



## ANALYTICAL REPORT

Lab Number:	L2259785
Client:	NewFields 300 Ledgewood Place Suite 205 Rockland, MA 02370
ATTN:	Eric Litman
Phone:	(781) 681-5040
Project Name:	DOH JP5
Project Number:	Not Specified
Report Date:	02/28/23

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Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

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508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L2259785-01	JP-5 NEAT FUEL	OIL	Not Specified	08/02/22 10:44	10/26/22
L2259785-02	JP-5 NEAT FUEL F1	OIL	Not Specified	08/02/22 10:44	10/26/22
L2259785-03	JP-5 NEAT FUEL F2	OIL	Not Specified	08/02/22 10:44	10/26/22
L2259785-04	JP-5 NEAT FUEL - AIR	SOIL_VAPOR	Not Specified	08/02/22 10:44	10/26/22

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

**HOLD POLICY** - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

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**Project Name:** DOH JP5  
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### Case Narrative (continued)

#### Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

#### Volatile Organics

L2259785-01D: The sample has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

L2259785-01D2: The sample was re-analyzed on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

The WG1744686-6 Method Blank, associated with L2259785-01D and -01D2, has concentrations below the reporting limits and "J" qualified. Associated field sample results are "B" qualified if the concentrations are less than 10x the concentrations in the blank.

#### Petroleum Hydrocarbon Quantitation

The WG1742591-1F1 Method Blank, associated with L2259785-02F1, has concentrations below the reporting limits and "J" qualified. Associated field sample results are "B" qualified if the concentrations are less than 10x the concentrations in the blank.

The WG1742592-1F2 Method Blank, associated with L2259785-03F2, has concentrations below the reporting limits and "J" qualified. Associated field sample results are "B" qualified if the concentrations are less than 10x the concentrations in the blank.

#### Volatile Organics in Air

Per client request, a headspace analysis was conducted on a product sample - prepared by weighing 1.03 g of the L2259785-01 sample into a 40 mL VOA vial. Then 10 mL of the VOA vial headspace was injected into a 1 L canister and pressurized to 30 psia.

**Project Name:** DOH JP5  
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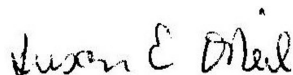
**Lab Number:** L2259785  
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**Case Narrative (continued)**

L2259785-04D: The sample has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Susan O'Neil

Title: Technical Director/Representative

Date: 02/28/23

# ORGANICS

# VOLATILES

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

**SAMPLE RESULTS**

Lab ID: L2259785-01 D2  
 Client ID: JP-5 NEAT FUEL  
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44  
 Date Received: 10/26/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil  
 Analytical Method: 1,8260D(M)  
 Analytical Date: 02/16/23 00:23  
 Analyst: RAY  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PIANO Volatile Organics by GC/MS - Mansfield Lab</b>						
Decane (C10)	15900		mg/kg	1780	272.	200
Undecane	41800		mg/kg	1780	630.	200
Dodecane (C12)	40600		mg/kg	4460	783.	200
Tridecane	27300		mg/kg	4460	1160	200

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	99		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	98		70-130



**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

**SAMPLE RESULTS**

Lab ID: L2259785-01 D  
 Client ID: JP-5 NEAT FUEL  
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44  
 Date Received: 10/26/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil  
 Analytical Method: 1,8260D(M)  
 Analytical Date: 02/15/23 07:39  
 Analyst: RAY  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PIANO Volatile Organics by GC/MS - Mansfield Lab</b>						
Isopentane	15.9	J	mg/kg	89.2	33.2	10
1-Pentene	ND		mg/kg	89.2	27.6	10
2-Methyl-1-Butene	ND		mg/kg	89.2	29.3	10
Pentane	ND		mg/kg	89.2	27.8	10
trans-2-Pentene	ND		mg/kg	89.2	31.4	10
cis-2-Pentene	ND		mg/kg	89.2	23.4	10
Tertiary Butanol	2.18	J	mg/kg	1120	361.	10
Cyclopentane	ND		mg/kg	89.2	23.1	10
2,3-Dimethylbutane	ND		mg/kg	89.2	36.8	10
2-Methylpentane	7.22	J	mg/kg	89.2	28.7	10
Methyl tert butyl ether	ND		mg/kg	89.2	27.8	10
3-Methylheptane	124		mg/kg	89.2	26.8	10
1-Hexene	ND		mg/kg	89.2	25.6	10
n-Hexane	16.3	J	mg/kg	89.2	26.0	10
Isopropyl Ether	ND		mg/kg	89.2	24.5	10
Ethyl-Tert-Butyl-Ether	ND		mg/kg	89.2	23.3	10
2,2-Dimethylpentane	ND		mg/kg	89.2	23.1	10
Methylcyclopentane	13.7	J	mg/kg	89.2	27.1	10
2,4-Dimethylpentane	ND		mg/kg	89.2	23.4	10
1,2-Dichloroethane	ND		mg/kg	89.2	27.0	10
Cyclohexane	21.8	J	mg/kg	89.2	25.7	10
2-Methylhexane	14.7	J	mg/kg	89.2	20.8	10
Benzene	22.6	J	mg/kg	89.2	19.3	10
2,3-Dimethylpentane	ND		mg/kg	89.2	22.6	10
Thiophene	ND		mg/kg	89.2	23.2	10
3-Methylhexane	22.7	J	mg/kg	89.2	23.5	10
Tertiary-Amyl Methyl Ether	ND		mg/kg	89.2	23.6	10
1-Heptene/1,2-DMCP (trans)	25.3	J	mg/kg	178	54.7	10

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

**SAMPLE RESULTS**

Lab ID: L2259785-01 D  
 Client ID: JP-5 NEAT FUEL  
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44  
 Date Received: 10/26/22  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PIANO Volatile Organics by GC/MS - Mansfield Lab</b>						
Isooctane	ND		mg/kg	89.2	20.8	10
Heptane	71.7	J	mg/kg	89.2	24.5	10
Methylcyclohexane	183		mg/kg	89.2	19.0	10
2,5-Dimethylhexane	ND		mg/kg	89.2	21.3	10
2,4-Dimethylhexane	14.0	J	mg/kg	89.2	21.0	10
2,2,3-Trimethylpentane	ND		mg/kg	89.2	22.3	10
2,3,4-Trimethylpentane	ND		mg/kg	89.2	20.4	10
2,3,3-Trimethylpentane	ND		mg/kg	89.2	19.5	10
2,3-Dimethylhexane	18.2	J	mg/kg	89.2	21.6	10
2-Methylheptane	136		mg/kg	89.2	20.6	10
3-Methylpentane	ND		mg/kg	89.2	17.3	10
3-Ethylhexane	ND		mg/kg	89.2	22.8	10
Toluene	187		mg/kg	89.2	12.9	10
2-Methylthiophene	ND		mg/kg	89.2	13.3	10
3-Methylthiophene	ND		mg/kg	89.2	13.7	10
1-Octene	ND		mg/kg	223	13.6	10
Octane	552		mg/kg	89.2	18.9	10
1,2-Dibromoethane	ND		mg/kg	89.2	14.3	10
Ethylbenzene	279		mg/kg	89.2	9.63	10
2-Ethylthiophene	ND		mg/kg	89.2	9.77	10
p/m-Xylene	1350		mg/kg	178	25.1	10
1-Nonene	ND		mg/kg	223	9.24	10
Nonane (C9)	2960		mg/kg	89.2	19.5	10
Styrene	ND		mg/kg	89.2	12.4	10
o-Xylene	739		mg/kg	89.2	13.7	10
Isopropylbenzene	171		mg/kg	89.2	14.9	10
n-Propylbenzene	497		mg/kg	89.2	16.8	10
1-Methyl-3-Ethylbenzene	1200		mg/kg	89.2	14.3	10
1-Methyl-4-Ethylbenzene	617		mg/kg	89.2	16.2	10
1,3,5-Trimethylbenzene	1060		mg/kg	89.2	17.0	10
1-Decene	ND		mg/kg	89.2	12.4	10
1-Methyl-2-Ethylbenzene	800		mg/kg	89.2	18.2	10
Decane (C10)	10000	E	mg/kg	89.2	13.6	10
1,2,4-Trimethylbenzene	3640		mg/kg	89.2	19.5	10
sec-Butylbenzene	349		mg/kg	89.2	18.0	10
1-Methyl-3-Isopropylbenzene	498		mg/kg	89.2	16.8	10
1-Methyl-4-Isopropylbenzene	432		mg/kg	89.2	20.4	10

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

**SAMPLE RESULTS**

Lab ID: L2259785-01 D  
 Client ID: JP-5 NEAT FUEL  
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44  
 Date Received: 10/26/22  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PIANO Volatile Organics by GC/MS - Mansfield Lab</b>						
1-Methyl-2-Isopropylbenzene	100		mg/kg	89.2	24.5	10
Indane	303		mg/kg	89.2	20.6	10
1-Methyl-3-N-Propylbenzene	1540		mg/kg	89.2	19.7	10
1-Methyl-4-N-Propylbenzene	720		mg/kg	89.2	20.9	10
n-Butylbenzene	675		mg/kg	89.2	22.3	10
1,2-Dimethyl-4-Ethylbenzene	1210		mg/kg	89.2	21.7	10
1,2-Diethylbenzene	274		mg/kg	89.2	20.6	10
1-Methyl-2-N-Propylbenzene	1200		mg/kg	89.2	18.2	10
1,4-Dimethyl-2-Ethylbenzene	1180		mg/kg	89.2	19.9	10
Undecane	20900	E	mg/kg	89.2	31.5	10
1,3-Dimethyl-4-Ethylbenzene	1420		mg/kg	89.2	19.1	10
1,3-Dimethyl-5-Ethylbenzene	1650		mg/kg	89.2	21.7	10
1,3-Dimethyl-2-Ethylbenzene	287		mg/kg	89.2	21.2	10
1,2-Dimethyl-3-Ethylbenzene	804		mg/kg	89.2	19.4	10
1,2,4,5-Tetramethylbenzene	1070		mg/kg	89.2	20.2	10
N-Pentylbenzene	402		mg/kg	89.2	17.6	10
Dodecane (C12)	21800	E	mg/kg	223	39.2	10
Naphthalene	2890		mg/kg	89.2	37.2	10
Benzo thiophene	ND		mg/kg	89.2	47.1	10
MMT	ND		mg/kg	223	57.3	10
Tridecane	21800	E	mg/kg	223	57.8	10
2-Methylnaphthalene	5440		mg/kg	223	58.9	10
1-Methylnaphthalene	3590		mg/kg	223	65.4	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	115		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	89		70-130

