulfonamidoacetic acid	11	2.0	9.916	0	112	70	130	11.09	0.100	30	
Perfluorobutanesulfonic acid	10	2.0	9.916	0	103	70	130	10.19	0.179	30	
Perfluorobutanoic acid	10	2.0	9.916	0	104	70	130	10.89	5.49	30	
Perfluorodecanesulfonate	12	2.0	9.916	0	117	70	130	10.69	8.13	30	
Perfluorodecanoic acid	11	2.0	9.916	0	106	70	130	10.99	4.50	30	
Perfluorododecanoic acid	11	2.0	9.916	0	110	70	130	10.99	0.796	30	
Perfluoroheptanesulfonate	12	2.0	9.916	0	116	70	130	11.19	2.71	30	
Perfluoroheptanoic acid	12	2.0	9.916	0	116	70	130	11.29	1.82	30	
Perfluorohexanesulfonic acid	11	2.0	9.916	0	109	70	130	10.89	0.796	30	
Perfluorohexanoic acid	11	2.0	9.916	0	112	70	130	10.79	2.84	30	
Perfluorononanesulfonate	12	2.0	9.916	0	118	70	130	11.29	3.53	30	
Perfluorononanoic acid	12	2.0	9.916	0	122	70	130	11.39	5.98	30	
Perfluorooctanesulfonic acid	11	2.0	9.916	0	110	70	130	10.79	1.04	30	
Perfluorooctanoic acid	10	2.0	9.916	0	101	70	130	11.69	15.5	30	
Perfluorooctansulfonamide	12	2.0	9.916	0	118	70	130	10.99	6.22	30	
Perfluoropentanesulfonate	11	2.0	9.916	0	106	70	130	9.395	11.2	30	
Perfluoropentanoic acid	11	2.0	9.916	0	108	70	130	10.39	2.98	30	
Perfluorotetradecanoic acid	10	2.0	9.916	0	101	70	130	10.99	9.33	30	
Perfluorotridecanoic acid	9.7	2.0	9.916	0	98.0	70	130	9.595	1.27	30	
Perfluoroundecanoic acid	12	2.0	9.916	0	116	70	130	10.59	8.21	30	
Surr: D3-N-MeFOSAA	8.0		9.916		81.0	50	150		0	30	
Surr: D5-N-EtFOSAA	8.3		9.916		84.0	50	150		0	30	
Surr: M2PFTeDA	9.6		9.916		97.0	50	150		0	30	
Surr: M3 GEN X	11		9.916		107	50	150		0	30	

RTI Laboratories, Inc. - QC SUMMARY REPORT

WO#: 1911087

Date Reported: 11/12/2019

Revision v1

Client: Sprinturf

Project: PFAS Analysis of Synthetic Turf Backing

Batch ID: 50525

Sample ID: LCSD-50525	Samp Type: LCSD	Test Code: EPA_537-Mod-S-I	Units: µg/Kg	Prep Date: 11/5/2019	RunNo: 114713
Client ID: LCSS02	Batch ID: 50525	TestNo: EPA_537-Mod		Analysis Date: 11/5/2019	SeqNo: 2237102

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Surr: M3PFBS	8.4		9.916		85.0	50	150		0	30	
Surr: M3PFHxS	8.6		9.916		87.0	50	150		0	30	
Surr: M5PFHpA	8.9		9.916		90.0	50	150		0	30	
Surr: M5PFHxA	8.8		9.916		89.0	50	150		0	30	
Surr: M5PFPeA	8.4		9.916		85.0	50	150		0	30	
Surr: M6PFDA	9.1		9.916		92.0	50	150		0	30	
Surr: M7PFUdA	9.0		9.916		91.0	50	150		0	30	
Surr: M8PFOA	9.4		9.916		95.0	50	150		0	30	
Surr: M8PFOS	8.2		9.916		83.0	50	150		0	30	
Surr: M9PFNA	8.7		9.916		88.0	50	150		0	30	
Surr: MFPBA	8.5		9.916		86.0	50	150		0	30	
Surr: MPFDoA	9.1		9.916		92.0	50	150		0	30	

RTI Laboratories, Inc. - QC SUMMARY REPORT

WO#: 1911087

Date Reported: 11/12/2019

Revision v1

Client: Sprinturf

Project: PFAS Analysis of Synthetic Turf Backing

Batch ID: R114713

Sample ID: ICV-110519	Samp Type: ICV	Test Code: EPA_537-Mod-S-I	Units: %Rec	Prep Date: 11/5/2019	RunNo: 114713
Client ID: ICV	Batch ID: R114713	TestNo: EPA_537-Mod		Analysis Date: 11/5/2019	SeqNo: 2237096

