POLLEN ENVIRONMENTAL, LLC.

3536 International Street
Fairbanks, AK 99701
(907) 479-8368 Phone (907) 452-6853 Fax
jerry@pollenenv.com

CHAIN OF CUSTODY/WORKORDER FORM

COC# CONP 2017

CLIENT INFORMATION	Contact Person: **Paul Trissel**
Company: **City of North Pole**	
Address: **125 Snowman Lane**	**WWTP APDES #:**
City, State Zip: **North Pole, AK 99705**	**PWS ID #: 310675**
Phone: **907-388-1907**	Send Results to ADEC:
Fax: **907-488-1825**	v Yes ☐ No
Email: **northpoleutilities@alaska.net**	Purchase Order/Charge Code:
Project Name: **Bi-Annual WTP Monitoring**	2017-120
Sampled By: **JEP**	

Requested Analysis

Perservative Added

Sample Identification	Sample Date	Sample Time	Matrix	Lab ID#	Sub Lab ID#	Number of Containers	PFOS							Sample Comments
Well B	**3/7/2017**	1115	**W**	PEF32469		1	X							

Page 1 of 1

☐ Normal Turnaround

☐ RUSH ____ day(s)

Possible Hazard Identification:

☐ *Non-Hazardous* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Unknown*

Sample Condition:

Pollen Env Temperature on arrival: °C *COC Seal:* ☐ *Intact* ☐ *Broken* ☐ *Absent*

Sub Lab Temperature on arrival: °C *COC Seal:* ☐ *Intact* ☐ *Broken* ☐ *Absent*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date & Time:	Received by:	Company:	Date & Time:
[signature]	Pollen Env	3-9-17 @ 1000am			
Relinquished by:	Company:	Date & Time:	Received by:	Company:	Date & Time:
Relinquished by:	Company:	Date & Time:	Received by:	Company:	Date & Time:

Pollen Environmental, LLC.
Pouch 340135 Prudhoe Bay, AK. 99734 3536 International Street Fairbanks, AK. 99701
(907)659-2324 Phone (907)659-2325 Fax (907)479-8368 Phone (907)452-6853 Fax
www.pollenenv.com

CERTIFICATE OF ANALYSIS

City of North Pole WTP
Attn: Paul Trissel
125 Snowman Lane
North Pole, AK 99705
Phone: 907-388-1907
Fax: 907-488-1825
northpoleutilities@alaska.net

Report Date: 3/24/2017
Sample Date: 3/7/2017
Sample Time: 11:15 AM
Sampled By: Jerry Pollen

Project Name:	**CONP WTP PFOS Monitoring**
Analysis:	**PFOS**
Analysis Method:	**EPA 537**
COC#:	**CONP 2017**
Sample Matrix:	**Drinking Water**
PWS ID#:	**AK2310675**

Attached are the results for analysis of your samples. This sample was analyzed by Eurofins Eaton Analytical in South Bend, IN.

Client Sample ID:	Pollen Env ID:	Eurofins Eaton Analytical ID:
Well B	PEF32469	3651834

Jerry Pollen
Pollen Environmental, LLC - Fairbanks

eurofins

Eaton Analytical

LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

eurofins | Eaton Analytical

STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Montana	CERT0026
Alaska	IN00035	Nebraska	E87775
Arizona	AZ0432	Nevada	IN00035
Arkansas	IN00035	New Hampshire*	2124
California	2920	New Mexico	IN00035
Colorado	IN035	New Jersey*	IN598
Colorado Radiochemistry	IN035	New York*	11398
Connecticut	PH-0132	North Carolina	18700
Delaware	IN035	North Dakota	R-035
Florida*	E87775	Ohio	87775
Georgia	929	Oklahoma	D9508
Hawaii	IN035	Oregon (Primary AB)*	4074-001
Idaho	IN00035/E87775	Pennsylvania*	68-00466
Illinois*	200001	Puerto Rico	IN00035
Illinois Microbiology	200001	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA160002	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
Missouri	880		