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8260D(M)  
Analytical Date: 02/14/23 05:00  
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1744686-6					
Isopentane	ND		mg/kg	10.0	3.73
1-Pentene	ND		mg/kg	10.0	3.09
2-Methyl-1-Butene	ND		mg/kg	10.0	3.28
Pentane	ND		mg/kg	10.0	3.11
trans-2-Pentene	ND		mg/kg	10.0	3.52
cis-2-Pentene	ND		mg/kg	10.0	2.62
Tertiary Butanol	ND		mg/kg	125	40.5
Cyclopentane	ND		mg/kg	10.0	2.59
2,3-Dimethylbutane	ND		mg/kg	10.0	4.13
2-Methylpentane	ND		mg/kg	10.0	3.22
Methyl tert butyl ether	ND		mg/kg	10.0	3.11
3-Methylheptane	ND		mg/kg	10.0	3.00
1-Hexene	ND		mg/kg	10.0	2.87
n-Hexane	ND		mg/kg	10.0	2.91
Isopropyl Ether	ND		mg/kg	10.0	2.74
Ethyl-Tert-Butyl-Ether	ND		mg/kg	10.0	2.61
2,2-Dimethylpentane	ND		mg/kg	10.0	2.59
Methylcyclopentane	ND		mg/kg	10.0	3.04
2,4-Dimethylpentane	ND		mg/kg	10.0	2.62
1,2-Dichloroethane	ND		mg/kg	10.0	3.03
Cyclohexane	ND		mg/kg	10.0	2.89
2-Methylhexane	ND		mg/kg	10.0	2.33
Benzene	1.84	J	mg/kg	10.0	2.16
2,3-Dimethylpentane	ND		mg/kg	10.0	2.53
Thiophene	ND		mg/kg	10.0	2.60
3-Methylhexane	ND		mg/kg	10.0	2.63
Tertiary-Amyl Methyl Ether	ND		mg/kg	10.0	2.65
1-Heptene/1,2-DMCP (trans)	ND		mg/kg	20.0	6.13
Isooctane	ND		mg/kg	10.0	2.34

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8260D(M)  
Analytical Date: 02/14/23 05:00  
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1744686-6					
Heptane	ND		mg/kg	10.0	2.74
Methylcyclohexane	ND		mg/kg	10.0	2.13
2,5-Dimethylhexane	ND		mg/kg	10.0	2.39
2,4-Dimethylhexane	ND		mg/kg	10.0	2.36
2,2,3-Trimethylpentane	ND		mg/kg	10.0	2.50
2,3,4-Trimethylpentane	ND		mg/kg	10.0	2.29
2,3,3-Trimethylpentane	ND		mg/kg	10.0	2.19
2,3-Dimethylhexane	ND		mg/kg	10.0	2.42
2-Methylheptane	ND		mg/kg	10.0	2.32
3-Methylpentane	ND		mg/kg	10.0	1.94
3-Ethylhexane	ND		mg/kg	10.0	2.55
Toluene	0.465	J	mg/kg	10.0	1.45
2-Methylthiophene	ND		mg/kg	10.0	1.49
3-Methylthiophene	ND		mg/kg	10.0	1.54
1-Octene	ND		mg/kg	25.0	1.53
Octane	ND		mg/kg	10.0	2.12
1,2-Dibromoethane	ND		mg/kg	10.0	1.60
Ethylbenzene	ND		mg/kg	10.0	1.08
2-Ethylthiophene	ND		mg/kg	10.0	1.09
p/m-Xylene	0.365	J	mg/kg	20.0	2.81
1-Nonene	ND		mg/kg	25.0	1.04
Nonane (C9)	ND		mg/kg	10.0	2.19
Styrene	ND		mg/kg	10.0	1.39
o-Xylene	0.205	J	mg/kg	10.0	1.54
Isopropylbenzene	ND		mg/kg	10.0	1.67
n-Propylbenzene	ND		mg/kg	10.0	1.89
1-Methyl-3-Ethylbenzene	ND		mg/kg	10.0	1.60
1-Methyl-4-Ethylbenzene	ND		mg/kg	10.0	1.82
1,3,5-Trimethylbenzene	ND		mg/kg	10.0	1.90

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8260D(M)  
Analytical Date: 02/14/23 05:00  
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1744686-6					
1-Decene	ND		mg/kg	10.0	1.39
1-Methyl-2-Ethylbenzene	ND		mg/kg	10.0	2.04
Decane (C10)	ND		mg/kg	10.0	1.53
1,2,4-Trimethylbenzene	ND		mg/kg	10.0	2.19
sec-Butylbenzene	ND		mg/kg	10.0	2.02
1-Methyl-3-Isopropylbenzene	ND		mg/kg	10.0	1.88
1-Methyl-4-Isopropylbenzene	ND		mg/kg	10.0	2.29
1-Methyl-2-Isopropylbenzene	ND		mg/kg	10.0	2.74
Indane	ND		mg/kg	10.0	2.31
1-Methyl-3-N-Propylbenzene	ND		mg/kg	10.0	2.20
1-Methyl-4-N-Propylbenzene	ND		mg/kg	10.0	2.35
n-Butylbenzene	ND		mg/kg	10.0	2.50
1,2-Dimethyl-4-Ethylbenzene	ND		mg/kg	10.0	2.43
1,2-Diethylbenzene	ND		mg/kg	10.0	2.31
1-Methyl-2-N-Propylbenzene	ND		mg/kg	10.0	2.04
1,4-Dimethyl-2-Ethylbenzene	ND		mg/kg	10.0	2.23
Undecane	ND		mg/kg	10.0	3.53
1,3-Dimethyl-4-Ethylbenzene	ND		mg/kg	10.0	2.14
1,3-Dimethyl-5-Ethylbenzene	ND		mg/kg	10.0	2.43
1,3-Dimethyl-2-Ethylbenzene	ND		mg/kg	10.0	2.37
1,2-Dimethyl-3-Ethylbenzene	ND		mg/kg	10.0	2.18
1,2,4,5-Tetramethylbenzene	ND		mg/kg	10.0	2.26
N-Pentylbenzene	ND		mg/kg	10.0	1.98
Dodecane (C12)	ND		mg/kg	25.0	4.39
Naphthalene	0.565	J	mg/kg	10.0	4.17
Benzothiophene	ND		mg/kg	10.0	5.28
MMT	ND		mg/kg	25.0	6.42
Tridecane	ND		mg/kg	25.0	6.48
2-Methylnaphthalene	0.710	J	mg/kg	25.0	6.60

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8260D(M)  
Analytical Date: 02/14/23 05:00  
Analyst: RAY

Parameter	Result	Qualifier	Units	RL	MDL
PIANO Volatile Organics by GC/MS - Mansfield Lab for sample(s): 01 Batch: WG1744686-6					
1-Methylnaphthalene	0.420	J	mg/kg	25.0	7.33

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	102		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	96		70-130

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01 Batch: WG1744686-3 WG1744686-4								
1-Pentene	74		77		50-130	4		30
Pentane	77		83		50-130	8		30
Tertiary Butanol	94		94		50-130	0		30
Cyclopentane	82		87		50-130	6		30
2-Methylpentane	87		90		50-130	3		30
Methyl tert butyl ether	86		91		50-130	6		30
3-Methylheptane	91		96		50-130	5		30
1-Hexene	92		98		50-130	6		30
n-Hexane	77		81		50-130	5		30
Isopropyl Ether	92		94		50-130	2		30
Ethyl-Tert-Butyl-Ether	89		92		50-130	3		30
Methylcyclopentane	91		94		50-130	3		30
2,4-Dimethylpentane	90		95		50-130	5		30
Cyclohexane	94		99		50-130	5		30
2-Methylhexane	92		96		50-130	4		30
Benzene	92		95		50-130	3		30
2,3-Dimethylpentane	92		96		50-130	4		30
3-Methylhexane	82		88		50-130	7		30
Tertiary-Amyl Methyl Ether	84		85		50-130	1		30
Isooctane	91		94		50-130	3		30
Heptane	94		97		50-130	3		30
Methylcyclohexane	94		98		50-130	4		30
2-Methylheptane	94		96		50-130	2		30



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01 Batch: WG1744686-3 WG1744686-4								
3-Methylpentane	91		95		50-130	4		30
Toluene	96		99		50-130	3		30
Octane	93		96		50-130	3		30
Ethylbenzene	93		95		50-130	2		30
p/m-Xylene	95		97		50-130	2		30
Nonane (C9)	84		86		50-130	2		30
o-Xylene	95		97		50-130	2		30
Isopropylbenzene	96		98		50-130	2		30
n-Propylbenzene	96		97		50-130	1		30
1-Methyl-3-Ethylbenzene	94		95		50-130	1		30
1-Methyl-4-Ethylbenzene	97		99		50-130	2		30
1,3,5-Trimethylbenzene	94		96		50-130	2		30
1-Decene	73		76		50-130	4		30
1-Methyl-2-Ethylbenzene	96		97		50-130	1		30
Decane (C10)	86		88		50-130	2		30
1,2,4-Trimethylbenzene	90		91		50-130	1		30
sec-Butylbenzene	97		99		50-130	2		30
1-Methyl-4-N-Propylbenzene	88		90		50-130	2		30
n-Butylbenzene	90		90		50-130	0		30
1,2-Diethylbenzene	89		91		50-130	2		30
Undecane	83		86		50-130	4		30
N-Pentylbenzene	89		91		50-130	2		30
Dodecane (C12)	100		105		50-130	5		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01 Batch: WG1744686-3 WG1744686-4								

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
Dibromofluoromethane	99		100		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	98		98		70-130

