

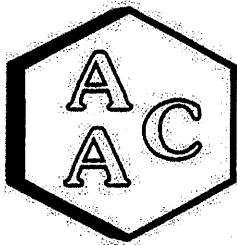
Volatile Organic Compound Analysis Results for Samples Collected in Nuiqsut, Alaska

Sample Location: Nuiqsut Ambient Air Quality Monitoring Station

Date Sample Collected: 5/16/2022

Analysis Conducted by: Atmospheric Analysis & Consulting, Inc.

Analysis Method: EPA Method TO-12/PAMS Protocol by GC/MS/FID



Atmospheric Analysis & Consulting, Inc.

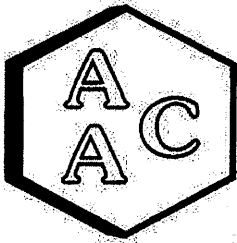
Laboratory Analysis Report

CLIENT : SLR International Corporation
PROJECT NO : 221081
MATRIX : AIR
UNITS : ppb (v/v)

DATE RECEIVED : 05/19/2022
DATE REPORTED : 05/23/2022

HYDROCARBONS (C2-C12) SPECIATED

<i>Client ID</i>	NUI			Sample Reporting Limit (SRL) (MRL _x DFs)	Method Reporting Limit (MRL)
<i>AAC ID</i>	221081-31386				
<i>Date Sampled</i>	05/16/2022				
<i>Date Analyzed</i>	05/19/2022				
<i>Can Dilution Factor</i>	1.83				
	Result	Qualifier	Analysis DF		
Ethylene	<SRL	U	1	0.91	0.50
Acetylene	<SRL	U	1	0.91	0.50
Ethane	<SRL	U	1	0.91	0.50
Propylene	<SRL	U	1	0.61	0.33
Propane	4.90		1	0.61	0.33
Isobutane	<SRL	U	1	0.46	0.25
1-Butene	<SRL	U	1	0.46	0.25
n-Butane	<SRL	U	1	0.46	0.25
trans-2-Butene	<SRL	U	1	0.46	0.25
cis-2-Butene	<SRL	U	1	0.46	0.25
Isopentane	<SRL	U	1	0.37	0.20
1-Pentene	<SRL	U	1	0.37	0.20
n-Pentane	<SRL	U	1	0.37	0.20
Isoprene	<SRL	U	1	0.37	0.20
trans-2-Pentene	<SRL	U	1	0.37	0.20
cis-2-Pentene	<SRL	U	1	0.37	0.20
2,2-Dimethylbutane	<SRL	U	1	0.30	0.17
Cyclopentane	<SRL	U	1	0.37	0.20
2,3-Dimethylbutane	<SRL	U	1	0.30	0.17
2-Methylpentane	<SRL	U	1	0.30	0.17
3-Methylpentane	<SRL	U	1	0.30	0.17
1-Hexene	<SRL	U	1	0.30	0.17
n-Hexane	<SRL	U	1	0.30	0.17
Methylcyclopentane	<SRL	U	1	0.30	0.17
2,4-Dimethylpentane	<SRL	U	1	0.26	0.14
Benzene	<SRL	U	1	0.30	0.17
Cyclohexane	<SRL	U	1	0.30	0.17
2-Methylhexane	<SRL	U	1	0.26	0.14
2,3-Dimethylpentane	<SRL	U	1	0.26	0.14
3-Methylhexane	<SRL	U	1	0.26	0.14
2,2,4-Trimethylpentane	<SRL	U	1	0.23	0.13
n-Heptane	<SRL	U	1	0.26	0.14
Methylcyclohexane	<SRL	U	1	0.26	0.14
2,3,4-Trimethylpentane	<SRL	U	1	0.23	0.13



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Laboratory Analysis Report

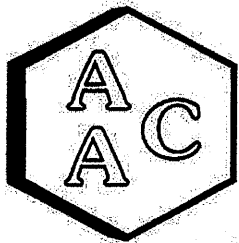
CLIENT : SLR International Corporation
PROJECT NO : 221081
MATRIX : AIR
UNITS : ppb (v/v)

DATE RECEIVED : 05/19/2022
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HYDROCARBONS (C2-C12) SPECIATED

