

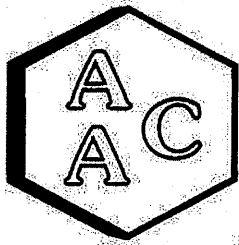
Volatile Organic Compound Analysis Results for Samples Collected in Nuiqsut, Alaska

Sample Location: Nuiqsut Ambient Air Quality Monitoring Station

Date Sample Collected: 4/25/2022

Analysis Conducted by: Atmospheric Analysis & Consulting, Inc.

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



Atmospheric Analysis & Consulting, Inc

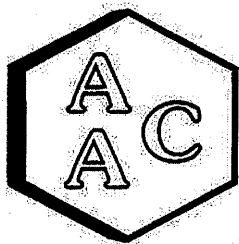
Laboratory Analysis Report

CLIENT : SLR International Corporation
PROJECT NO : 220907
MATRIX : AIR
UNITS : ppb (v/v)

DATE RECEIVED : 04/28/2022
DATE REPORTED : 04/29/2022

HYDROCARBONS (C2-C12) SPECIATED

| Client ID | NUI | | | Sample Reporting Limit (SRL) (MRLxDFs) | NUI DUP | | | Sample Reporting Limit (SRL) (MRLxDFs) | Method Reporting Limit (MRL) |
|------------------------|------------|--------|-----------|--|-------------|--------------|--------|--|------------------------------|
| | AAC ID | Result | Qualifier | | Analysis DF | 220907-30662 | Result | | |
| Date Sampled | 04/25/2022 | | | | 04/25/2022 | | | | |
| Date Analyzed | 04/28/2022 | | | | 04/28/2022 | | | | |
| Can Dilution Factor | 1.61 | | | | 1.60 | | | | |
| Ethylene | <SRL | U | 1 | 0.81 | <SRL | U | 1 | 0.80 | 0.50 |
| Acetylene | <SRL | U | 1 | 0.81 | <SRL | U | 1 | 0.80 | 0.50 |
| Ethane | 2.09 | | 1 | 0.81 | 2.22 | | 1 | 0.80 | 0.50 |
| Propylene | <SRL | U | 1 | 1.07 | <SRL | U | 1 | 1.07 | 0.67 |
| Propane | 0.66 | | 1 | 0.54 | 0.71 | | 1 | 0.53 | 0.33 |
| Isobutane | <SRL | U | 1 | 0.40 | <SRL | U | 1 | 0.40 | 0.25 |
| 1-Butene | <SRL | U | 1 | 0.40 | <SRL | U | 1 | 0.40 | 0.25 |
| n-Butane | <SRL | U | 1 | 0.40 | <SRL | U | 1 | 0.40 | 0.25 |
| trans-2-Butene | <SRL | U | 1 | 0.40 | <SRL | U | 1 | 0.40 | 0.25 |
| cis-2-Butene | <SRL | U | 1 | 0.40 | <SRL | U | 1 | 0.40 | 0.25 |
| Isopentane | <SRL | U | 1 | 0.32 | <SRL | U | 1 | 0.32 | 0.20 |
| 1-Pentene | <SRL | U | 1 | 0.32 | <SRL | U | 1 | 0.32 | 0.20 |
| n-Pentane | 0.35 | | 1 | 0.32 | <SRL | U | 1 | 0.32 | 0.20 |
| Isoprene | <SRL | U | 1 | 0.32 | <SRL | U | 1 | 0.32 | 0.20 |
| trans-2-Pentene | <SRL | U | 1 | 0.32 | <SRL | U | 1 | 0.32 | 0.20 |
| cis-2-Pentene | <SRL | U | 1 | 0.32 | <SRL | U | 1 | 0.32 | 0.20 |
| 2,2-Dimethylbutane | <SRL | U | 1 | 0.27 | <SRL | U | 1 | 0.27 | 0.17 |
| Cyclopentane | <SRL | U | 1 | 0.32 | <SRL | U | 1 | 0.32 | 0.20 |
| 2,3-Dimethylbutane | <SRL | U | 1 | 0.27 | <SRL | U | 1 | 0.27 | 0.17 |
| 2-Methylpentane | <SRL | U | 1 | 0.27 | <SRL | U | 1 | 0.27 | 0.17 |
| 3-Methylpentane | <SRL | U | 1 | 0.27 | <SRL | U | 1 | 0.27 | 0.17 |
| 1-Hexene | <SRL | U | 1 | 0.27 | <SRL | U | 1 | 0.27 | 0.17 |
| n-Hexane | <SRL | U | 1 | 0.27 | <SRL | U | 1 | 0.27 | 0.17 |
| Methylcyclopentane | <SRL | U | 1 | 0.27 | <SRL | U | 1 | 0.27 | 0.17 |
| 2,4-Dimethylpentane | <SRL | U | 1 | 0.23 | <SRL | U | 1 | 0.23 | 0.14 |
| Benzene | <SRL | U | 1 | 0.27 | <SRL | U | 1 | 0.27 | 0.17 |
| Cyclohexane | <SRL | U | 1 | 0.27 | <SRL | U | 1 | 0.27 | 0.17 |
| 2-Methylhexane | <SRL | U | 1 | 0.23 | <SRL | U | 1 | 0.23 | 0.14 |
| 2,3-Dimethylpentane | <SRL | U | 1 | 0.23 | <SRL | U | 1 | 0.23 | 0.14 |
| 3-Methylhexane | <SRL | U | 1 | 0.23 | <SRL | U | 1 | 0.23 | 0.14 |
| 2,2,4-Trimethylpentane | <SRL | U | 1 | 0.20 | <SRL | U | 1 | 0.20 | 0.13 |
| n-Heptane | <SRL | U | 1 | 0.23 | <SRL | U | 1 | 0.23 | 0.14 |
| Methylcyclohexane | <SRL | U | 1 | 0.23 | <SRL | U | 1 | 0.23 | 0.14 |
| 2,3,4-Trimethylpentane | <SRL | U | 1 | 0.20 | <SRL | U | 1 | 0.20 | 0.13 |



