

## **ANALYTICAL RESULTS SUMMARY**

GENERAL CHEMISTRY

**PROJECT NAME : R36720**

**TETRA TECH, EMI**

**240 Continental Drive, Suite 200**

**Newark, DE - 19713**

**Phone No: 302-738-7551**

**ORDER ID : P4992**

**ATTENTION : Ava Heiss**



**Laboratory Certification ID # 20012**



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## Cover Page

**Order ID :** P4992

**Project ID :** R36720

**Client :** Tetra Tech, EMI

### Lab Sample Number

P4992-01  
P4992-02  
P4992-03  
P4992-04  
P4992-06  
P4992-07  
P4992-08  
P4992-09

### Client Sample Number

C0KA6  
C0KA7  
C0KA8  
C0KA9  
C0KB1  
C0KB2  
C0KB3  
C0KB4

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature :

N. N. Pandya

**APPROVED**

By Nimisha Pandya, QA/QC Supervisor at 10:43 am, Dec 09, 2024

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

## **CASE NARRATIVE**

**Tetra Tech, EMI**

**Project Name: R36720**

**Project # N/A**

**Chemtech Project # P4992**

**Test Name: Oil and Grease**

### **A. Number of Samples and Date of Receipt:**

8 Water samples were received on 11/23/2024.

### **B. Parameters:**

According to the Chain of Custody document, the following analyses were requested: Oil and Grease. This data package contains results for Oil and Grease.

### **C. Analytical Techniques:**

The analysis of Oil and Grease was based on method 1664A.

### **D. QA/ QC Samples:**

The Holding Times were met for all analysis.

The Blank Spike met requirements for all samples.

The Duplicate analysis met criteria for all samples.

The Matrix Spike analysis met criteria for all samples.

The Matrix Spike Duplicate analysis met criteria for all samples.

The Blank analysis did not indicate the presence of lab contamination.

The Calibration met the requirements.

### **E. Additional Comments:**

As per method 1664A, MS/MSD is required to be performed with the sample analysis. However, Lab did not receive sufficient volume to perform the MS/MSD for P4992 therefore Lab reported MS-MSD from P4991.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

**APPROVED**

By Nimisha Pandya, QA/QC Supervisor at 10:43 am, Dec 09, 2024

## DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following “ Results Qualifiers” are used:

<b>J</b>	Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
<b>U</b>	Indicates the analyte was analyzed for, but not detected.
<b>ND</b>	Indicates the analyte was analyzed for, but not detected
<b>E</b>	Indicates the reported value is estimated because of the presence of interference
<b>M</b>	Indicates Duplicate injection precision not met.
<b>N</b>	Indicates the spiked sample recovery is not within control limits.
<b>S</b>	Indicates the reported value was determined by the Method of Standard Addition (MSA).
<b>*</b>	Indicates that the duplicate analysis is not within control limits.
<b>+</b>	Indicates the correlation coefficient for the MSA is less than 0.995.
<b>D</b>	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
<b>M</b>	Method qualifiers “P” for ICP instrument “PM” for ICP when Microwave Digestion is used “CV” for Manual Cold Vapor AA “AV” for automated Cold Vapor AA “CA” for MIDI-Distillation Spectrophotometric “AS” for Semi -Automated Spectrophotometric “C” for Manual Spectrophotometric “T” for Titrimetric “NR” for analyte not required to be analyzed
<b>OR</b>	Indicates the analyte’s concentration exceeds the calibrated range of the instrument for that specific analysis.
<b>Q</b>	Indicates the LCS did not meet the control limits requirements
<b>H</b>	Sample Analysis Out Of Hold Time

## APPENDIX A

### QA REVIEW GENERAL DOCUMENTATION

Project #: P4992

Completed

For thorough review, the report must have the following:

#### GENERAL:

Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)

✓

Check chain-of-custody for proper relinquish/return of samples

✓

Is the chain of custody signed and complete

✓

Check internal chain-of-custody for proper relinquish/return of samples /sample extracts

✓

Collect information for each project id from server. Were all requirements followed

✓

#### COVER PAGE:

Do numbers of samples correspond to the number of samples in the Chain of Custody on login page

✓

Do lab numbers and client Ids on cover page agree with the Chain of Custody

✓

#### CHAIN OF CUSTODY:

Do requested analyses on Chain of Custody agree with form I results

✓

Do requested analyses on Chain of Custody agree with the log-in page

✓

Were the correct method log-in for analysis according to the Analytical Request and Chain of Custody