<i>Client ID</i>	NUI			Sample Reporting Limit (SRL) (MRLxDFs)	Method Reporting Limit (MRL)
<i>AAC ID</i>	221081-31386				
<i>Date Sampled</i>	05/16/2022				
<i>Date Analyzed</i>	05/19/2022				
<i>Can Dilution Factor</i>	1.83				
	Result	Qualifier	Analysis DF		
Toluene	<SRL	U	1	0.26	0.14
2-Methylheptane	<SRL	U	1	0.23	0.13
3-Methylheptane	<SRL	U	1	0.23	0.13
n-Octane	<SRL	U	1	0.23	0.13
Ethylbenzene	<SRL	U	1	0.23	0.13
m/p-Xylenes	<SRL	U	1	0.23	0.13
Styrene	<SRL	U	1	0.23	0.13
o-Xylene	<SRL	U	1	0.23	0.13
Nonane	<SRL	U	1	0.20	0.11
Isopropylbenzene	<SRL	U	1	0.20	0.11
n-Propylbenzene	<SRL	U	1	0.20	0.11
m-Ethyltoluene	<SRL	U	1	0.20	0.11
p-Ethyltoluene	<SRL	U	1	0.20	0.11
1,3,5-Trimethylbenzene	<SRL	U	1	0.20	0.11
o-Ethyltoluene	<SRL	U	1	0.20	0.11
1,2,4-Trimethylbenzene	<SRL	U	1	0.20	0.11
n-Decane	<SRL	U	1	0.18	0.10
1,2,3-Trimethylbenzene	<SRL	U	1	0.20	0.11
m-Diethylbenzene	<SRL	U	1	0.18	0.10
p-Diethylbenzene	<SRL	U	1	0.18	0.10
n-Undecane	<SRL	U	1	0.17	0.09
n-Dodecane	<SRL	U	1	0.15	0.08

U - Compound was analyzed for, but was not detected at or above the SRL.



Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report PAMS Calibration Verification Analysis

Initial Calibration Date : 02/11/2022
Standard ID : MS1-042722-01

Instrument ID : MS01
Analysis Date : 05/16/2022
Analyst : RB

Continuing Calibration Verification

Propane	xRF	Daily RF	RPD*
	698	698	0.05

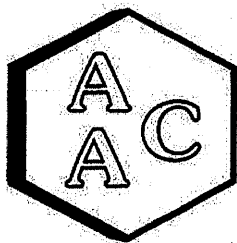
* Must be <10%

Laboratory Control Spike (LCS) / Laboratory Control Spike Duplicate (LCSD)

Propane	Sample Conc. (ppbC)	Spike Added (ppbC)	Recovery (ppbC)		% Recovery**		RPD***
			LCS	LCSD	LCS	LCSD	
	0.00	4.24	4.24	4.33	100.0	102.1	2.10

** Must be 80-120%

*** Must be <25%



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Quality Control/Quality Assurance Report

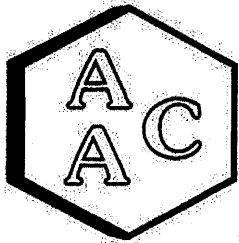
PAMS Method Blank Analysis

Matrix : Air
Units : ppbC

Instrument ID : MS01
Analysis Date : 05/16/2022
Analyst : RB

Analyte	Result	PQL
Ethylene	<PQL	1.0
Acetylene	<PQL	1.0
Ethane	<PQL	1.0
Propylene	<PQL	1.0
Propane	<PQL	1.0
Isobutane	<PQL	1.0
1-Butene	<PQL	1.0
n-Butane	<PQL	1.0
trans-2-Butene	<PQL	1.0
cis-2-Butene	<PQL	1.0
Isopentane	<PQL	1.0
1-Pentene	<PQL	1.0
n-Pentane	<PQL	1.0
Isoprene	<PQL	1.0
trans-2-Pentene	<PQL	1.0
cis-2-Pentene	<PQL	1.0
2,2-Dimethylbutane	<PQL	1.0
Cyclopentane	<PQL	1.0
2,3-Dimethylbutane	<PQL	1.0
2-Methylpentane	<PQL	1.0
3-Methylpentane	<PQL	1.0
1-Hexene	<PQL	1.0
n-Hexane	<PQL	1.0
Methylcyclopentane	<PQL	1.0
2,4-Dimethylpentane	<PQL	1.0
Benzene	<PQL	1.0
Cyclohexane	<PQL	1.0
2-Methylhexane	<PQL	1.0
2,3-Dimethylpentane	<PQL	1.0
3-Methylhexane	<PQL	1.0
2,2,4-Trimethylpentane	<PQL	1.0
n-Heptane	<PQL	1.0
Methylcyclohexane	<PQL	1.0
2,3,4-Trimethylpentane	<PQL	1.0