*NELAP/TNI Recognized Accreditation Bodies

Revision date: 04/14/2016

eurofins | Eaton Analytical

110 South Hill Street
South Bend, IN 46617
Tel: (574) 233-4777
Fax: (574) 233-8207
1 800 332 4345

Laboratory Report

Client: Pollen Environmental LLC

Attn: Jerry Pollen
3536 International Avenue
Fairbanks, AK 99701

Report: 384383
Priority: Standard Written
Status: Final
PWS ID: AK2310675
Alaska Lab ID # IN00035

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
3651834	PEF32469/Well B	537	03/07/17 11:15	Client	03/10/17 09:15

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Traci Chlebowski at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Traci Chlebowski ASM — 03/24/2017

Authorized Signature — Title — Date

Client Name: Pollen Environmental LLC
Report #: 384383

Client Name: Pollen Environmental LLC Report #: 384383

Sampling Point: PEF32469/Well B PWS ID: AK2310675

EEA Methods

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
1763-23-1	Perfluorooctane sulfonate (PFOS)	537	---	2.0	< 2.0	ng/L	03/16/17 08:07	03/17/17 01:06	3651834

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample al6iquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

POLLEN ENVIRONMENTAL, LLC.

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CHAIN OF CUSTODY/WORKORDER FORM

316239 COC# CONP 2017
384383

CLIENT INFORMATION	Contact Person: Paul Trissel
Company: **City of North Pole**	
Address: **125 Snowman Lane**	**WWTP APDES #:**
City, State Zip: **North Pole, AK 99705**	**PWS ID #: 310675**
Phone: **907-388-1907**	Send Results to ADEC:
Fax: **907-488-1825**	√ Yes ☐ No
Email: **northpoleutilities@alaska.net**	Purchase Order/Charge Code:
Project Name: **Bi-Annual WTP Monitoring**	2017-120
Sampled By: **JEP**	

Requested Analysis — Perservative Added

Page 1 of 1

☐ Normal Turnaround

☐ RUSH ____ day(s)

Sample Identification	Sample Date	Sample Time	Matrix	Lab ID#	Sub Lab ID#	Number of Containers	PFOS							Sample Comments
Well B	3/7/2017	1115	W	PEF32469	3651834	1	X							A

Possible Hazard Identification:

☐ *Non-Hazardous* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Unknown*

Sample Condition:

Pollen Env Temperature on arrival: °C *COC Seal:* ☐ *Intact* ☐ *Broken* ☐ *Absent*

Sub Lab Temperature on arrival: 1.0 °C *COC Seal:* ☒ *Intact* ☐ *Broken* ☐ *Absent*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date & Time:	Received by:	Company:	Date & Time:
Jerry Pollen	Pollen Env	3-9-17@1000am			
Relinquished by:	Company:	Date & Time:	Received by:	Company:	Date & Time:
Relinquished by:	Company:	Date & Time:	Received by: KDunn	Company: EPA	Date & Time: 3-10-17 0915

Accuracy, Precision, and Professional Service

Eurofins Eaton Analytical
Run Log

Run ID: **227119** Method: **537**

Type	Sample Id	Sample Site	Matrix	Instrument ID	Analysis Date	Calibration File
CCL	3655106		OS	FL	03/16/2017 18:40	031617M537a-FL-PFC12.mdb
LRB	3655077		RW	FL	03/16/2017 19:13	031617M537a-FL-PFC12.mdb
FBH	3655078		RW	FL	03/16/2017 19:47	031617M537a-FL-PFC12.mdb
CCM	3655107		OS	FL	03/16/2017 23:42	031617M537a-FL-PFC12.mdb
FS	3651834	PEF32469/Well B	DW	FL	03/17/2017 01:06	031617M537a-FL-PFC12.mdb
FD	3655076	PEF32469/Well B	DW	FL	03/17/2017 01:23	031617M537a-FL-PFC12.mdb
CCH	3655108		OS	FL	03/17/2017 02:30	031617M537a-FL-PFC12.mdb

