

## ANALYTICAL REPORT

Eurofins Knoxville  
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Knoxville, TN 37921  
Tel: (865)291-3000

Laboratory Job ID: 140-29224-1

Client Project/Site: ALL4 - US Steel - TO-13A

For:

Enthalpy Analytical LLC  
800 Capitola Drive Suite 1  
Durham, North Carolina 27713

Attn: David Myers



Authorized for release by:

10/24/2022 11:01:38 AM

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Results relate only to the items tested and the sample(s) as received by the laboratory.



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Method Summary . . . . .	4
Sample Summary . . . . .	5
Case Narrative . . . . .	6
Client Sample Results . . . . .	7
Default Detection Limits . . . . .	11
Surrogate Summary . . . . .	12
QC Sample Results . . . . .	13
QC Association Summary . . . . .	14
Lab Chronicle . . . . .	15
Certification Summary . . . . .	17
Chain of Custody . . . . .	18

## Definitions/Glossary

Client: Enthalpy Analytical LLC  
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29224-1

### Qualifiers

#### Air - GC/MS Semi VOA

Qualifier	Qualifier Description
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

## Method Summary

Client: Enthalpy Analytical LLC  
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29224-1

Method	Method Description	Protocol	Laboratory
TO-13A	PAHs/ Semivolatile Organics in Ambient Air	EPA	EET KNX
Split	Split Factor Determination	None	EET KNX
TO-13A	Extraction of PAH/Semivolatile Compounds (Ambient Air)	EPA	EET KNX

### Protocol References:

EPA = US Environmental Protection Agency

None = None

### Laboratory References:

EET KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

# Sample Summary

Client: Enthalpy Analytical LLC  
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29224-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-29224-1	PAH01_221011_S	Air	10/11/22 09:45	10/13/22 09:15
140-29224-2	PAH02_221011_S	Air	10/11/22 10:13	10/13/22 09:15
140-29224-3	PAH03_221011_S	Air	10/11/22 10:20	10/13/22 09:15
140-29224-4	PAH04_221011_S	Air	10/11/22 09:33	10/13/22 09:15

# Case Narrative

Client: Enthalpy Analytical LLC  
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29224-1

**Job ID: 140-29224-1**

**Laboratory: Eurofins Knoxville**

## Narrative

### Job Narrative 140-29224-1

#### Sample Receipt

The samples were received on October 13, 2022 at 09:15 in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.8° C. A Chain-of-Custody (COC) was not received with these samples: PAH01\_221011\_S (140-29224-1), PAH02\_221011\_S (140-29224-2), PAH03\_221011\_S (140-29224-3) and PAH04\_221011\_S (140-29224-4). However, an E-mail copy was provided.

#### GC/MS Semi-volatiles

Method TO-13A: The following samples were diluted to bring the concentration of target analytes within the calibration range: PAH01\_221011\_S (140-29224-1), PAH02\_221011\_S (140-29224-2), PAH03\_221011\_S (140-29224-3) and PAH04\_221011\_S (140-29224-4). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Client Sample Results

Client: Enthalpy Analytical LLC  
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29224-1