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1744686-7 QC Sample: L2259785-01 Client ID: JP-5						
NEAT FUEL						
Isopentane	15.9J	17.6J	mg/kg	NC		30
1-Pentene	ND	ND	mg/kg	NC		30
2-Methyl-1-Butene	ND	ND	mg/kg	NC		30
Pentane	ND	ND	mg/kg	NC		30
trans-2-Pentene	ND	ND	mg/kg	NC		30
cis-2-Pentene	ND	ND	mg/kg	NC		30
Tertiary Butanol	2.18J	ND	mg/kg	NC		30
Cyclopentane	ND	ND	mg/kg	NC		30
2,3-Dimethylbutane	ND	ND	mg/kg	NC		30
2-Methylpentane	7.22J	7.36J	mg/kg	NC		30
Methyl tert butyl ether	ND	ND	mg/kg	NC		30
3-Methylheptane	124	126	mg/kg	2		30
1-Hexene	ND	ND	mg/kg	NC		30
n-Hexane	16.3J	13.6J	mg/kg	NC		30
Isopropyl Ether	ND	ND	mg/kg	NC		30
Ethyl-Tert-Butyl-Ether	ND	ND	mg/kg	NC		30
2,2-Dimethylpentane	ND	ND	mg/kg	NC		30
Methylcyclopentane	13.7J	15.6J	mg/kg	NC		30
2,4-Dimethylpentane	ND	ND	mg/kg	NC		30
1,2-Dichloroethane	ND	ND	mg/kg	NC		30
Cyclohexane	21.8J	20.8J	mg/kg	NC		30

## Lab Duplicate Analysis

### Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1744686-7 QC Sample: L2259785-01 Client ID: JP-5						
NEAT FUEL						
2-Methylhexane	14.7J	14.4J	mg/kg	NC		30
Benzene	22.6J	23.0J	mg/kg	NC		30
2,3-Dimethylpentane	ND	ND	mg/kg	NC		30
Thiophene	ND	ND	mg/kg	NC		30
3-Methylhexane	22.7J	21.7J	mg/kg	NC		30
Tertiary-Amyl Methyl Ether	ND	ND	mg/kg	NC		30
1-Heptene/1,2-DMCP (trans)	25.3J	ND	mg/kg	NC		30
Isooctane	ND	ND	mg/kg	NC		30
Heptane	71.7J	68.3J	mg/kg	NC		30
Methylcyclohexane	183	180	mg/kg	2		30
2,5-Dimethylhexane	ND	7.86J	mg/kg	NC		30
2,4-Dimethylhexane	14.0J	11.2J	mg/kg	NC		30
2,2,3-Trimethylpentane	ND	ND	mg/kg	NC		30
2,3,4-Trimethylpentane	ND	ND	mg/kg	NC		30
2,3,3-Trimethylpentane	ND	ND	mg/kg	NC		30
2,3-Dimethylhexane	18.2J	19.0J	mg/kg	NC		30
2-Methylheptane	136	139	mg/kg	2		30
3-Methylpentane	ND	ND	mg/kg	NC		30
3-Ethylhexane	ND	ND	mg/kg	NC		30
Toluene	187	184	mg/kg	2		30
2-Methylthiophene	ND	ND	mg/kg	NC		30

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1744686-7 QC Sample: L2259785-01 Client ID: JP-5						
NEAT FUEL						
3-Methylthiophene	ND	ND	mg/kg	NC		30
1-Octene	ND	ND	mg/kg	NC		30
Octane	552	572	mg/kg	4		30
1,2-Dibromoethane	ND	ND	mg/kg	NC		30
Ethylbenzene	279	283	mg/kg	1		30
2-Ethylthiophene	ND	ND	mg/kg	NC		30
p/m-Xylene	1350	1390	mg/kg	3		30
1-Nonene	ND	ND	mg/kg	NC		30
Nonane (C9)	2960	3010	mg/kg	2		30
Styrene	ND	ND	mg/kg	NC		30
o-Xylene	739	746	mg/kg	1		30
Isopropylbenzene	171	179	mg/kg	5		30
n-Propylbenzene	497	505	mg/kg	2		30
1-Methyl-3-Ethylbenzene	1200	1250	mg/kg	4		30
1-Methyl-4-Ethylbenzene	617	641	mg/kg	4		30
1,3,5-Trimethylbenzene	1060	1110	mg/kg	5		30
1-Decene	ND	ND	mg/kg	NC		30
1-Methyl-2-Ethylbenzene	800	828	mg/kg	3		30
Decane (C10)	10000E	10200E	mg/kg	2		30
1,2,4-Trimethylbenzene	3640	3760	mg/kg	3		30
sec-Butylbenzene	349	358	mg/kg	3		30

## Lab Duplicate Analysis

### Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1744686-7 QC Sample: L2259785-01 Client ID: JP-5						
NEAT FUEL						
1-Methyl-3-Isopropylbenzene	498	530	mg/kg	6		30
1-Methyl-4-Isopropylbenzene	432	452	mg/kg	5		30
1-Methyl-2-Isopropylbenzene	100	107	mg/kg	7		30
Indane	303	311	mg/kg	3		30
1-Methyl-3-N-Propylbenzene	1540	1600	mg/kg	4		30
1-Methyl-4-N-Propylbenzene	720	745	mg/kg	3		30
n-Butylbenzene	675	704	mg/kg	4		30
1,2-Dimethyl-4-Ethylbenzene	1210	1280	mg/kg	6		30
1,2-Diethylbenzene	274	294	mg/kg	7		30
1-Methyl-2-N-Propylbenzene	1200	1260	mg/kg	5		30
1,4-Dimethyl-2-Ethylbenzene	1180	1230	mg/kg	4		30
Undecane	20900E	21400E	mg/kg	2		30
1,3-Dimethyl-4-Ethylbenzene	1420	1490	mg/kg	5		30
1,3-Dimethyl-5-Ethylbenzene	1650	1740	mg/kg	5		30
1,3-Dimethyl-2-Ethylbenzene	287	299	mg/kg	4		30
1,2-Dimethyl-3-Ethylbenzene	804	838	mg/kg	4		30
1,2,4,5-Tetramethylbenzene	1070	1120	mg/kg	5		30
N-Pentylbenzene	402	429	mg/kg	6		30
Dodecane (C12)	21800E	21900E	mg/kg	0		30
Naphthalene	2890	2860	mg/kg	1		30
Benzothiophene	ND	ND	mg/kg	NC		30

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1744686-7 QC Sample: L2259785-01 Client ID: JP-5 NEAT FUEL						
MMT	ND	ND	mg/kg	NC		30
Tridecane	21800E	20400E	mg/kg	7		30
2-Methylnaphthalene	5440	5360	mg/kg	1		30
1-Methylnaphthalene	3590	3510	mg/kg	2		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	115		117		70-130
Toluene-d8	102		103		70-130
4-Bromofluorobenzene	89		89		70-130

## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
PIANO Volatile Organics by GC/MS - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1744686-7 QC Sample: L2259785-01 Client ID: JP-5						
NEAT FUEL						
Decane (C10)	15900	15400	mg/kg	3		30
Undecane	41800	40200	mg/kg	4		30
Dodecane (C12)	40600	37900	mg/kg	7		30
Tridecane	27300	24200	mg/kg	12		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Dibromofluoromethane	99		98		70-130
Toluene-d8	97		98		70-130
4-Bromofluorobenzene	98		98		70-130



# PETROLEUM HYDROCARBONS

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

**SAMPLE RESULTS**

Lab ID: L2259785-01  
 Client ID: JP-5 NEAT FUEL  
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44  
 Date Received: 10/26/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil  
 Analytical Method: 1,8015D(M)  
 Analytical Date: 02/10/23 23:48  
 Analyst: WR  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A  
 Extraction Date: 02/08/23 08:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Total Petroleum Hydrocarbon by GC-FID - Mansfield Lab</b>						
Total Petroleum Hydrocarbons (C9-C44)	923000		mg/kg	6410	59.2	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	95		50-130
d50-Tetracosane	102		50-130

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

**SAMPLE RESULTS**

Lab ID: L2259785-02 F1  
 Client ID: JP-5 NEAT FUEL F1  
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44  
 Date Received: 10/26/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil  
 Analytical Method: 1,8015D(M)  
 Analytical Date: 02/11/23 19:54  
 Analyst: WR  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A  
 Extraction Date: 02/09/23 08:30  
 Cleanup Method: EPA 3630(M)  
 Cleanup Date: 02/09/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Total Petroleum Hydrocarbon by GC-FID - Mansfield Lab</b>						
Total Petroleum Hydrocarbons (C9-C44)	623000		mg/kg	1280	11.8	1
Surrogate			% Recovery	Qualifier	Acceptance Criteria	
d50-Tetracosane			99		50-130	

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

**SAMPLE RESULTS**

Lab ID: L2259785-03 F2  
 Client ID: JP-5 NEAT FUEL F2  
 Sample Location: Not Specified

Date Collected: 08/02/22 10:44  
 Date Received: 10/26/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Oil  
 Analytical Method: 1,8015D(M)  
 Analytical Date: 02/11/23 15:36  
 Analyst: WR  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3580A  
 Extraction Date: 02/09/23 08:30  
 Cleanup Method: EPA 3630(M)  
 Cleanup Date: 02/09/23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Total Petroleum Hydrocarbon by GC-FID - Mansfield Lab</b>						
Total Petroleum Hydrocarbons (C9-C44)	135000		mg/kg	1280	11.8	1
Surrogate			% Recovery	Qualifier	Acceptance Criteria	
o-Terphenyl			90		50-130	

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8015D(M)  
Analytical Date: 02/10/23 18:03  
Analyst: WR

Extraction Method: EPA 3580A  
Extraction Date: 02/08/23 08:28

Parameter	Result	Qualifier	Units	RL	MDL
Total Petroleum Hydrocarbon by GC-FID - Mansfield Lab for sample(s): 01 Batch: WG1742147-1					
Total Petroleum Hydrocarbons (C9-C44)	ND		mg/kg	6410	59.2

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	94		50-130
d50-Tetracosane	97		50-130

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8015D(M)  
Analytical Date: 02/11/23 06:59  
Analyst: WR