Analyte	Result	PQL
Toluene	<PQL	1.0
2-Methylheptane	<PQL	1.0
3-Methylheptane	<PQL	1.0
n-Octane	<PQL	1.0
Ethylbenzene	<PQL	1.0
m/p-Xylenes	<PQL	1.0
Styrene	<PQL	1.0
o-Xylene	<PQL	1.0
Nonane	<PQL	1.0
Isopropylbenzene	<PQL	1.0
n-Propylbenzene	<PQL	1.0
m-Ethyltoluene	<PQL	1.0
p-Ethyltoluene	<PQL	1.0
1,3,5-Trimethylbenzene	<PQL	1.0
o-Ethyltoluene	<PQL	1.0
1,2,4-Trimethylbenzene	<PQL	1.0
n-Decane	<PQL	1.0
1,2,3-Trimethylbenzene	<PQL	1.0
m-Diethylbenzene	<PQL	1.0
p-Diethylbenzene	<PQL	1.0
n-Undecane	<PQL	1.0
n-Dodecane	<PQL	1.0
TNMHC (ppbC)	<PQL	20



Atmospheric Analysis & Consulting, Inc

Quality Control/Quality Assurance Report PAMS Duplicate Analysis

AAC ID : 220938-30804 x5
 Matrix : Air
 Units : ppbC

Instrument ID : MS01
 Analysis Date : 05/16/2022
 Analyst : RB

Analyte	Sample Analysis	Sample Duplicate	RPD
Ethylene	5050	5150	2.0
Acetylene	104	110	5.6
Ethane	133000	136000	2.2
Propylene	354	370	4.4
Propane	11300	11800	4.3
Isobutane	971	1020	4.9
1-Butene	<PQL	<PQL	NA
n-Butane	1290	1350	4.5
trans-2-Butene	<PQL	<PQL	NA
cis-2-Butene	<PQL	<PQL	NA
Isopentane	188	197	4.7
1-Pentene	<PQL	<PQL	NA
n-Pentane	139	141	1.4
Isoprene	<PQL	<PQL	NA
trans-2-Pentene	<PQL	<PQL	NA
cis-2-Pentene	<PQL	<PQL	NA
2,2-Dimethylbutane	8.86	9.30	4.8
Cyclopentane	<PQL	<PQL	NA
2,3-Dimethylbutane	<PQL	<PQL	NA
2-Methylpentane	16.5	17.1	3.6
3-Methylpentane	8.95	8.95	0.0
1-Hexene	<PQL	<PQL	NA
n-Hexane	19.6	20.1	2.5
Methylcyclopentane	<PQL	<PQL	NA
2,4-Dimethylpentane	<PQL	<PQL	NA
Benzene	19.1	19.0	0.5
Cyclohexane	<PQL	<PQL	NA
2-Methylhexane	<PQL	<PQL	NA
2,3-Dimethylpentane	<PQL	<PQL	NA
3-Methylhexane	<PQL	<PQL	NA
2,2,4-Trimethylpentane	<PQL	<PQL	NA
n-Heptane	<PQL	<PQL	NA
Methylcyclohexane	<PQL	<PQL	NA
2,3,4-Trimethylpentane	<PQL	<PQL	NA
Toluene	23.3	24.3	4.2
2-Methylheptane	<PQL	<PQL	NA
3-Methylheptane	<PQL	<PQL	NA
n-Octane	<PQL	<PQL	NA
Ethylbenzene	<PQL	<PQL	NA
m/p-Xylenes	<PQL	<PQL	NA
Styrene	<PQL	<PQL	NA
o-Xylene	<PQL	<PQL	NA
Nonane	<PQL	<PQL	NA
Isopropylbenzene	<PQL	<PQL	NA
n-Propylbenzene	<PQL	<PQL	NA
m-Ethyltoluene	<PQL	<PQL	NA
p-Ethyltoluene	<PQL	<PQL	NA

Analyte	Sample Analysis	Sample Duplicate	RPD
1,3,5-Trimethylbenzene	<PQL	<PQL	NA
o-Ethyltoluene	<PQL	<PQL	NA
1,2,4-Trimethylbenzene	<PQL	<PQL	NA
n-Decane	<PQL	<PQL	NA
1,2,3-Trimethylbenzene	<PQL	<PQL	NA
m-Diethylbenzene	<PQL	<PQL	NA
p-Diethylbenzene	<PQL	<PQL	NA
n-Undecane	<PQL	<PQL	NA
n-Dodecane	<PQL	<PQL	NA
Total PAMS (ppbC)	152000	156000	2.6
TNMHC (ppbC)	153000	157000	2.6