✓

Were the samples received within hold time

✓

Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle

✓

#### ANALYTICAL:

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

QA Review Signature: SOHIL JODHANI

Date: 12/06/2024

## LAB CHRONICLE

<b>OrderID:</b>	P4992	<b>OrderDate:</b>	11/25/2024 10:15:00 AM
<b>Client:</b>	Tetra Tech, EMI	<b>Project:</b>	R36720
<b>Contact:</b>	Ava Heiss	<b>Location:</b>	L61

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
<b>P4992-01</b>	<b>C0KA6</b>	<b>WATER</b>			<b>11/21/24 12:00</b>			<b>11/23/24</b>
			Oil and Grease	1664A			12/02/24 10:00	
<b>P4992-02</b>	<b>C0KA7</b>	<b>WATER</b>			<b>11/21/24 13:00</b>			<b>11/23/24</b>
			Oil and Grease	1664A			12/02/24 10:00	
<b>P4992-03</b>	<b>C0KA8</b>	<b>WATER</b>			<b>11/21/24 11:40</b>			<b>11/23/24</b>
			Oil and Grease	1664A			12/02/24 10:00	
<b>P4992-04</b>	<b>C0KA9</b>	<b>WATER</b>			<b>11/21/24 11:15</b>			<b>11/23/24</b>
			Oil and Grease	1664A			12/02/24 10:00	
<b>P4992-06</b>	<b>C0KB1</b>	<b>WATER</b>			<b>11/21/24 12:25</b>			<b>11/23/24</b>
			Oil and Grease	1664A			12/02/24 10:00	
<b>P4992-07</b>	<b>C0KB2</b>	<b>WATER</b>			<b>11/21/24 12:30</b>			<b>11/23/24</b>
			Oil and Grease	1664A			12/02/24 10:00	
<b>P4992-08</b>	<b>C0KB3</b>	<b>WATER</b>			<b>11/21/24 12:40</b>			<b>11/23/24</b>
			Oil and Grease	1664A			12/02/24 10:00	

**LAB CHRONICLE**

<b>P4992-09</b>	<b>C0KB4</b>	<b>WATER</b>			<b>11/21/24</b>	<b>11/23/24</b>
					<b>12:35</b>	
			Oil and Grease	1664A		12/02/24 10:00





# SAMPLE DATA

## Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/21/24 12:00
Project:	R36720	Date Received:	11/23/24
Client Sample ID:	C0KA6	SDG No.:	P4992
Lab Sample ID:	P4992-01	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.40	U	1	0.40	5.00	mg/L		12/02/24 10:00	1664A

Comments: \_\_\_\_\_

U = Not Detected  
 LOQ = Limit of Quantitation  
 MDL = Method Detection Limit  
 LOD = Limit of Detection  
 D = Dilution  
 Q = indicates LCS control criteria did not meet requirements  
 H = Sample Analysis Out Of Hold Time

J = Estimated Value  
 B = Analyte Found in Associated Method Blank  
 \* = indicates the duplicate analysis is not within control limits.  
 E = Indicates the reported value is estimated because of the presence of interference.  
 OR = Over Range  
 N =Spiked sample recovery not within control limits

## Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/21/24 13:00
Project:	R36720	Date Received:	11/23/24
Client Sample ID:	C0KA7	SDG No.:	P4992
Lab Sample ID:	P4992-02	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.40	U	1	0.40	5.00	mg/L		12/02/24 10:00	1664A

Comments: \_\_\_\_\_

U = Not Detected  
LOQ = Limit of Quantitation  
MDL = Method Detection Limit  
LOD = Limit of Detection  
D = Dilution  
Q = indicates LCS control criteria did not meet requirements  
H = Sample Analysis Out Of Hold Time

J = Estimated Value  
B = Analyte Found in Associated Method Blank  
\* = indicates the duplicate analysis is not within control limits.  
E = Indicates the reported value is estimated because of the presence of interference.  
OR = Over Range  
N = Spiked sample recovery not within control limits

## Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/21/24 11:40
Project:	R36720	Date Received:	11/23/24
Client Sample ID:	C0KA8	SDG No.:	P4992
Lab Sample ID:	P4992-03	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.40	U	1	0.40	5.00	mg/L		12/02/24 10:00	1664A

Comments:

U = Not Detected  
 LOQ = Limit of Quantitation  
 MDL = Method Detection Limit  
 LOD = Limit of Detection  
 D = Dilution  
 Q = indicates LCS control criteria did not meet requirements  
 H = Sample Analysis Out Of Hold Time

J = Estimated Value  
 B = Analyte Found in Associated Method Blank  
 \* = indicates the duplicate analysis is not within control limits.  
 E = Indicates the reported value is estimated because of the presence of interference.  
 OR = Over Range  
 N = Spiked sample recovery not within control limits

## Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/21/24 11:15
Project:	R36720	Date Received:	11/23/24
Client Sample ID:	C0KA9	SDG No.:	P4992
Lab Sample ID:	P4992-04	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.60	J	1	0.40	5.00	mg/L		12/02/24 10:00	1664A

Comments:

U = Not Detected  
 LOQ = Limit of Quantitation  
 MDL = Method Detection Limit  
 LOD = Limit of Detection  
 D = Dilution  
 Q = indicates LCS control criteria did not meet requirements  
 H = Sample Analysis Out Of Hold Time

J = Estimated Value  
 B = Analyte Found in Associated Method Blank  
 \* = indicates the duplicate analysis is not within control limits.  
 E = Indicates the reported value is estimated because of the presence of interference.  
 OR = Over Range  
 N =Spiked sample recovery not within control limits

## Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/21/24 12:25
Project:	R36720	Date Received:	11/23/24
Client Sample ID:	C0KB1	SDG No.:	P4992
Lab Sample ID:	P4992-06	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	1.00	J	1	0.40	5.00	mg/L		12/02/24 10:00	1664A

Comments:

U = Not Detected  
 LOQ = Limit of Quantitation  
 MDL = Method Detection Limit  
 LOD = Limit of Detection  
 D = Dilution  
 Q = indicates LCS control criteria did not meet requirements  
 H = Sample Analysis Out Of Hold Time

J = Estimated Value  
 B = Analyte Found in Associated Method Blank  
 \* = indicates the duplicate analysis is not within control limits.  
 E = Indicates the reported value is estimated because of the presence of interference.  
 OR = Over Range  
 N = Spiked sample recovery not within control limits

## Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/21/24 12:30
Project:	R36720	Date Received:	11/23/24
Client Sample ID:	C0KB2	SDG No.:	P4992
Lab Sample ID:	P4992-07	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.90	J	1	0.40	5.00	mg/L		12/02/24 10:00	1664A

Comments:

U = Not Detected  
LOQ = Limit of Quantitation  
MDL = Method Detection Limit  
LOD = Limit of Detection  
D = Dilution  
Q = indicates LCS control criteria did not meet requirements  
H = Sample Analysis Out Of Hold Time

J = Estimated Value  
B = Analyte Found in Associated Method Blank  
\* = indicates the duplicate analysis is not within control limits.  
E = Indicates the reported value is estimated because of the presence of interference.  
OR = Over Range  
N = Spiked sample recovery not within control limits

## Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/21/24 12:40
Project:	R36720	Date Received:	11/23/24
Client Sample ID:	C0KB3	SDG No.:	P4992
Lab Sample ID:	P4992-08	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.40	U	1	0.40	5.00	mg/L		12/02/24 10:00	1664A

Comments:

U = Not Detected  
LOQ = Limit of Quantitation  
MDL = Method Detection Limit  
LOD = Limit of Detection  
D = Dilution  
Q = indicates LCS control criteria did not meet requirements  
H = Sample Analysis Out Of Hold Time

J = Estimated Value  
B = Analyte Found in Associated Method Blank  
\* = indicates the duplicate analysis is not within control limits.  
E = Indicates the reported value is estimated because of the presence of interference.  
OR = Over Range  
N = Spiked sample recovery not within control limits



## Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/21/24 12:35
Project:	R36720	Date Received:	11/23/24
Client Sample ID:	C0KB4	SDG No.:	P4992
Lab Sample ID:	P4992-09	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.40	U	1	0.40	5.00	mg/L		12/02/24 10:00	1664A

Comments:

U = Not Detected  
LOQ = Limit of Quantitation  
MDL = Method Detection Limit  
LOD = Limit of Detection  
D = Dilution  
Q = indicates LCS control criteria did not meet requirements  
H = Sample Analysis Out Of Hold Time