Extraction Method: EPA 3580A  
Extraction Date: 02/09/23 08:30  
Cleanup Method: EPA 3630(M)  
Cleanup Date: 02/09/23

Parameter	Result	Qualifier	Units	RL	MDL
Total Petroleum Hydrocarbon by GC-FID - Mansfield Lab for sample(s): 02 Batch: WG1742591-1 F1					
Total Petroleum Hydrocarbons (C9-C44)	130	J	mg/kg	1280	11.8

Surrogate	%Recovery	Qualifier	Acceptance Criteria
d50-Tetracosane	94		50-130

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8015D(M)  
Analytical Date: 02/11/23 08:25  
Analyst: WR

Extraction Method: EPA 3580A  
Extraction Date: 02/09/23 08:30  
Cleanup Method: EPA 3630(M)  
Cleanup Date: 02/09/23

Parameter	Result	Qualifier	Units	RL	MDL
Total Petroleum Hydrocarbon by GC-FID - Mansfield Lab for sample(s): 03 Batch: WG1742592-1 F2					
Total Petroleum Hydrocarbons (C9-C44)	292	J	mg/kg	1280	11.8

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	85		50-130

## Lab Control Sample Analysis Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Petroleum Hydrocarbon by GC-FID - Mansfield Lab Associated sample(s): 01 Batch: WG1742147-2 WG1742147-3								
Nonane (C9)	88		87		50-130	1		30
Decane (C10)	89		88		50-130	1		30
Dodecane (C12)	91		92		50-130	1		30
Tetradecane (C14)	92		91		50-130	1		30
Hexadecane (C16)	101		101		50-130	0		30
Octadecane (C18)	101		102		50-130	1		30
Nonadecane (C19)	96		97		50-130	1		30
Eicosane (C20)	96		97		50-130	1		30
Docosane (C22)	97		99		50-130	2		30
Tetracosane (C24)	101		103		50-130	2		30
Hexacosane (C26)	100		102		50-130	2		30
Octacosane (C28)	104		105		50-130	1		30
Triacontane (C30)	101		102		50-130	1		30
Hexatriacontane (C36)	94		93		50-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
o-Terphenyl	95		95		50-130
d50-Tetracosane	99		101		50-130



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Petroleum Hydrocarbon by GC-FID - Mansfield Lab Associated sample(s): 02 Batch: WG1742591-2 WG1742591-3								
Nonane (C9)	64		58		50-130	10		30
Decane (C10)	70		64		50-130	9		30
Dodecane (C12)	74		66		50-130	11		30
Tetradecane (C14)	78		73		50-130	7		30
Hexadecane (C16)	88		86		50-130	2		30
Octadecane (C18)	93		92		50-130	1		30
Nonadecane (C19)	94		94		50-130	0		30
Eicosane (C20)	93		94		50-130	1		30
Docosane (C22)	95		95		50-130	0		30
Tetracosane (C24)	97		98		50-130	1		30
Hexacosane (C26)	95		96		50-130	1		30
Octacosane (C28)	94		94		50-130	0		30
Triacosane (C30)	95		95		50-130	0		30
Hexatriacontane (C36)	87		87		50-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
d50-Tetracosane	94		93		50-130



### Lab Duplicate Analysis Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Petroleum Hydrocarbon by GC-FID - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1742147-4 QC Sample: L2259785-01 Client ID: JP-5 NEAT FUEL						

Total Petroleum Hydrocarbons (C9-C44)	923000	910000	mg/kg	1		30
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Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	95		95		50-130
d50-Tetracosane	102		101		50-130

Total Petroleum Hydrocarbon by GC-FID - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1742591-4 QC Sample: L2259785-02 Client ID: JP-5 NEAT FUEL F1						
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Total Petroleum Hydrocarbons (C9-C44)	623000	511000	mg/kg	20		30
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Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
d50-Tetracosane	99		89		50-130

Total Petroleum Hydrocarbon by GC-FID - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG1742592-4 QC Sample: L2259785-03 Client ID: JP-5 NEAT FUEL F2						
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Total Petroleum Hydrocarbons (C9-C44)	135000	136000	mg/kg	1		30
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Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	90		84		50-130

**AIR**

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

### SAMPLE RESULTS

Lab ID: L2259785-04 D  
 Client ID: JP-5 NEAT FUEL - AIR  
 Sample Location:

Date Collected: 08/02/22 10:44  
 Date Received: 10/26/22  
 Field Prep: Not Specified

Sample Depth:  
 Matrix: Soil\_Vapor  
 Analytical Method: 48,TO-15  
 Analytical Date: 02/27/23 04:14  
 Analyst: TJS

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	19.6	51.0	19.3	96.9	252	95.4	J	255.1
Chloromethane	ND	51.0	14.7	ND	105	30.4		255.1
Freon-114	ND	51.0	12.8	ND	356	89.5		255.1
Vinyl chloride	ND	51.0	14.8	ND	130	37.8		255.1
1,3-Butadiene	ND	51.0	15.8	ND	113	35.0		255.1
Bromomethane	ND	51.0	14.0	ND	198	54.4		255.1
Chloroethane	ND	51.0	16.6	ND	135	43.8		255.1
Ethanol	1530	638	444.	2880	1200	837.		255.1
Vinyl bromide	ND	51.0	18.4	ND	223	80.4		255.1
Acetone	ND	255	131.	ND	606	311.		255.1
Trichlorofluoromethane	ND	51.0	20.1	ND	287	113.		255.1
Isopropanol	71.7	128	69.4	176	315	171.	J	255.1
1,1-Dichloroethene	ND	51.0	14.5	ND	202	57.5		255.1
Methylene chloride	ND	128	31.9	ND	445	111.		255.1
3-Chloropropene	ND	51.0	21.9	ND	160	68.5		255.1
Carbon disulfide	ND	51.0	11.9	ND	159	37.1		255.1
Freon-113	ND	51.0	12.9	ND	391	98.9		255.1
trans-1,2-Dichloroethene	ND	51.0	19.3	ND	202	76.5		255.1
1,1-Dichloroethane	ND	51.0	14.5	ND	206	58.7		255.1
Methyl tert butyl ether	ND	51.0	11.5	ND	184	41.5		255.1
2-Butanone	ND	128.	25.2	ND	378	74.3		255.1
cis-1,2-Dichloroethene	ND	51.0	15.2	ND	202	60.3		255.1
Chloroform	ND	51.0	14.1	ND	249	68.9		255.1



**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

### SAMPLE RESULTS

Lab ID: L2259785-04 D  
 Client ID: JP-5 NEAT FUEL - AIR  
 Sample Location:

Date Collected: 08/02/22 10:44  
 Date Received: 10/26/22  
 Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	51.0	20.1	ND	206	81.4		255.1
n-Hexane	3300	51.0	19.0	11600	180	67.0		255.1
1,1,1-Trichloroethane	ND	51.0	15.7	ND	278	85.7		255.1
Benzene	995	51.0	16.4	3180	163	52.4		255.1
Carbon tetrachloride	ND	51.0	17.5	ND	321	110.		255.1
Cyclohexane	3300	51.0	18.6	11400	176	64.0		255.1
1,2-Dichloropropane	ND	51.0	16.1	ND	236	74.4		255.1
Bromodichloromethane	ND	51.0	17.6	ND	342	118.		255.1
1,4-Dioxane	ND	51.0	13.7	ND	184	49.4		255.1
Trichloroethene	ND	51.0	14.0	ND	274	75.2		255.1
2,2,4-Trimethylpentane	ND	51.0	17.6	ND	238	82.2		255.1
Heptane	5440	51.0	21.1	22300	209	86.5		255.1
cis-1,3-Dichloropropene	ND	51.0	17.2	ND	232	78.1		255.1
4-Methyl-2-pentanone	ND	128.	48.5	ND	525	199.		255.1
trans-1,3-Dichloropropene	ND	51.0	20.0	ND	232	90.8		255.1
1,1,2-Trichloroethane	ND	51.0	14.8	ND	278	80.7		255.1
Toluene	8110	51.0	22.1	30600	192	83.3		255.1
2-Hexanone	ND	51.0	23.3	ND	209	95.5		255.1
Dibromochloromethane	ND	51.0	14.4	ND	434	123.		255.1
1,2-Dibromoethane	ND	51.0	13.9	ND	392	107.		255.1
Tetrachloroethene	ND	51.0	16.0	ND	346	108.		255.1
Chlorobenzene	ND	51.0	13.2	ND	235	60.8		255.1
Ethylbenzene	4900	51.0	14.7	21300	222	63.9		255.1
p/m-Xylene	16400	102	31.9	71200	443	139.		255.1
Bromoform	ND	51.0	15.2	ND	527	157.		255.1
Styrene	ND	51.0	15.2	ND	217	64.7		255.1



**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

### SAMPLE RESULTS

Lab ID: L2259785-04 D  
 Client ID: JP-5 NEAT FUEL - AIR  
 Sample Location:

Date Collected: 08/02/22 10:44  
 Date Received: 10/26/22  
 Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
1,1,2,2-Tetrachloroethane	ND	51.0	13.3	ND	350	91.3		255.1
o-Xylene	8550	51.0	15.8	37100	222	68.6		255.1
4-Ethyltoluene	2190	51.0	14.1	10800	251	69.3		255.1
1,3,5-Trimethylbenzene	3930	51.0	15.3	19300	251	75.2		255.1
1,2,4-Trimethylbenzene	10700	51.0	14.7	52600	251	72.3		255.1
1,3-Dichlorobenzene	ND	51.0	19.8	ND	307	119.		255.1
1,4-Dichlorobenzene	ND	51.0	21.1	ND	307	127.		255.1
1,2-Dichlorobenzene	ND	51.0	15.8	ND	307	95.0		255.1
1,2,4-Trichlorobenzene	ND	51.0	25.5	ND	379	189.		255.1
Naphthalene	1160	51.0	19.9	6080	267	104.		255.1
Hexachlorobutadiene	ND	51.0	15.5	ND	544	165.		255.1



**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

### SAMPLE RESULTS

Lab ID: L2259785-04 D  
 Client ID: JP-5 NEAT FUEL - AIR  
 Sample Location:

Date Collected: 08/02/22 10:44  
 Date Received: 10/26/22  
 Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	77		70-130
Bromofluorobenzene	128		70-130
Toluene-d8	103		70-130

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	70		60-140
Bromochloromethane	63		60-140
chlorobenzene-d5	68		60-140

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

### Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15  
Analytical Date: 02/26/23 15:20

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 04 Batch: WG1748790-4								
Dichlorodifluoromethane	ND	0.200	0.076	ND	0.989	0.374		1
Chloromethane	ND	0.200	0.058	ND	0.413	0.119		1
Freon-114	ND	0.200	0.050	ND	1.40	0.352		1
Vinyl chloride	ND	0.200	0.058	ND	0.511	0.149		1
1,3-Butadiene	ND	0.200	0.062	ND	0.442	0.137		1
Butane	ND	0.200	0.080	ND	0.475	0.190		1
Acetaldehyde	ND	2.50	1.73	ND	4.50	3.12		1
Bromomethane	ND	0.200	0.055	ND	0.777	0.212		1
Chloroethane	ND	0.200	0.065	ND	0.528	0.171		1
Ethanol	ND	2.50	1.74	ND	4.71	3.28		1
Vinyl bromide	ND	0.200	0.072	ND	0.874	0.316		1
Acrolein	ND	0.500	0.149	ND	1.15	0.342		1
Acetone	ND	1.00	0.515	ND	2.38	1.22		1
Trichlorofluoromethane	ND	0.200	0.079	ND	1.12	0.442		1
Isopropanol	ND	0.500	0.272	ND	1.23	0.669		1
Pentane	ND	0.200	0.113	ND	0.590	0.333		1
1,1-Dichloroethene	ND	0.200	0.057	ND	0.793	0.225		1
tert-Butyl Alcohol	ND	0.500	0.132	ND	1.52	0.400		1
Methylene chloride	ND	1.00	0.125	ND	1.74	0.434		1
3-Chloropropene	ND	0.200	0.086	ND	0.626	0.269		1
Carbon disulfide	ND	0.200	0.047	ND	0.623	0.145		1
Freon-113	ND	0.200	0.051	ND	1.53	0.388		1
trans-1,2-Dichloroethene	ND	0.200	0.076	ND	0.793	0.299		1
1,1-Dichloroethane	ND	0.200	0.057	ND	0.809	0.230		1
Methyl tert butyl ether	ND	0.200	0.045	ND	0.721	0.162		1



**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

### Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15  
Analytical Date: 02/26/23 15:20

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 04 Batch: WG1748790-4								
2-Butanone	ND	0.500	0.099	ND	1.47	0.292		1
cis-1,2-Dichloroethene	ND	0.200	0.060	ND	0.793	0.236		1
Chloroform	ND	0.200	0.055	ND	0.977	0.270		1
1,2-Dichloroethane	ND	0.200	0.079	ND	0.809	0.319		1
n-Hexane	ND	0.200	0.074	ND	0.705	0.262		1
1,1,1-Trichloroethane	ND	0.200	0.061	ND	1.09	0.335		1
Benzene	0.068	0.200	0.064	0.217	0.639	0.205	J	1
Thiophene	ND	0.200	0.052	ND	0.688	0.179		1
Carbon tetrachloride	ND	0.200	0.069	ND	1.26	0.432		1
Cyclohexane	ND	0.200	0.073	ND	0.688	0.251		1
1,2-Dichloropropane	ND	0.200	0.063	ND	0.924	0.292		1
Bromodichloromethane	ND	0.200	0.069	ND	1.34	0.462		1
1,4-Dioxane	ND	0.200	0.054	ND	0.721	0.194		1
Trichloroethene	ND	0.200	0.055	ND	1.07	0.295		1
2,2,4-Trimethylpentane	ND	0.200	0.069	ND	0.934	0.323		1
Heptane	ND	0.200	0.083	ND	0.820	0.339		1
cis-1,3-Dichloropropene	ND	0.200	0.067	ND	0.908	0.306		1
4-Methyl-2-pentanone	ND	0.500	0.190	ND	2.05	0.779		1
trans-1,3-Dichloropropene	ND	0.200	0.078	ND	0.908	0.355		1
1,1,2-Trichloroethane	ND	0.200	0.058	ND	1.09	0.318		1
Toluene	ND	0.200	0.087	ND	0.754	0.327		1
2-Methylthiophene	ND	0.200	0.062	ND	0.803	0.250		1
2-Hexanone	ND	0.200	0.091	ND	0.820	0.374		1
3-Methylthiophene	ND	0.200	0.063	ND	0.803	0.255		1
Dibromochloromethane	ND	0.200	0.057	ND	1.70	0.482		1



**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

### Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15  
Analytical Date: 02/26/23 15:20

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 04 Batch: WG1748790-4								
1,2-Dibromoethane	ND	0.200	0.054	ND	1.54	0.418		1
Octane	ND	0.200	0.068	ND	0.934	0.316		1
Tetrachloroethene	ND	0.200	0.063	ND	1.36	0.425		1
Chlorobenzene	ND	0.200	0.052	ND	0.921	0.238		1
Ethylbenzene	ND	0.200	0.058	ND	0.869	0.250		1
2-Ethylthiophene	ND	0.200	0.061	ND	0.918	0.281		1
p/m-Xylene	ND	0.400	0.125	ND	1.74	0.543		1
Bromoform	ND	0.200	0.060	ND	2.07	0.616		1
Styrene	ND	0.200	0.060	ND	0.852	0.254		1
1,1,2,2-Tetrachloroethane	ND	0.200	0.052	ND	1.37	0.357		1
o-Xylene	ND	0.200	0.062	ND	0.869	0.270		1
Nonane	ND	0.200	0.074	ND	1.05	0.387		1
2-Chlorotoluene	ND	0.200	0.076	ND	1.04	0.394		1
4-Ethyltoluene	ND	0.200	0.055	ND	0.983	0.272		1
1,3,5-Trimethylbenzene	ND	0.200	0.060	ND	0.983	0.295		1
1,2,4-Trimethylbenzene	ND	0.200	0.058	ND	0.983	0.284		1
Decane	ND	0.200	0.070	ND	1.16	0.406		1
1,3-Dichlorobenzene	ND	0.200	0.078	ND	1.20	0.467		1
1,4-Dichlorobenzene	ND	0.200	0.083	ND	1.20	0.497		1
1,2,3-Trimethylbenzene	ND	0.200	0.058	ND	0.983	0.283		1
1,2-Dichlorobenzene	ND	0.200	0.062	ND	1.20	0.372		1
Indane	ND	0.200	0.071	ND	0.967	0.344		1
Indene	ND	0.200	0.071	ND	0.951	0.338		1
Undecane	ND	0.200	0.071	ND	1.28	0.453		1
1,2,4,5-Tetramethylbenzene	ND	0.200	0.135	ND	1.10	0.741		1



**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

### Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15  
Analytical Date: 02/26/23 15:20

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 04 Batch: WG1748790-4								
Dodecane	ND	0.200	0.089	ND	1.39	0.621		1
1,2,4-Trichlorobenzene	ND	0.200	0.100	ND	1.48	0.742		1
Naphthalene	ND	0.200	0.078	ND	1.05	0.409		1
Benzothiophene	ND	0.500	0.273	ND	2.74	1.50		1
Hexachlorobutadiene	ND	0.200	0.061	ND	2.13	0.647		1
2-Methylnaphthalene	ND	1.00	0.259	ND	5.82	1.51		1
1-Methylnaphthalene	ND	1.00	0.264	ND	5.82	1.54		1

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 48,TO-15  
 Analytical Date: 02/26/23 15:20

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab for sample(s): 04 Batch: WG1748790-4								

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	84		70-130
Bromofluorobenzene	89		70-130
Toluene-d8	91		70-130



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics in Air - Mansfield Lab Associated sample(s): 04 Batch: WG1748790-6 WG1748790-7								
Dichlorodifluoromethane	84		91		70-130	8		25
Chloromethane	87		91		70-130	4		25
Freon-114	89		94		70-130	5		25
Vinyl chloride	88		90		70-130	2		25
1,3-Butadiene	96		101		70-130	5		25
Butane	73		75		70-130	3		25
Bromomethane	91		92		70-130	1		25
Chloroethane	83		83		70-130	0		25
Ethanol	79		94		70-130	17		25
Vinyl bromide	79		80		70-130	1		25
Acrolein	87		87		60-113	0		25
Acetone	73		74		70-130	1		25
Trichlorofluoromethane	84		85		70-130	1		25
Isopropanol	76		76		70-130	0		25
Pentane	80		93		70-130	15		25
1,1-Dichloroethene	84		84		70-130	0		25
tert-Butyl Alcohol	83		84		70-130	1		25
Methylene chloride	102		102		70-130	0		25
3-Chloropropene	86		86		70-130	0		25
Carbon disulfide	86		86		70-130	0		25
Freon-113	89		89		70-130	0		25
trans-1,2-Dichloroethene	79		79		70-130	0		25
1,1-Dichloroethane	82		81		70-130	1		25

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics in Air - Mansfield Lab Associated sample(s): 04 Batch: WG1748790-6 WG1748790-7								
Methyl tert butyl ether	85		86		70-130	1		25
2-Butanone	84		84		70-130	0		25
cis-1,2-Dichloroethene	86		86		70-130	0		25
Chloroform	99		98		70-130	1		25
1,2-Dichloroethane	76		77		70-130	1		25
n-Hexane	100		100		70-130	0		25
1,1,1-Trichloroethane	92		93		70-130	1		25
Benzene	98		99		70-130	1		25
Carbon tetrachloride	99		100		70-130	1		25
Cyclohexane	101		101		70-130	0		25
1,2-Dichloropropane	92		92		70-130	0		25
Bromodichloromethane	104		105		70-130	1		25
1,4-Dioxane	102		102		70-130	0		25
Trichloroethene	101		101		70-130	0		25
2,2,4-Trimethylpentane	98		98		70-130	0		25
Heptane	97		97		70-130	0		25
cis-1,3-Dichloropropene	109		110		70-130	1		25
4-Methyl-2-pentanone	96		97		70-130	1		25
trans-1,3-Dichloropropene	93		94		70-130	1		25
1,1,2-Trichloroethane	98		98		70-130	0		25
Toluene	93		92		70-130	1		25
2-Hexanone	92		93		70-130	1		25
Dibromochloromethane	100		100		70-130	0		25