Client Sample ID: PAH01\_221011\_S

Lab Sample ID: 140-29224-1

Date Collected: 10/11/22 09:45

Matrix: Air

Date Received: 10/13/22 09:15

Sample Container: PUF/XAD

## Method: EPA TO-13A - PAHs/ Semivolatile Organics in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	12.9		10.0	3.00	ug/Sample		10/18/22 08:25	10/19/22 17:18	2
Acenaphthylene	ND		10.0	3.40	ug/Sample		10/18/22 08:25	10/19/22 17:18	2
Anthracene	ND		10.0	2.80	ug/Sample		10/18/22 08:25	10/19/22 17:18	2
Benzo(a)anthracene	ND		10.0	2.20	ug/Sample		10/18/22 08:25	10/19/22 17:18	2
Benzo[a]pyrene	ND		10.0	4.40	ug/Sample		10/18/22 08:25	10/19/22 17:18	2
Benzo[b]fluoranthene	ND		10.0	4.40	ug/Sample		10/18/22 08:25	10/19/22 17:18	2
Benzo[g,h,i]perylene	ND		10.0	3.40	ug/Sample		10/18/22 08:25	10/19/22 17:18	2
Benzo[k]fluoranthene	ND		10.0	2.60	ug/Sample		10/18/22 08:25	10/19/22 17:18	2
Chrysene	ND		10.0	2.60	ug/Sample		10/18/22 08:25	10/19/22 17:18	2
Dibenz(a,h)anthracene	ND		10.0	3.40	ug/Sample		10/18/22 08:25	10/19/22 17:18	2
Fluoranthene	3.54	J	10.0	3.00	ug/Sample		10/18/22 08:25	10/19/22 17:18	2
Fluorene	7.65	J	10.0	3.00	ug/Sample		10/18/22 08:25	10/19/22 17:18	2
Indeno[1,2,3-cd]pyrene	ND		10.0	4.40	ug/Sample		10/18/22 08:25	10/19/22 17:18	2
Naphthalene	153		10.0	3.20	ug/Sample		10/18/22 08:25	10/19/22 17:18	2
Phenanthrene	12.1		10.0	2.80	ug/Sample		10/18/22 08:25	10/19/22 17:18	2
Pyrene	ND		10.0	3.00	ug/Sample		10/18/22 08:25	10/19/22 17:18	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C6-Naphthalene	82		50 - 150				10/18/22 08:25	10/19/22 17:18	2
Nitrobenzene-d5 (Surr)	82		32 - 137				10/18/22 08:25	10/19/22 17:18	2
2-Fluorobiphenyl (Surr)	97		51 - 109				10/18/22 08:25	10/19/22 17:18	2
Terphenyl-d14 (Surr)	115		65 - 124				10/18/22 08:25	10/19/22 17:18	2

# Client Sample Results

Client: Enthalpy Analytical LLC  
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29224-1

Client Sample ID: PAH02\_221011\_S

Lab Sample ID: 140-29224-2

Date Collected: 10/11/22 10:13

Matrix: Air

Date Received: 10/13/22 09:15

Sample Container: PUF/XAD

## Method: EPA TO-13A - PAHs/ Semivolatile Organics in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	27.3	J	50.0	15.0	ug/Sample		10/18/22 08:25	10/19/22 17:43	10
Acenaphthylene	53.5		50.0	17.0	ug/Sample		10/18/22 08:25	10/19/22 17:43	10
Anthracene	ND		50.0	14.0	ug/Sample		10/18/22 08:25	10/19/22 17:43	10
Benzo(a)anthracene	ND		50.0	11.0	ug/Sample		10/18/22 08:25	10/19/22 17:43	10
Benzo[a]pyrene	ND		50.0	22.0	ug/Sample		10/18/22 08:25	10/19/22 17:43	10
Benzo[b]fluoranthene	ND		50.0	22.0	ug/Sample		10/18/22 08:25	10/19/22 17:43	10
Benzo[g,h,i]perylene	ND		50.0	17.0	ug/Sample		10/18/22 08:25	10/19/22 17:43	10
Benzo[k]fluoranthene	ND		50.0	13.0	ug/Sample		10/18/22 08:25	10/19/22 17:43	10
Chrysene	ND		50.0	13.0	ug/Sample		10/18/22 08:25	10/19/22 17:43	10
Dibenz(a,h)anthracene	ND		50.0	17.0	ug/Sample		10/18/22 08:25	10/19/22 17:43	10
Fluoranthene	17.9	J	50.0	15.0	ug/Sample		10/18/22 08:25	10/19/22 17:43	10
Fluorene	57.6		50.0	15.0	ug/Sample		10/18/22 08:25	10/19/22 17:43	10
Indeno[1,2,3-cd]pyrene	ND		50.0	22.0	ug/Sample		10/18/22 08:25	10/19/22 17:43	10
Phenanthrene	76.2		50.0	14.0	ug/Sample		10/18/22 08:25	10/19/22 17:43	10
Pyrene	ND		50.0	15.0	ug/Sample		10/18/22 08:25	10/19/22 17:43	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6-Naphthalene	101		50 - 150	10/18/22 08:25	10/19/22 17:43	10
Nitrobenzene-d5 (Surr)	95		32 - 137	10/18/22 08:25	10/19/22 17:43	10
2-Fluorobiphenyl (Surr)	96		51 - 109	10/18/22 08:25	10/19/22 17:43	10
Terphenyl-d14 (Surr)	106		65 - 124	10/18/22 08:25	10/19/22 17:43	10