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
CCL	IS-PFOA-13C2	537	N/A	---		1045790.00	1045790	ng/L	100	50 - 150	---	---	1.0	03/10/2017 16:12	03/16/2017 18:40	3655106
CCL	IS-PFOS-13C4	537	N/A	---		275581.00	275581	ng/L	100	50 - 150	---	---	1.0	03/10/2017 16:12	03/16/2017 18:40	3655106
CCL	SS-PFDA-13C2	537	N/A	---		98.8676	100	ng/L	99	70 - 130	---	---	1.0	03/10/2017 16:12	03/16/2017 18:40	3655106
CCL	SS-PFHxA-13C2	537	N/A	---		49.5244	50.0	ng/L	99	70 - 130	---	---	1.0	03/10/2017 16:12	03/16/2017 18:40	3655106
CCL	Perfluorooctane sulfonate (PFOS)	537	2.0	---		2.0180	2.0	ng/L	101	50 - 150	---	---	1.0	03/10/2017 16:12	03/16/2017 18:40	3655106
LRB	IS-PFOA-13C2	537	N/A	---		1081330.00	1045790	ng/L	103	50 - 150	---	---	0.95	03/16/2017 08:07	03/16/2017 19:13	3655077
LRB	IS-PFOS-13C4	537	N/A	---		282476.00	275581	ng/L	103	50 - 150	---	---	0.95	03/16/2017 08:07	03/16/2017 19:13	3655077
LRB	SS-PFDA-13C2	537	N/A	---		88.0498	100	ng/L	93	70 - 130	---	---	0.95	03/16/2017 08:07	03/16/2017 19:13	3655077
LRB	SS-PFHxA-13C2	537	N/A	---		43.4698	50.0	ng/L	92	70 - 130	---	---	0.95	03/16/2017 08:07	03/16/2017 19:13	3655077
LRB	Perfluorooctane sulfonate (PFOS)	537	2.0	---	<	2.0		ng/L	---	---	---	---	0.95	03/16/2017 08:07	03/16/2017 19:13	3655077
FBH	IS-PFOA-13C2	537	N/A	---		1034030.00	1045790	ng/L	99	50 - 150	---	---	1.0	03/16/2017 08:07	03/16/2017 19:47	3655078
FBH	IS-PFOS-13C4	537	N/A	---		269430.00	275581	ng/L	98	50 - 150	---	---	1.0	03/16/2017 08:07	03/16/2017 19:47	3655078
FBH	SS-PFDA-13C2	537	N/A	---		102.9580	100	ng/L	103	70 - 130	---	---	1.0	03/16/2017 08:07	03/16/2017 19:47	3655078
FBH	SS-PFHxA-13C2	537	N/A	---		51.0374	50.0	ng/L	102	70 - 130	---	---	1.0	03/16/2017 08:07	03/16/2017 19:47	3655078
FBH	Perfluorooctane sulfonate (PFOS)	537	2.0	---		190.6890	200	ng/L	95	70 - 130	---	---	1.0	03/16/2017 08:07	03/16/2017 19:47	3655078
CCM	IS-PFOA-13C2	537	N/A	---		974783.00	974783	ng/L	100	50 - 150	---	---	1.0	03/10/2017 16:12	03/16/2017 23:42	3655107
CCM	IS-PFOS-13C4	537	N/A	---		246960.00	246960	ng/L	100	50 - 150	---	---	1.0	03/10/2017 16:12	03/16/2017 23:42	3655107
CCM	SS-PFDA-13C2	537	N/A	---		100.4730	100	ng/L	100	70 - 130	---	---	1.0	03/10/2017 16:12	03/16/2017 23:42	3655107
CCM	SS-PFHxA-13C2	537	N/A	---		50.3267	50.0	ng/L	101	70 - 130	---	---	1.0	03/10/2017 16:12	03/16/2017 23:42	3655107