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics in Air - Mansfield Lab Associated sample(s): 04 Batch: WG1748790-6 WG1748790-7								
1,2-Dibromoethane	97		96		70-130	1		25
Octane	99		99		70-130	0		25
Tetrachloroethene	101		101		70-130	0		25
Chlorobenzene	100		98		70-130	2		25
Ethylbenzene	100		99		70-130	1		25
p/m-Xylene	100		100		70-130	0		25
Bromoform	102		102		70-130	0		25
Styrene	97		97		70-130	0		25
1,1,2,2-Tetrachloroethane	107		107		70-130	0		25
o-Xylene	102		102		70-130	0		25
Nonane	92		93		70-130	1		25
2-Chlorotoluene	94		94		70-130	0		25
4-Ethyltoluene	93		93		70-130	0		25
1,3,5-Trimethylbenzene	96		97		70-130	1		25
1,2,4-Trimethylbenzene	98		98		70-130	0		25
Decane	96		96		70-130	0		25
1,3-Dichlorobenzene	98		99		70-130	1		25
1,4-Dichlorobenzene	101		100		70-130	1		25
1,2-Dichlorobenzene	96		78		70-130	21		25
Undecane	97		98		70-130	1		25
Dodecane	95		100		70-130	5		25
1,2,4-Trichlorobenzene	93		95		70-130	2		25
Naphthalene	95		97		70-130	2		25

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 04 Batch: WG1748790-6 WG1748790-7								
Hexachlorobutadiene	86		89		70-130	3		25



## Lab Duplicate Analysis

### Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 04 QC Batch ID: WG1748790-5 QC Sample: L2259785-04 Client ID: JP-5 NEAT FUEL - AIR						
Dichlorodifluoromethane	19.6J	19.6J	ppbV	NC		25
Chloromethane	ND	ND	ppbV	NC		25
Freon-114	ND	ND	ppbV	NC		25
Vinyl chloride	ND	ND	ppbV	NC		25
1,3-Butadiene	ND	ND	ppbV	NC		25
Bromomethane	ND	ND	ppbV	NC		25
Chloroethane	ND	ND	ppbV	NC		25
Ethanol	1530	1450	ppbV	5		25
Vinyl bromide	ND	ND	ppbV	NC		25
Acetone	ND	ND	ppbV	NC		25
Trichlorofluoromethane	ND	ND	ppbV	NC		25
Isopropanol	71.7J	76.0J	ppbV	NC		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
Methylene chloride	ND	ND	ppbV	NC		25
3-Chloropropene	ND	ND	ppbV	NC		25
Carbon disulfide	ND	ND	ppbV	NC		25
Freon-113	ND	ND	ppbV	NC		25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC		25
1,1-Dichloroethane	ND	ND	ppbV	NC		25
Methyl tert butyl ether	ND	ND	ppbV	NC		25
2-Butanone	ND	ND	ppbV	NC		25

## Lab Duplicate Analysis

### Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 04 QC Batch ID: WG1748790-5 QC Sample: L2259785-04 Client ID: JP-5 NEAT FUEL - AIR						
cis-1,2-Dichloroethene	ND	ND	ppbV	NC		25
Chloroform	ND	ND	ppbV	NC		25
1,2-Dichloroethane	ND	ND	ppbV	NC		25
n-Hexane	3300	3280	ppbV	1		25
1,1,1-Trichloroethane	ND	ND	ppbV	NC		25
Benzene	995	994	ppbV	0		25
Carbon tetrachloride	ND	ND	ppbV	NC		25
Cyclohexane	3300	3270	ppbV	1		25
1,2-Dichloropropane	ND	ND	ppbV	NC		25
Bromodichloromethane	ND	ND	ppbV	NC		25
1,4-Dioxane	ND	ND	ppbV	NC		25
Trichloroethene	ND	ND	ppbV	NC		25
2,2,4-Trimethylpentane	ND	ND	ppbV	NC		25
Heptane	5440	5340	ppbV	2		25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC		25
4-Methyl-2-pentanone	ND	ND	ppbV	NC		25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC		25
1,1,2-Trichloroethane	ND	ND	ppbV	NC		25
Toluene	8110	7960	ppbV	2		25
2-Hexanone	ND	ND	ppbV	NC		25
Dibromochloromethane	ND	ND	ppbV	NC		25

**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 04 QC Batch ID: WG1748790-5 QC Sample: L2259785-04 Client ID: JP-5 NEAT FUEL - AIR						
1,2-Dibromoethane	ND	ND	ppbV	NC		25
Tetrachloroethene	ND	ND	ppbV	NC		25
Chlorobenzene	ND	ND	ppbV	NC		25
Ethylbenzene	4900	4840	ppbV	1		25
p/m-Xylene	16400	16400	ppbV	0		25
Bromoform	ND	ND	ppbV	NC		25
Styrene	ND	ND	ppbV	NC		25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC		25
o-Xylene	8550	8440	ppbV	1		25
4-Ethyltoluene	2190	2300	ppbV	5		25
1,3,5-Trimethylbenzene	3930	3820	ppbV	3		25
1,2,4-Trimethylbenzene	10700	10400	ppbV	3		25
1,3-Dichlorobenzene	ND	ND	ppbV	NC		25
1,4-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2,4-Trichlorobenzene	ND	ND	ppbV	NC		25
Naphthalene	1160	1130	ppbV	3		25
Hexachlorobutadiene	ND	ND	ppbV	NC		25

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
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## Lab Duplicate Analysis

Batch Quality Control

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 04 QC Batch ID: WG1748790-5 QC Sample: L2259785-04 Client ID: JP-5 NEAT FUEL - AIR						

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	77		75		70-130
Toluene-d8	103		100		70-130
Bromofluorobenzene	128		124		70-130

Project Name: DOH JP5

Project Number:

Serial\_No:02282315:42  
Lab Number: L2259785

Report Date: 02/28/23

### Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controller Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L2259785-04	JP-5 NEAT FUEL - AIR	2496	1.0L Can	02/16/23	-	L2269613-04	-	-29.4	-29.4	-	-	-	-

**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L2269613  
**Report Date:** 02/28/23

### Air Canister Certification Results

Lab ID: L2269613-04  
 Client ID: CAN 2496 SHELF 22  
 Sample Location:

Date Collected: 12/12/22 10:00  
 Date Received: 12/12/22  
 Field Prep: Not Specified

Sample Depth:  
 Matrix: Air  
 Analytical Method: 48,TO-15  
 Analytical Date: 12/13/22 21:44  
 Analyst: TJS

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	0.058	ND	0.707	0.207		1
Propylene	ND	0.500	0.060	ND	0.861	0.103		1
Propane	ND	0.500	0.132	ND	0.902	0.238		1
Dichlorodifluoromethane	ND	0.200	0.058	ND	0.989	0.288		1
Chloromethane	ND	0.200	0.069	ND	0.413	0.142		1
Freon-114	ND	0.200	0.059	ND	1.40	0.413		1
Methanol	ND	5.00	1.84	ND	6.55	2.41		1
Vinyl chloride	ND	0.200	0.063	ND	0.511	0.160		1
1,3-Butadiene	ND	0.200	0.067	ND	0.442	0.148		1
Butane	ND	0.200	0.065	ND	0.475	0.154		1
Bromomethane	ND	0.200	0.077	ND	0.777	0.300		1
Chloroethane	ND	0.200	0.081	ND	0.528	0.212		1
Ethanol	ND	5.00	0.733	ND	9.42	1.38		1
Dichlorofluoromethane	ND	0.200	0.081	ND	0.842	0.340		1
Vinyl bromide	ND	0.200	0.072	ND	0.874	0.313		1
Acrolein	ND	0.500	0.060	ND	1.15	0.137		1
Acetone	ND	1.00	0.689	ND	2.38	1.64		1
Acetonitrile	ND	0.200	0.082	ND	0.336	0.138		1
Trichlorofluoromethane	ND	0.200	0.069	ND	1.12	0.386		1
Isopropanol	ND	0.500	0.478	ND	1.23	1.17		1
Acrylonitrile	ND	0.500	0.056	ND	1.09	0.120		1
Pentane	ND	0.200	0.066	ND	0.590	0.194		1
Ethyl ether	ND	0.200	0.074	ND	0.606	0.223		1
1,1-Dichloroethene	ND	0.200	0.064	ND	0.793	0.255		1



**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L2269613  
**Report Date:** 02/28/23

### Air Canister Certification Results

Lab ID: L2269613-04  
 Client ID: CAN 2496 SHELF 22  
 Sample Location:

Date Collected: 12/12/22 10:00  
 Date Received: 12/12/22  
 Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	0.047	ND	1.52	0.141		1
Methylene chloride	ND	0.500	0.134	ND	1.74	0.466		1
3-Chloropropene	ND	0.200	0.059	ND	0.626	0.183		1
Carbon disulfide	ND	0.200	0.056	ND	0.623	0.174		1
Freon-113	ND	0.200	0.066	ND	1.53	0.503		1
trans-1,2-Dichloroethene	ND	0.200	0.064	ND	0.793	0.255		1
1,1-Dichloroethane	ND	0.200	0.063	ND	0.809	0.254		1
Methyl tert butyl ether	ND	0.200	0.053	ND	0.721	0.189		1
Vinyl acetate	ND	1.00	0.048	ND	3.52	0.169		1
Xylenes, total	ND	0.600	0.045	ND	0.869	0.197		1
2-Butanone	ND	0.500	0.048	ND	1.47	0.142		1
cis-1,2-Dichloroethene	ND	0.200	0.117	ND	0.793	0.464		1
Ethyl Acetate	ND	0.500	0.122	ND	1.80	0.440		1
Chloroform	ND	0.200	0.063	ND	0.977	0.309		1
Tetrahydrofuran	ND	0.500	0.057	ND	1.47	0.168		1
2,2-Dichloropropane	ND	0.200	0.046	ND	0.924	0.212		1
1,2-Dichloroethane	ND	0.200	0.060	ND	0.809	0.244		1
n-Hexane	ND	0.200	0.036	ND	0.705	0.128		1
Diisopropyl ether	ND	0.200	0.062	ND	0.836	0.260		1
tert-Butyl Ethyl Ether	ND	0.200	0.042	ND	0.836	0.176		1
1,2-Dichloroethene (total)	ND	1.00	0.064	ND	1.00	0.255		1
1,1,1-Trichloroethane	ND	0.200	0.050	ND	1.09	0.273		1
1,1-Dichloropropene	ND	0.200	0.046	ND	0.908	0.207		1
Benzene	ND	0.200	0.049	ND	0.639	0.156		1
Carbon tetrachloride	ND	0.200	0.050	ND	1.26	0.314		1
Cyclohexane	ND	0.200	0.037	ND	0.688	0.127		1
tert-Amyl Methyl Ether	ND	0.200	0.048	ND	0.836	0.199		1