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Laboratory Analysis Report

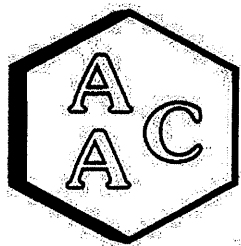
CLIENT : SLR International Corporation
PROJECT NO : 220907
MATRIX : AIR
UNITS : ppb (v/v)

DATE RECEIVED : 04/28/2022
DATE REPORTED : 04/29/2022

HYDROCARBONS (C2-C12) SPECIATED

| Client ID AAC ID | NUI | | | Sample Reporting Limit (SRL) (MRLxDFs) | NUI DUP | | | Sample Reporting Limit (SRL) (MRLxDFs) | Method Reporting Limit (MRL) |
|------------------------|--------------|-----------|-------------|---|--------------|-----------|-------------|---|------------------------------|
| | 220907-30662 | | | | 220907-30663 | | | | |
| Date Sampled | 04/25/2022 | | | 04/25/2022 | | | | | |
| Date Analyzed | 04/28/2022 | | | 04/28/2022 | | | | | |
| Can Dilution Factor | 1.61 | | | 1.60 | | | | | |
| | Result | Qualifier | Analysis DF | | Result | Qualifier | Analysis DF | | |
| Toluene | <SRL | U | 1 | 0.23 | <SRL | U | 1 | 0.23 | 0.14 |
| 2-Methylheptane | <SRL | U | 1 | 0.20 | <SRL | U | 1 | 0.20 | 0.13 |
| 3-Methylheptane | <SRL | U | 1 | 0.20 | <SRL | U | 1 | 0.20 | 0.13 |
| n-Octane | <SRL | U | 1 | 0.20 | <SRL | U | 1 | 0.20 | 0.13 |
| Ethylbenzene | <SRL | U | 1 | 0.20 | <SRL | U | 1 | 0.20 | 0.13 |
| m/p-Xylenes | <SRL | U | 1 | 0.20 | <SRL | U | 1 | 0.20 | 0.13 |
| Styrene | <SRL | U | 1 | 0.20 | <SRL | U | 1 | 0.20 | 0.13 |
| o-Xylene | <SRL | U | 1 | 0.20 | <SRL | U | 1 | 0.20 | 0.13 |
| Nonane | <SRL | U | 1 | 0.18 | <SRL | U | 1 | 0.18 | 0.11 |
| Isopropylbenzene | <SRL | U | 1 | 0.18 | <SRL | U | 1 | 0.18 | 0.11 |
| n-Propylbenzene | <SRL | U | 1 | 0.18 | <SRL | U | 1 | 0.18 | 0.11 |
| m-Ethyltoluene | <SRL | U | 1 | 0.18 | <SRL | U | 1 | 0.18 | 0.11 |
| p-Ethyltoluene | <SRL | U | 1 | 0.18 | <SRL | U | 1 | 0.18 | 0.11 |
| 1,3,5-Trimethylbenzene | <SRL | U | 1 | 0.18 | <SRL | U | 1 | 0.18 | 0.11 |
| o-Ethyltoluene | <SRL | U | 1 | 0.18 | <SRL | U | 1 | 0.18 | 0.11 |
| 1,2,4-Trimethylbenzene | <SRL | U | 1 | 0.18 | <SRL | U | 1 | 0.18 | 0.11 |
| n-Decane | <SRL | U | 1 | 0.16 | <SRL | U | 1 | 0.16 | 0.10 |
| 1,2,3-Trimethylbenzene | <SRL | U | 1 | 0.18 | <SRL | U | 1 | 0.18 | 0.11 |
| m-Diethylbenzene | <SRL | U | 1 | 0.16 | <SRL | U | 1 | 0.16 | 0.10 |
| p-Diethylbenzene | <SRL | U | 1 | 0.16 | <SRL | U | 1 | 0.16 | 0.10 |
| n-Undecane | <SRL | U | 1 | 0.15 | <SRL | U | 1 | 0.15 | 0.09 |
| n-Dodecane | <SRL | U | 1 | 0.13 | <SRL | U | 1 | 0.13 | 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 : MS1-020922-01