## Method: EPA TO-13A - PAHs/ Semivolatile Organics in Ambient Air - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	6530		250	80.0	ug/Sample		10/18/22 08:25	10/20/22 10:52	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6-Naphthalene	0	D S1-	50 - 150	10/18/22 08:25	10/20/22 10:52	50
Nitrobenzene-d5 (Surr)	0	D S1-	32 - 137	10/18/22 08:25	10/20/22 10:52	50
2-Fluorobiphenyl (Surr)	0	D S1-	51 - 109	10/18/22 08:25	10/20/22 10:52	50
Terphenyl-d14 (Surr)	0	D S1-	65 - 124	10/18/22 08:25	10/20/22 10:52	50



# Client Sample Results

Client: Enthalpy Analytical LLC  
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29224-1

Client Sample ID: PAH03\_221011\_S

Lab Sample ID: 140-29224-3

Date Collected: 10/11/22 10:20

Matrix: Air

Date Received: 10/13/22 09:15

Sample Container: PUF/XAD

## Method: EPA TO-13A - PAHs/ Semivolatile Organics in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	27.2	J	50.0	15.0	ug/Sample		10/18/22 08:25	10/19/22 18:06	10
Acenaphthylene	155		50.0	17.0	ug/Sample		10/18/22 08:25	10/19/22 18:06	10
Anthracene	23.3	J	50.0	14.0	ug/Sample		10/18/22 08:25	10/19/22 18:06	10
Benzo(a)anthracene	23.6	J	50.0	11.0	ug/Sample		10/18/22 08:25	10/19/22 18:06	10
Benzo[a]pyrene	ND		50.0	22.0	ug/Sample		10/18/22 08:25	10/19/22 18:06	10
Benzo[b]fluoranthene	ND		50.0	22.0	ug/Sample		10/18/22 08:25	10/19/22 18:06	10
Benzo[g,h,i]perylene	ND		50.0	17.0	ug/Sample		10/18/22 08:25	10/19/22 18:06	10
Benzo[k]fluoranthene	ND		50.0	13.0	ug/Sample		10/18/22 08:25	10/19/22 18:06	10
Chrysene	21.9	J	50.0	13.0	ug/Sample		10/18/22 08:25	10/19/22 18:06	10
Dibenz(a,h)anthracene	ND		50.0	17.0	ug/Sample		10/18/22 08:25	10/19/22 18:06	10
Fluoranthene	53.3		50.0	15.0	ug/Sample		10/18/22 08:25	10/19/22 18:06	10
Fluorene	81.1		50.0	15.0	ug/Sample		10/18/22 08:25	10/19/22 18:06	10
Indeno[1,2,3-cd]pyrene	ND		50.0	22.0	ug/Sample		10/18/22 08:25	10/19/22 18:06	10
Phenanthrene	141		50.0	14.0	ug/Sample		10/18/22 08:25	10/19/22 18:06	10
Pyrene	41.3	J	50.0	15.0	ug/Sample		10/18/22 08:25	10/19/22 18:06	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6-Naphthalene	104		50 - 150	10/18/22 08:25	10/19/22 18:06	10
Nitrobenzene-d5 (Surr)	94		32 - 137	10/18/22 08:25	10/19/22 18:06	10
2-Fluorobiphenyl (Surr)	96		51 - 109	10/18/22 08:25	10/19/22 18:06	10
Terphenyl-d14 (Surr)	107		65 - 124	10/18/22 08:25	10/19/22 18:06	10

## Method: EPA TO-13A - PAHs/ Semivolatile Organics in Ambient Air - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	4240		250	80.0	ug/Sample		10/18/22 08:25	10/20/22 11:16	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6-Naphthalene	0	D S1-	50 - 150	10/18/22 08:25	10/20/22 11:16	50
Nitrobenzene-d5 (Surr)	85	D	32 - 137	10/18/22 08:25	10/20/22 11:16	50
2-Fluorobiphenyl (Surr)	0	D S1-	51 - 109	10/18/22 08:25	10/20/22 11:16	50
Terphenyl-d14 (Surr)	0	D S1-	65 - 124	10/18/22 08:25	10/20/22 11:16	50

# Client Sample Results

Client: Enthalpy Analytical LLC  
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29224-1