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Surr: D3-N-MeFOSAA	9.7		10.00		97.0	50	150				
Surr: D5-N-EtFOSAA	9.7		10.00		97.0	50	150				
Surr: M2PFTeDA	11		10.00		110	50	150				
Surr: M3 GEN X	9.6		10.00		96.0	50	150				
Surr: M3PFBS	10		10.00		100	50	150				
Surr: M3PFHxS	10		10.00		103	50	150				
Surr: M5PFHpA	9.6		10.00		96.0	50	150				
Surr: M5PFHxA	9.7		10.00		97.0	50	150				
Surr: M5PFPeA	9.8		10.00		98.0	50	150				
Surr: M6PFDA	9.8		10.00		98.0	50	150				
Surr: M7PFUdA	10		10.00		105	50	150				
Surr: M8PFOA	10		10.00		100	50	150				
Surr: M8PFOS	10		10.00		105	50	150				
Surr: M9PFNA	9.8		10.00		98.0	50	150				
Surr: MFPBA	9.7		10.00		97.0	50	150				
Surr: MPFDoA	10		10.00		105	50	150				

Sample ID: ICB-110519	Samp Type: ICB	Test Code: EPA_537-Mod-S-I	Units: %Rec	Prep Date: 11/5/2019	RunNo: 114713
Client ID: ICB	Batch ID: R114713	TestNo: EPA_537-Mod		Analysis Date: 11/5/2019	SeqNo: 2237097

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Surr: D3-N-MeFOSAA	9.5		10.00		95.0	0	0				S
Surr: D5-N-EtFOSAA	7.7		10.00		77.0	0	0				S
Surr: M2PFTeDA	11		10.00		112	0	0				S
Surr: M3 GEN X	11		10.00		107	0	0				S
Surr: M3PFBS	12		10.00		125	0	0				S
Surr: M3PFHxS	13		10.00		133	0	0				S
Surr: M5PFHpA	14		10.00		136	0	0				S
Surr: M5PFHxA	12		10.00		124	0	0				S
Surr: M5PFPeA	13		10.00		130	0	0				S
Surr: M6PFDA	12		10.00		125	0	0				S

RTI Laboratories, Inc. - QC SUMMARY REPORT

WO#: 1911087

Date Reported: 11/12/2019

Revision v1

Client: Sprinturf

Project: PFAS Analysis of Synthetic Turf Backing

Batch ID: R114713

Sample ID: ICB-110519	Samp Type: ICB	Test Code: EPA_537-Mod-S-I	Units: %Rec	Prep Date: 11/5/2019	RunNo: 114713
Client ID: ICB	Batch ID: R114713	TestNo: EPA_537-Mod		Analysis Date: 11/5/2019	SeqNo: 2237097

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Surr: M7PFUdA	12		10.00		123	0	0				S
Surr: M8PFOA	13		10.00		134	0	0				S
Surr: M8PFOS	12		10.00		124	0	0				S
Surr: M9PFNA	13		10.00		129	0	0				S
Surr: MFPBA	12		10.00		122	0	0				S
Surr: MPFDoA	12		10.00		121	0	0				S

Sample ID: CCV-110519	Samp Type: CCV	Test Code: EPA_537-Mod-S-I	Units: %Rec	Prep Date: 11/5/2019	RunNo: 114713
Client ID: CCV	Batch ID: R114713	TestNo: EPA_537-Mod		Analysis Date: 11/5/2019	SeqNo: 2237104

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual
Surr: D3-N-MeFOSAA	9.7		10.00		97.0	50	150				
Surr: D5-N-EtFOSAA	10		10.00		104	50	150				
Surr: M2PFTeDA	9.9		10.00		99.0	50	150				
Surr: M3 GEN X	11		10.00		112	50	150				
Surr: M3PFBS	9.6		10.00		96.0	50	150				
Surr: M3PFHxS	10		10.00		104	50	150				
Surr: M5PFHpA	10		10.00		104	50	150				
Surr: M5PFHxA	10		10.00		101	50	150				
Surr: M5PFPeA	10		10.00		104	50	150				
Surr: M6PFDA	11		10.00		107	50	150				
Surr: M7PFUdA	11		10.00		111	50	150				
Surr: M8PFOA	11		10.00		107	50	150				
Surr: M8PFOS	9.7		10.00		97.0	50	150				
Surr: M9PFNA	10		10.00		101	50	150				
Surr: MFPBA	10		10.00		100	50	150				
Surr: MPFDoA	11		10.00		109	50	150				