Instrument ID : MS01
Analysis Date : 04/26/2022
Analyst : RB

Continuing Calibration Verification

| Propane | xRF | Daily RF | RPD* |
|---------|-----|----------|------|
| | 698 | 723 | 3.53 |

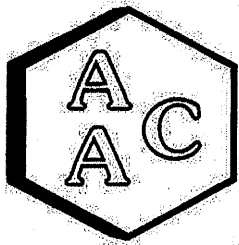
* Must be <10%

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 | 4.39 | 4.50 | 103.5 | 106.1 | 2.47 |

** Must be 80-120%

*** Must be <25%



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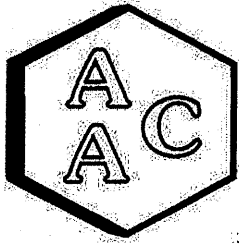
Quality Control/Quality Assurance Report PAMS Method Blank Analysis

Matrix : Air
Units : ppbC

Instrument ID : MS01
Analysis Date : 04/26/2022
Analyst : RB

| Analyte | Result | PQL |
|------------------------|--------|-----|
| Ethylene | <PQL | 1.0 |
| Acetylene | <PQL | 1.0 |
| Ethane | <PQL | 1.0 |
| Propylene | <PQL | 2.0 |
| 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 : 220907-30662
 Matrix : Air
 Units : ppbC

Instrument ID : MS01
 Analysis Date : 04/26/2022
 Analyst : RB

| Analyte | Sample Analysis | Sample Duplicate | RPD |
|------------------------|-----------------|------------------|-----|
| Ethylene | <PQL | <PQL | NA |
| Acetylene | <PQL | <PQL | NA |
| Ethane | 4.17 | 4.09 | 1.9 |
| Propylene | <PQL | <PQL | NA |
| Propane | 1.98 | 1.90 | 4.1 |
| Isobutane | <PQL | <PQL | NA |
| 1-Butene | <PQL | <PQL | NA |
| n-Butane | <PQL | <PQL | NA |
| trans-2-Butene | <PQL | <PQL | NA |
| cis-2-Butene | <PQL | <PQL | NA |
| Isopentane | <PQL | <PQL | NA |
| 1-Pentene | <PQL | <PQL | NA |
| n-Pentane * | 1.77 | 1.31 | 30 |
| Isoprene | <PQL | <PQL | NA |
| trans-2-Pentene | <PQL | <PQL | NA |
| cis-2-Pentene | <PQL | <PQL | NA |
| 2,2-Dimethylbutane | <PQL | <PQL | NA |
| Cyclopentane | <PQL | <PQL | NA |
| 2,3-Dimethylbutane | <PQL | <PQL | NA |
| 2-Methylpentane | <PQL | <PQL | NA |
| 3-Methylpentane | <PQL | <PQL | NA |
| 1-Hexene | <PQL | <PQL | NA |
| n-Hexane | <PQL | <PQL | NA |
| Methylcyclopentane | <PQL | <PQL | NA |
| 2,4-Dimethylpentane | <PQL | <PQL | NA |
| Benzene | <PQL | <PQL | NA |
| 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 | <PQL | <PQL | NA |
| 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) | 7.93 | 7.30 | 8.3 |
| TNMHC (ppbC) | 48.2 | 40.4 | 18 |

* - Duplicate result is estimated/below the PQL; shown for duplication purposes only.