Client Sample ID: PAH04\_221011\_S

Lab Sample ID: 140-29224-4

Date Collected: 10/11/22 09:33

Matrix: Air

Date Received: 10/13/22 09:15

Sample Container: PUF/XAD

## Method: EPA TO-13A - PAHs/ Semivolatile Organics in Ambient Air

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	73.2		50.0	15.0	ug/Sample		10/18/22 08:25	10/19/22 18:31	10
Acenaphthylene	1540		50.0	17.0	ug/Sample		10/18/22 08:25	10/19/22 18:31	10
Anthracene	69.0		50.0	14.0	ug/Sample		10/18/22 08:25	10/19/22 18:31	10
Benzo(a)anthracene	ND		50.0	11.0	ug/Sample		10/18/22 08:25	10/19/22 18:31	10
Benzo[a]pyrene	ND		50.0	22.0	ug/Sample		10/18/22 08:25	10/19/22 18:31	10
Benzo[b]fluoranthene	ND		50.0	22.0	ug/Sample		10/18/22 08:25	10/19/22 18:31	10
Benzo[g,h,i]perylene	ND		50.0	17.0	ug/Sample		10/18/22 08:25	10/19/22 18:31	10
Benzo[k]fluoranthene	ND		50.0	13.0	ug/Sample		10/18/22 08:25	10/19/22 18:31	10
Chrysene	ND		50.0	13.0	ug/Sample		10/18/22 08:25	10/19/22 18:31	10
Dibenz(a,h)anthracene	ND		50.0	17.0	ug/Sample		10/18/22 08:25	10/19/22 18:31	10
Fluoranthene	56.4		50.0	15.0	ug/Sample		10/18/22 08:25	10/19/22 18:31	10
Fluorene	374		50.0	15.0	ug/Sample		10/18/22 08:25	10/19/22 18:31	10
Indeno[1,2,3-cd]pyrene	ND		50.0	22.0	ug/Sample		10/18/22 08:25	10/19/22 18:31	10
Phenanthrene	369		50.0	14.0	ug/Sample		10/18/22 08:25	10/19/22 18:31	10
Pyrene	37.9 J		50.0	15.0	ug/Sample		10/18/22 08:25	10/19/22 18:31	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6-Naphthalene	105		50 - 150	10/18/22 08:25	10/19/22 18:31	10
Nitrobenzene-d5 (Surr)	97		32 - 137	10/18/22 08:25	10/19/22 18:31	10
2-Fluorobiphenyl (Surr)	106		51 - 109	10/18/22 08:25	10/19/22 18:31	10
Terphenyl-d14 (Surr)	111		65 - 124	10/18/22 08:25	10/19/22 18:31	10

## Method: EPA TO-13A - PAHs/ Semivolatile Organics in Ambient Air - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	30100		1000	320	ug/Sample		10/18/22 08:25	10/20/22 11:40	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6-Naphthalene	0	D S1-	50 - 150	10/18/22 08:25	10/20/22 11:40	200
Nitrobenzene-d5 (Surr)	0	D S1-	32 - 137	10/18/22 08:25	10/20/22 11:40	200
2-Fluorobiphenyl (Surr)	0	D S1-	51 - 109	10/18/22 08:25	10/20/22 11:40	200
Terphenyl-d14 (Surr)	0	D S1-	65 - 124	10/18/22 08:25	10/20/22 11:40	200

## Default Detection Limits

Client: Enthalpy Analytical LLC  
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29224-1

### Method: TO-13A - PAHs/ Semivolatile Organics in Ambient Air

#### Prep: TO-13A

Analyte	RL	MDL	Units
Acenaphthene	5.00	1.50	ug/Sample
Acenaphthylene	5.00	1.70	ug/Sample
Anthracene	5.00	1.40	ug/Sample
Benzo(a)anthracene	5.00	1.10	ug/Sample
Benzo[a]pyrene	5.00	2.20	ug/Sample
Benzo[b]fluoranthene	5.00	2.20	ug/Sample
Benzo[g,h,i]perylene	5.00	1.70	ug/Sample
Benzo[k]fluoranthene	5.00	1.30	ug/Sample
Chrysene	5.00	1.30	ug/Sample
Dibenz(a,h)anthracene	5.00	1.70	ug/Sample
Fluoranthene	5.00	1.50	ug/Sample
Fluorene	5.00	1.50	ug/Sample
Indeno[1,2,3-cd]pyrene	5.00	2.20	ug/Sample
Naphthalene	5.00	1.60	ug/Sample
Phenanthrene	5.00	1.40	ug/Sample
Pyrene	5.00	1.50	ug/Sample