RTI Laboratories, Inc. - QC SUMMARY REPORT

WO#: 1911087

Date Reported: 11/12/2019

Revision v1

Client: Sprinturf

Project: PFAS Analysis of Synthetic Turf Backing

Batch ID: R114713

Sample ID: CCB-110519	Samp Type: CCB	Test Code: EPA_537-Mod-S-I	Units: %Rec	Prep Date: 11/5/2019	RunNo: 114713						
Client ID: CCB	Batch ID: R114713	TestNo: EPA_537-Mod		Analysis Date: 11/5/2019	SeqNo: 2237105						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Value	%RPD	RPDLimit	Qual

Surr: D3-N-MeFOSAA	9.5										
Surr: D5-N-EtFOSAA	9.3										
Surr: M2PFTeDA	13										
Surr: M3 GEN X	12										
Surr: M3PFBS	13										
Surr: M3PFHxS	12										
Surr: M5PFHpA	14										
Surr: M5PFHxA	12										
Surr: M5PFPeA	13										
Surr: M6PFDA	13										
Surr: M7PFUdA	13										
Surr: M8PFOA	15										
Surr: M8PFOS	13										
Surr: M9PFNA	13										
Surr: MFPBA	13										
Surr: MPFDoA	12										

DEFINITIONS:

DF: Dilution factor; the dilution factor applied to the prepared sample.

DUP: Duplicate; aliquots of a sample taken from the same container under laboratory conditions and processed and analyzed independently, used to calculate Precision (%RPD).

LCS: Laboratory Control Sample; prepared by adding a known amount of target analytes to a specified amount of clean matrix and prepared with the batch of samples, used to calculate Accuracy (%REC).

LCSD: A duplicate LCS sample, used to calculate both Accuracy (%REC) and Precision (%RPD)

MBLK: Method Blank; a sample of similar matrix that does not contain target analytes or interference that may impact the analytical results and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedure, used to assess and verify that the analytical process is free of contamination.

MDL: Method Detection Limit; The lowest concentration of analyte that can be detected by the method in the applicable matrix.

Mg/Kg or mg/L: Units of part per million (PPM) – milligram per Kilogram (W/W) or milligram per Liter (W/V).

MS: Matrix Spike; prepared by adding a known amount of target analytes to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available, used to calculate Accuracy (%REC)

MSD: A duplicate MS sample, used to calculate both Accuracy (%REC) and Precision (%RPD)

% REC: Percent Recovery of a known spike (SPK); a measure of accuracy expressed as a percentage of a measured (recovered) concentration compared to the known concentration (SPK) added to the sample. This is compared to the Low Limit and High Limit.

% RPD: Relative Percent Difference; a measure of precision expressed as a percentage of the difference between two duplicates relative to the average concentration. This is compared to the RPD Limit.

PL: Permit limit;; Not included on all reports. Used primarily for wastewater discharge permits.

PQL: Practical Quantitation Limit; The lowest verified limit to which data is quantified without qualifications. Analyte concentrations below PQL are reported either as ND or as a number with a "J" qualifier.

Qual: Qualifier that applies to the analyte reported

RL: Reporting Limit: See PQL

SPK: Spike; used in the QC section for both SPK Value and SPK Ref Val

Ug/Kg or ug/L: Units of part per billion (PPB) – microgram per Kilogram (W/W) or microgram per Liter (W/V).

QUALIFIERS:

*X: Reported value exceeds the maximum allowed concentration by regulation or permit

B: Analyte detected in the associated Method Blank at a concentration > RL.

E: Analyte concentration reported that exceeds the upper calibration standard. Greater uncertainty is associated with this result and data should be considered estimated.

H: Holding time for preparation or analysis has been exceeded

J: Analyte concentration is reported, and is less than the PQL and greater than or equal to the established MDL. Greater uncertainty is associated with this result and data reported is estimated. These analytes are not routinely reviewed nor narrated as to their potential for being laboratory artifacts.

M: Manual Integration used to determine area response

ND: Analyte concentration is less than the Reporting Limit.

P: Second column RPD exceeds 40%

R: % RPD exceeds control limits

S: % REC exceeds control limits

T: MBLK result is greater than 1/2 of the LOQ

U: The analyte concentration is less than the DL.