J = Estimated Value  
B = Analyte Found in Associated Method Blank  
\* = indicates the duplicate analysis is not within control limits.  
E = Indicates the reported value is estimated because of the presence of interference.  
OR = Over Range  
N = Spiked sample recovery not within control limits



# QC RESULT SUMMARY

Preparation Blank Summary

Client: Tetra Tech, EMI

SDG No.: P4992

Project: R36720

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID:	LB133675BL						
Oil and Grease	mg/L	< 2.5000	2.5000	U	0.4	5.0	12/02/2024

Matrix Spike Summary

Client:

Tetra Tech, EMI

SDG No.:

P4992

Project:

R36720

Sample ID:

P4991-04

Client ID:

C0KB8MS

Percent Solids for Spike Sample:

0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Oil and Grease	mg/L	78-114	20.7		0.80	J	20.0	1	100		12/02/2024

Matrix Spike Summary

Client:

Tetra Tech, EMI

SDG No.:

P4992

Project:

R36720

Sample ID:

P4991-04

Client ID:

C0KB8MSD

Percent Solids for Spike Sample:

0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Oil and Grease	mg/L	78-114	20.2		0.80	J	20.0	1	97		12/02/2024

## Duplicate Sample Summary

<b>Client:</b>	Tetra Tech, EMI	<b>SDG No.:</b>	P4992
<b>Project:</b>	R36720	<b>Sample ID:</b>	P4991-04
<b>Client ID:</b>	C0KB8MSD	<b>Percent Solids for Spike Sample:</b>	0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/AD	Qual	Analysis Date
Oil and Grease	mg/L	+/-18	20.7		20.2		1	2.44		12/02/2024

### Laboratory Control Sample Summary

**Client:** Tetra Tech, EMI

**SDG No.:** P4992

**Project:** R36720

**Run No.:** LB133675

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	LB133675BS							
Oil and Grease	mg/L	20.0	16.7		84	1	78-114	12/02/2024



# SHIPPING DOCUMENTS



## USEPA CLP COC (LAB COPY)

DateShipped: 11/22/2024

CarrierName: FedEx

AirbillNo: 7701 5007 9029

## CHAIN OF CUSTODY RECORD

DAS #: R36720

Cooler #: Oil and Grease

No: 3-112224-083155-0107

Lab: Chemtech Lab

Lab Contact: Yazmeen Gomez

Lab Phone: (908) 728-3147

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ET-DUP-06-20241121	C0KA6	Waste Water/ START	Grab	O/G(14)	3117 (H2SO4) (1)	DUP-06	11/21/2024 12:00	
ET-SW-01-20241121	C0KA7	Surface Water/ START	Grab	O/G(14)	3120 (H2SO4) (1)	SW-01	11/21/2024 13:00	
ET-SW-02-20241121	C0KA8	Surface Water/ START	Grab	O/G(14)	3123 (H2SO4) (1)	SW-02	11/21/2024 11:40	
ET-SW-03-20241121	C0KA9	Surface Water/ START	Grab	O/G(14)	3131 (H2SO4) (1)	SW-03	11/21/2024 11:15	
ET-SW-04-20241121	C0KB0	Surface Water/ START	Grab	O/G(14)	3134 (H2SO4) (1)	SW-04	11/21/2024 09:35	
ET-TW-01-20241121	C0KB1	Treatment Water/ START	Grab	O/G(14)	3137 (H2SO4) (1)	TW-01	11/21/2024 12:25	
ET-TW-02-20241121	C0KB2	Treatment Water/ START	Grab	O/G(14)	3140 (H2SO4) (1)	TW-02	11/21/2024 12:30	
ET-TW-03-20241121	C0KB3	Treatment Water/ START	Grab	O/G(14)	3143 (H2SO4) (1)	TW-03	11/21/2024 12:40	
ET-TW-04-20241121	C0KB4	Treatment Water/ START	Grab	O/G(14)	3146 (H2SO4) (1)	TW-04	11/21/2024 12:35	

Special Instructions: Oil and Grease	Shipment for Case Complete? N
	Samples Transferred From Chain of Custody #
Analysis Key: O/G=Oil and Grease	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
Sample Shipment	<i>[Signature]</i> / START	11/22/24 1300	<i>[Signature]</i>	11/23/24 10:00	1-3-5 IL Green H1
					<i>[Signature]</i>
					<i>[Signature]</i>

Custody sent to *[Signature]*

**Laboratory Certification**

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255424 Rev 1
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	T104704488