# Surrogate Summary

Client: Enthalpy Analytical LLC  
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29224-1

## Method: TO-13A - PAHs/ Semivolatile Organics in Ambient Air

Matrix: Air

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	C6N (50-150)	NBZ (32-137)	FBP (51-109)	TPHL (65-124)
140-29224-1	PAH01_221011_S	82	82	97	115
140-29224-2	PAH02_221011_S	101	95	96	106
140-29224-2 - DL	PAH02_221011_S	0 D S1-	0 D S1-	0 D S1-	0 D S1-
140-29224-3	PAH03_221011_S	104	94	96	107
140-29224-3 - DL	PAH03_221011_S	0 D S1-	85 D	0 D S1-	0 D S1-
140-29224-4	PAH04_221011_S	105	97	106	111
140-29224-4 - DL	PAH04_221011_S	0 D S1-	0 D S1-	0 D S1-	0 D S1-
LCS 140-66416/2-B	Lab Control Sample		100	100	104
MB 140-66416/1-B	Method Blank		81	87	116

### Surrogate Legend

C6N = 13C6-Naphthalene

NBZ = Nitrobenzene-d5 (Surr)

FBP = 2-Fluorobiphenyl (Surr)

TPHL = Terphenyl-d14 (Surr)

# QC Sample Results

Client: Enthalpy Analytical LLC  
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29224-1

## Method: TO-13A - PAHs/ Semivolatile Organics in Ambient Air

Lab Sample ID: MB 140-66416/1-B

Matrix: Air

Analysis Batch: 66470

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 66416

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		5.00	1.50	ug/Sample		10/18/22 08:25	10/19/22 14:29	1
Acenaphthylene	ND		5.00	1.70	ug/Sample		10/18/22 08:25	10/19/22 14:29	1
Anthracene	ND		5.00	1.40	ug/Sample		10/18/22 08:25	10/19/22 14:29	1
Benzo(a)anthracene	ND		5.00	1.10	ug/Sample		10/18/22 08:25	10/19/22 14:29	1
Benzo[a]pyrene	ND		5.00	2.20	ug/Sample		10/18/22 08:25	10/19/22 14:29	1
Benzo[b]fluoranthene	ND		5.00	2.20	ug/Sample		10/18/22 08:25	10/19/22 14:29	1
Benzo[g,h,i]perylene	ND		5.00	1.70	ug/Sample		10/18/22 08:25	10/19/22 14:29	1
Benzo[k]fluoranthene	ND		5.00	1.30	ug/Sample		10/18/22 08:25	10/19/22 14:29	1
Chrysene	ND		5.00	1.30	ug/Sample		10/18/22 08:25	10/19/22 14:29	1
Dibenz(a,h)anthracene	ND		5.00	1.70	ug/Sample		10/18/22 08:25	10/19/22 14:29	1
Fluoranthene	ND		5.00	1.50	ug/Sample		10/18/22 08:25	10/19/22 14:29	1
Fluorene	ND		5.00	1.50	ug/Sample		10/18/22 08:25	10/19/22 14:29	1
Indeno[1,2,3-cd]pyrene	ND		5.00	2.20	ug/Sample		10/18/22 08:25	10/19/22 14:29	1
Naphthalene	ND		5.00	1.60	ug/Sample		10/18/22 08:25	10/19/22 14:29	1
Phenanthrene	ND		5.00	1.40	ug/Sample		10/18/22 08:25	10/19/22 14:29	1
Pyrene	ND		5.00	1.50	ug/Sample		10/18/22 08:25	10/19/22 14:29	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	81		32 - 137	10/18/22 08:25	10/19/22 14:29	1
2-Fluorobiphenyl (Surr)	87		51 - 109	10/18/22 08:25	10/19/22 14:29	1
Terphenyl-d14 (Surr)	116		65 - 124	10/18/22 08:25	10/19/22 14:29	1