CCM	Perfluorooctane sulfonate (PFOS)	537	2.0	---		99.1503	100	ng/L	99	70 - 130	---	---	1.0	03/10/2017 16:12	03/16/2017 23:42	3655107
FS	IS-PFOA-13C2	537	N/A	PEF32469/Well B		1006590.00	974783	ng/L	103	50 - 150	---	---	0.98	03/16/2017 08:07	03/17/2017 01:06	3651834
FS	IS-PFOS-13C4	537	N/A	PEF32469/Well B		254779.00	246960	ng/L	103	50 - 150	---	---	0.98	03/16/2017 08:07	03/17/2017 01:06	3651834
FS	SS-PFDA-13C2	537	N/A	PEF32469/Well B		97.6513	100	ng/L	100	70 - 130	---	---	0.98	03/16/2017 08:07	03/17/2017 01:06	3651834
FS	SS-PFHxA-13C2	537	N/A	PEF32469/Well B		50.4447	50.0	ng/L	103	70 - 130	---	---	0.98	03/16/2017 08:07	03/17/2017 01:06	3651834
FS	Perfluorooctane sulfonate (PFOS)	537	2.0	PEF32469/Well B	<	2.0		ng/L	---	---	---	---	0.98	03/16/2017 08:07	03/17/2017 01:06	3651834
FD	IS-PFOA-13C2	537	N/A	PEF32469/Well B		962179.00	974783	ng/L	99	50 - 150	---	---	0.95	03/16/2017 08:07	03/17/2017 01:23	3655076
FD	IS-PFOS-13C4	537	N/A	PEF32469/Well B		244268.00	246960	ng/L	99	50 - 150	---	---	0.95	03/16/2017 08:07	03/17/2017 01:23	3655076
FD	SS-PFDA-13C2	537	N/A	PEF32469/Well B		94.7912	100	ng/L	100	70 - 130	---	---	0.95	03/16/2017 08:07	03/17/2017 01:23	3655076
FD	SS-PFHxA-13C2	537	N/A	PEF32469/Well B		48.6099	50.0	ng/L	102	70 - 130	---	---	0.95	03/16/2017 08:07	03/17/2017 01:23	3655076
FD	Perfluorooctane sulfonate (PFOS)	537	2.0	PEF32469/Well B	<	2.0		ng/L	---	---	---	---	0.95	03/16/2017 08:07	03/17/2017 01:23	3655076
CCH	IS-PFOA-13C2	537	N/A	---		984523.00	984523	ng/L	100	50 - 150	---	---	1.0	03/10/2017 16:12	03/17/2017 02:30	3655108
CCH	IS-PFOS-13C4	537	N/A	---		249012.00	249012	ng/L	100	50 - 150	---	---	1.0	03/10/2017 16:12	03/17/2017 02:30	3655108
CCH	SS-PFDA-13C2	537	N/A	---		100.9080	100	ng/L	101	70 - 130	---	---	1.0	03/10/2017 16:12	03/17/2017 02:30	3655108
CCH	SS-PFHxA-13C2	537	N/A	---		50.6128	50.0	ng/L	101	70 - 130	---	---	1.0	03/10/2017 16:12	03/17/2017 02:30	3655108
CCH	Perfluorooctane sulfonate (PFOS)	537	2.0	---		200.1050	200	ng/L	100	70 - 130	---	---	1.0	03/10/2017 16:12	03/17/2017 02:30	3655108

Sample Type Key

Type (Abbr.)	Sample Type	Type (Abbr.)	Sample Type
CCH	Continuing Calibration High		
CCL	Continuing Calibration Low		
CCM	Continuing Calibration Mid		
FD	Field Duplicate		
FS	Field Sample		
FBH	Fortified Blank High		
LRB	Laboratory Reagent Blank		

END OF REPORT