**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L2269613  
**Report Date:** 02/28/23

### Air Canister Certification Results

Lab ID: L2269613-04  
 Client ID: CAN 2496 SHELF 22  
 Sample Location:

Date Collected: 12/12/22 10:00  
 Date Received: 12/12/22  
 Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	0.056	ND	1.42	0.400		1
1,2-Dichloropropane	ND	0.200	0.061	ND	0.924	0.282		1
Bromodichloromethane	ND	0.200	0.050	ND	1.34	0.338		1
1,4-Dioxane	ND	0.200	0.081	ND	0.721	0.290		1
Trichloroethene	ND	0.200	0.051	ND	1.07	0.271		1
2,2,4-Trimethylpentane	ND	0.200	0.036	ND	0.934	0.169		1
Methyl Methacrylate	ND	0.500	0.070	ND	2.05	0.285		1
Heptane	ND	0.200	0.047	ND	0.820	0.193		1
cis-1,3-Dichloropropene	ND	0.200	0.041	ND	0.908	0.186		1
4-Methyl-2-pentanone	ND	0.500	0.042	ND	2.05	0.173		1
trans-1,3-Dichloropropene	ND	0.200	0.044	ND	0.908	0.198		1
1,1,2-Trichloroethane	ND	0.200	0.067	ND	1.09	0.366		1
Toluene	ND	0.200	0.052	ND	0.754	0.196		1
1,3-Dichloropropane	ND	0.200	0.106	ND	0.924	0.490		1
2-Hexanone	ND	0.200	0.065	ND	0.820	0.266		1
Dibromochloromethane	ND	0.200	0.061	ND	1.70	0.523		1
1,2-Dibromoethane	ND	0.200	0.056	ND	1.54	0.431		1
Butyl acetate	ND	0.500	0.126	ND	2.38	0.599		1
Octane	ND	0.200	0.045	ND	0.934	0.208		1
Tetrachloroethene	ND	0.200	0.066	ND	1.36	0.444		1
1,1,1,2-Tetrachloroethane	ND	0.200	0.056	ND	1.37	0.385		1
Chlorobenzene	ND	0.200	0.062	ND	0.921	0.287		1
Ethylbenzene	ND	0.200	0.043	ND	0.869	0.188		1
p/m-Xylene	ND	0.400	0.091	ND	1.74	0.395		1
Bromoform	ND	0.200	0.064	ND	2.07	0.663		1
Styrene	ND	0.200	0.043	ND	0.852	0.185		1
1,1,2,2-Tetrachloroethane	ND	0.200	0.061	ND	1.37	0.422		1





**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L2269613  
**Report Date:** 02/28/23

### Air Canister Certification Results

Lab ID: L2269613-04  
 Client ID: CAN 2496 SHELF 22  
 Sample Location:

Date Collected: 12/12/22 10:00  
 Date Received: 12/12/22  
 Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	0.045	ND	0.869	0.197		1
1,2,3-Trichloropropane	ND	0.200	0.061	ND	1.21	0.368		1
Nonane	ND	0.200	0.046	ND	1.05	0.243		1
Isopropylbenzene	ND	0.200	0.049	ND	0.983	0.241		1
Bromobenzene	ND	0.200	0.061	ND	0.793	0.243		1
2-Chlorotoluene	ND	0.200	0.049	ND	1.04	0.252		1
n-Propylbenzene	ND	0.200	0.042	ND	0.983	0.206		1
4-Chlorotoluene	ND	0.200	0.056	ND	1.04	0.290		1
4-Ethyltoluene	ND	0.200	0.037	ND	0.983	0.182		1
1,3,5-Trimethylbenzene	ND	0.200	0.068	ND	0.983	0.332		1
tert-Butylbenzene	ND	0.200	0.042	ND	1.10	0.231		1
1,2,4-Trimethylbenzene	ND	0.200	0.037	ND	0.983	0.181		1
Decane	ND	0.200	0.040	ND	1.16	0.235		1
Benzyl chloride	ND	0.200	0.048	ND	1.04	0.250		1
1,3-Dichlorobenzene	ND	0.200	0.063	ND	1.20	0.377		1
1,4-Dichlorobenzene	ND	0.200	0.064	ND	1.20	0.382		1
sec-Butylbenzene	ND	0.200	0.043	ND	1.10	0.235		1
p-Isopropyltoluene	ND	0.200	0.052	ND	1.10	0.285		1
1,2-Dichlorobenzene	ND	0.200	0.063	ND	1.20	0.378		1
n-Butylbenzene	ND	0.200	0.044	ND	1.10	0.242		1
1,2-Dibromo-3-chloropropane	ND	0.200	0.050	ND	1.93	0.478		1
Undecane	ND	0.200	0.043	ND	1.28	0.273		1
Dodecane	ND	0.200	0.066	ND	1.39	0.458		1
1,2,4-Trichlorobenzene	ND	0.200	0.067	ND	1.48	0.500		1
Naphthalene	ND	0.200	0.089	ND	1.05	0.464		1
1,2,3-Trichlorobenzene	ND	0.200	0.072	ND	1.48	0.531		1
Hexachlorobutadiene	ND	0.200	0.053	ND	2.13	0.564		1



**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L2269613  
**Report Date:** 02/28/23

### Air Canister Certification Results

Lab ID: L2269613-04  
 Client ID: CAN 2496 SHELF 22  
 Sample Location:

Date Collected: 12/12/22 10:00  
 Date Received: 12/12/22  
 Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								

Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds				

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	94		60-140
Bromochloromethane	93		60-140
chlorobenzene-d5	94		60-140

**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L2269613  
**Report Date:** 02/28/23

### Air Canister Certification Results

Lab ID: L2269613-04  
 Client ID: CAN 2496 SHELF 22  
 Sample Location:

Date Collected: 12/12/22 10:00  
 Date Received: 12/12/22  
 Field Prep: Not Specified

Sample Depth:  
 Matrix: Air  
 Analytical Method: 48,TO-15-SIM  
 Analytical Date: 12/13/22 21:44  
 Analyst: TJS

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	0.018	ND	0.989	0.089		1
Chloromethane	ND	0.200	0.024	ND	0.413	0.050		1
Freon-114	ND	0.050	0.007	ND	0.349	0.050		1
Vinyl chloride	ND	0.020	0.007	ND	0.051	0.018		1
1,3-Butadiene	ND	0.020	0.010	ND	0.044	0.022		1
Bromomethane	ND	0.020	0.009	ND	0.078	0.033		1
Chloroethane	ND	0.100	0.014	ND	0.264	0.036		1
Acrolein	ND	0.050	0.039	ND	0.115	0.089		1
Acetone	ND	1.00	0.299	ND	2.38	0.710		1
Trichlorofluoromethane	ND	0.050	0.010	ND	0.281	0.053		1
Acrylonitrile	ND	0.500	0.025	ND	1.09	0.053		1
1,1-Dichloroethene	ND	0.020	0.008	ND	0.079	0.033		1
Methylene chloride	ND	0.500	0.013	ND	1.74	0.046		1
Freon-113	ND	0.050	0.009	ND	0.383	0.067		1
trans-1,2-Dichloroethene	ND	0.020	0.008	ND	0.079	0.030		1
1,1-Dichloroethane	ND	0.020	0.007	ND	0.081	0.030		1
Methyl tert butyl ether	ND	0.200	0.008	ND	0.721	0.030		1
2-Butanone	ND	0.500	0.027	ND	1.47	0.080		1
cis-1,2-Dichloroethene	ND	0.020	0.010	ND	0.079	0.038		1
Chloroform	ND	0.020	0.009	ND	0.098	0.044		1
1,2-Dichloroethane	ND	0.020	0.010	ND	0.081	0.039		1
1,1,1-Trichloroethane	ND	0.020	0.008	ND	0.109	0.045		1
Benzene	ND	0.100	0.005	ND	0.319	0.016		1
Carbon tetrachloride	ND	0.020	0.010	ND	0.126	0.063		1



**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L2269613  
**Report Date:** 02/28/23

### Air Canister Certification Results

Lab ID: L2269613-04  
 Client ID: CAN 2496 SHELF 22  
 Sample Location:

Date Collected: 12/12/22 10:00  
 Date Received: 12/12/22  
 Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
1,2-Dichloropropane	ND	0.020	0.005	ND	0.092	0.025		1
Bromodichloromethane	ND	0.020	0.007	ND	0.134	0.045		1
1,4-Dioxane	ND	0.100	0.032	ND	0.360	0.115		1
Trichloroethene	ND	0.020	0.006	ND	0.107	0.033		1
cis-1,3-Dichloropropene	ND	0.020	0.007	ND	0.091	0.032		1
4-Methyl-2-pentanone	ND	0.500	0.012	ND	2.05	0.049		1
trans-1,3-Dichloropropene	ND	0.020	0.007	ND	0.091	0.032		1
1,1,2-Trichloroethane	ND	0.020	0.006	ND	0.109	0.032		1
Toluene	ND	0.100	0.014	ND	0.377	0.053		1
Dibromochloromethane	ND	0.020	0.009	ND	0.170	0.073		1
1,2-Dibromoethane	ND	0.020	0.008	ND	0.154	0.062		1
Tetrachloroethene	ND	0.020	0.008	ND	0.136	0.053		1
1,1,1,2-Tetrachloroethane	ND	0.020	0.005	ND	0.137	0.036		1
Chlorobenzene	ND	0.100	0.006	ND	0.461	0.030		1
Ethylbenzene	ND	0.020	0.005	ND	0.087	0.021		1
p/m-Xylene	ND	0.040	0.019	ND	0.174	0.083		1
Bromoform	ND	0.020	0.007	ND	0.207	0.067		1
Styrene	ND	0.020	0.005	ND	0.085	0.021		1
1,1,2,2-Tetrachloroethane	ND	0.020	0.006	ND	0.137	0.039		1
o-Xylene	ND	0.020	0.007	ND	0.087	0.029		1
Isopropylbenzene	ND	0.200	0.005	ND	0.983	0.026		1
4-Ethyltoluene	ND	0.020	0.004	ND	0.098	0.021		1
1,3,5-Trimethylbenzene	ND	0.020	0.006	ND	0.098	0.028		1
1,2,4-Trimethylbenzene	ND	0.020	0.004	ND	0.098	0.021		1
Benzyl chloride	ND	0.100	0.007	ND	0.518	0.037		1
1,3-Dichlorobenzene	ND	0.020	0.006	ND	0.120	0.034		1
1,4-Dichlorobenzene	ND	0.020	0.005	ND	0.120	0.032		1



**Project Name:** BATCH CANISTER CERTIFICATION  
**Project Number:** CANISTER QC BAT

**Lab Number:** L2269613  
**Report Date:** 02/28/23

### Air Canister Certification Results

Lab ID: L2269613-04  
 Client ID: CAN 2496 SHELF 22  
 Sample Location:

Date Collected: 12/12/22 10:00  
 Date Received: 12/12/22  
 Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
sec-Butylbenzene	ND	0.200	0.003	ND	1.10	0.018		1
p-Isopropyltoluene	ND	0.200	0.005	ND	1.10	0.025		1
1,2-Dichlorobenzene	ND	0.020	0.010	ND	0.120	0.059		1
n-Butylbenzene	ND	0.200	0.005	ND	1.10	0.026		1
1,2,4-Trichlorobenzene	ND	0.050	0.030	ND	0.371	0.223		1
Naphthalene	ND	0.050	0.035	ND	0.262	0.184		1
1,2,3-Trichlorobenzene	ND	0.050	0.013	ND	0.371	0.100		1
Hexachlorobutadiene	ND	0.050	0.017	ND	0.533	0.181		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	93		60-140
bromochloromethane	92		60-140
chlorobenzene-d5	93		60-140



**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

### Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

#### Cooler Information

Cooler	Custody Seal
NA	Absent

#### Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2259785-01A	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		TS100()
L2259785-01A1	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		TS100()
L2259785-01B	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		TS100()
L2259785-01C	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01D	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01D1	Vial unpreserved 20ml hard-cap split	NA	NA			Y	Absent		A2-NFPIANO8260(365)
L2259785-01D2	Vial unpreserved 20ml hard-cap split	NA	NA			Y	Absent		A2-NFPIANO8260(365)
L2259785-01E	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01F	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01G	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01H	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01I	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01J	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01K	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01L	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01M	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01N	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01O	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01P	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01Q	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01R	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01S	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01T	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)

**Project Name:** DOH JP5**Lab Number:** L2259785**Project Number:** Not Specified**Report Date:** 02/28/23**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L2259785-01U	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01V	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01W	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01X	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365),A2-NFPIANO8260(365)
L2259785-01X1	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFPIANO8260(365)
L2259785-01X2	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFPIANO8260(365)
L2259785-01Y	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-01Z	Vial unpreserved 20ml hard-cap	NA	NA			Y	Absent		A2-NFTPH(365)
L2259785-04E	Vial unpreserved 20ml hard-cap split	NA	NA			Y	Absent		NF-TO15(30)
L2259785-04E1	Canister - 1 Liter	NA	NA			Y	Absent		NF-TO15(30)

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

## GLOSSARY

### Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)  Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers





**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

**Chlordane:** The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

**Difference:** With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

**Final pH:** As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

**Frozen Date/Time:** With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

**Gasoline Range Organics (GRO):** Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

**Initial pH:** As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

**PAH Total:** With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

**PFAS Total:** With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F** - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers



**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

#### **Data Qualifiers**

Identified Compounds (TICs).

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

**Project Name:** DOH JP5  
**Project Number:** Not Specified

**Lab Number:** L2259785  
**Report Date:** 02/28/23

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.
- 48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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The following analytes are not included in our Primary NELAP Scope of Accreditation:

### Westborough Facility

**EPA 624/624.1:** m/p-xylene, o-xylene, Naphthalene

**EPA 625/625.1:** alpha-Terpineol

**EPA 8260C/8260D:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

**EPA 8270D/8270E:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

### Mansfield Facility

**SM 2540D:** TSS

**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**Biological Tissue Matrix:** EPA 3050B

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The following analytes are included in our Massachusetts DEP Scope of Accreditation

### Westborough Facility:

#### Drinking Water

**EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

**EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**

**EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

#### Non-Potable Water

**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LCHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E,**

**SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.

**EPA 624.1:** Volatile Halocarbons & Aromatics,

**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

### Mansfield Facility:

#### Drinking Water

**EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.**

**EPA 522, EPA 537.1.**

#### Non-Potable Water

**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

**EPA 245.1 Hg.**

**SM2340B**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.



Retain  
 Dump/Dispose  
 Test  
 PC  
 Keep Until Testing Complete

## BULK PETROLEUM SAMPLE

Lab Sample No. 202PH-2006 Test Series \_\_\_\_\_

Sample in Lab	Received by <u>BF</u>	Date <u>8/2/12</u>	Time <u>1103</u>
1. Sampling	Initials <u>MB</u>	Date <u>8/2/12</u>	Time <u>1244</u>

2. Product F24 (JP5) F76 FOR 2190 (LTL) 9250 (LO6)

3. Location of Sample Taken  
 Load Rack  490  Adit 1  
 VS -  VC -  
 Pier Station \_\_\_\_\_  
 Upper Tank Farm  
 Red Hill  
 Other \_\_\_\_\_

4. Source (e.g. Tank): UHF 55

5. Type of Sample (check only one box)  
 All level  
 Composite  
 Bottom  
 Line Tap  
 Level Tap @ \_\_\_\_\_ ft  
 Riser Tap

6. Reason for Sample  
 Bimonthly Check  
 Dormancy Check  
 First of the Day  
 After Load of \_\_\_\_\_  
 During Load of \_\_\_\_\_  
 Resample  Quality Check  
 After Receipt from  
 After Interplant Transfer from \_\_\_\_\_  
 Before Discharge to \_\_\_\_\_  
 After Line Pack to \_\_\_\_\_

7. Representative Volume 101490  gallons  barrels

8. Comments  
DOH  
 Visual Check Performed  
 Sample Taken in Rain  
 Resample Lab # \_\_\_\_\_

Original COC

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**Brewer, Roger C**

**From:** Eric Litman <elitman@newfields.com>  
**Sent:** Wednesday, October 19, 2022 8:37 AM  
**To:** Brewer, Roger C  
**Cc:** Jensen, Eric  
**Subject:** [EXTERNAL] RE: JP-5 Fuel Study

Hi Roger,

The samples can get shipped to Alpha and we can pick them up there.

The samples can get shipped to:

Alpha Analytical  
Attn: Susan O'Neil  
320 Forbes Boulevard  
Mansfield, MA 02048  
508-822-9300

Best,  
Eric

Eric Litman, M.S.  
Senior Consultant  
NewFields Environmental  
300 Ledgewood Place, Suite 305  
Rockland MA 02370  
[elitman@newfields.com](mailto:elitman@newfields.com)

781-347-1145 (office)  
781-681-5048 (fax)  
781-424-5731 (mobile)  
[www.newfields.com](http://www.newfields.com)



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**From:** Brewer, Roger C <[roger.brewer@doh.hawaii.gov](mailto:roger.brewer@doh.hawaii.gov)>  
**Sent:** Tuesday, October 18, 2022 9:40 PM  
**To:** Eric Litman <[elitman@newfields.com](mailto:elitman@newfields.com)>  
**Cc:** Jensen, Eric <[Eric.Jensen@tetratech.com](mailto:Eric.Jensen@tetratech.com)>  
**Subject:** RE: JP-5 Fuel Study

Hey Eric (L),

ORIGIN ID:HIKA (808) 225-7084  
ERIC JENSEN  
TETRA TECH, INC.  
737 BISHOP STREET, SUITE 2340

SHIP DATE: 24OCT22  
ACTWGT: 4.00 LB  
CAD: 255272455/INET4530  
DIMS: 14x14x12 IN

HONOLULU, HI 96813  
UNITED STATES US

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ALPHA ANALYTICAL  
320 FORBES BLVD

MANSFIELD MA 02048

(508) 822-9300 REF 10.3.51881/5.25.002  
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581J1AC5F FE2D

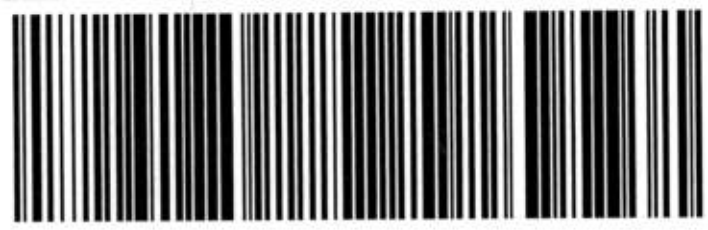


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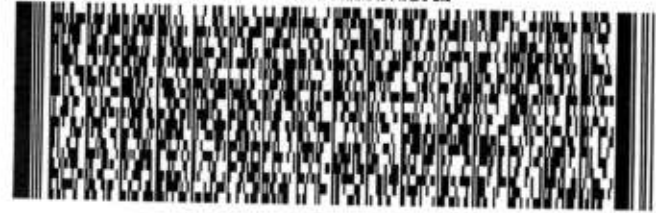
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