Lab Sample ID: LCS 140-66416/2-B

Matrix: Air

Analysis Batch: 66470

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 66416

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthene	100	93.96		ug/Sample		94	57 - 117
Acenaphthylene	100	97.06		ug/Sample		97	62 - 122
Anthracene	100	104.4		ug/Sample		104	62 - 122
Benzo(a)anthracene	100	99.21		ug/Sample		99	68 - 128
Benzo[a]pyrene	100	98.32		ug/Sample		98	58 - 118
Benzo[b]fluoranthene	100	99.47		ug/Sample		99	59 - 122
Benzo[g,h,i]perylene	100	95.31		ug/Sample		95	64 - 124
Benzo[k]fluoranthene	100	104.4		ug/Sample		104	59 - 119
Chrysene	100	93.63		ug/Sample		94	57 - 117
Dibenz(a,h)anthracene	100	102.0		ug/Sample		102	63 - 123
Fluoranthene	100	97.59		ug/Sample		98	62 - 122
Fluorene	100	98.11		ug/Sample		98	61 - 121
Indeno[1,2,3-cd]pyrene	100	99.88		ug/Sample		100	65 - 125
Naphthalene	100	93.17		ug/Sample		93	54 - 114
Phenanthrene	100	99.82		ug/Sample		100	60 - 120
Pyrene	100	101.7		ug/Sample		102	60 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Nitrobenzene-d5 (Surr)	100		32 - 137
2-Fluorobiphenyl (Surr)	100		51 - 109
Terphenyl-d14 (Surr)	104		65 - 124

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# QC Association Summary

Client: Enthalpy Analytical LLC  
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29224-1

## Air - GC/MS Semi VOA

### Prep Batch: 66416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29224-1	PAH01_221011_S	Total/NA	Air	TO-13A	
140-29224-2	PAH02_221011_S	Total/NA	Air	TO-13A	
140-29224-2 - DL	PAH02_221011_S	Total/NA	Air	TO-13A	
140-29224-3	PAH03_221011_S	Total/NA	Air	TO-13A	
140-29224-3 - DL	PAH03_221011_S	Total/NA	Air	TO-13A	
140-29224-4 - DL	PAH04_221011_S	Total/NA	Air	TO-13A	
140-29224-4	PAH04_221011_S	Total/NA	Air	TO-13A	
MB 140-66416/1-B	Method Blank	Total/NA	Air	TO-13A	
LCS 140-66416/2-B	Lab Control Sample	Total/NA	Air	TO-13A	

### Analysis Batch: 66470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29224-1	PAH01_221011_S	Total/NA	Air	TO-13A	66472
140-29224-2	PAH02_221011_S	Total/NA	Air	TO-13A	66472
140-29224-3	PAH03_221011_S	Total/NA	Air	TO-13A	66472
140-29224-4	PAH04_221011_S	Total/NA	Air	TO-13A	66472
MB 140-66416/1-B	Method Blank	Total/NA	Air	TO-13A	66472
LCS 140-66416/2-B	Lab Control Sample	Total/NA	Air	TO-13A	66472

### Cleanup Batch: 66472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29224-1	PAH01_221011_S	Total/NA	Air	Split	66416
140-29224-2 - DL	PAH02_221011_S	Total/NA	Air	Split	66416
140-29224-2	PAH02_221011_S	Total/NA	Air	Split	66416
140-29224-3 - DL	PAH03_221011_S	Total/NA	Air	Split	66416
140-29224-3	PAH03_221011_S	Total/NA	Air	Split	66416
140-29224-4	PAH04_221011_S	Total/NA	Air	Split	66416
140-29224-4 - DL	PAH04_221011_S	Total/NA	Air	Split	66416
MB 140-66416/1-B	Method Blank	Total/NA	Air	Split	66416
LCS 140-66416/2-B	Lab Control Sample	Total/NA	Air	Split	66416

### Analysis Batch: 66495

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-29224-2 - DL	PAH02_221011_S	Total/NA	Air	TO-13A	66472
140-29224-3 - DL	PAH03_221011_S	Total/NA	Air	TO-13A	66472
140-29224-4 - DL	PAH04_221011_S	Total/NA	Air	TO-13A	66472

# Lab Chronicle

Client: Enthalpy Analytical LLC  
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29224-1

**Client Sample ID: PAH01\_221011\_S**

**Lab Sample ID: 140-29224-1**

**Date Collected: 10/11/22 09:45**

**Matrix: Air**

**Date Received: 10/13/22 09:15**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	TO-13A			1 PUF	10 mL	66416	10/18/22 08:25	DWS	EET KNX
Total/NA	Cleanup	Split			10 mL	1 mL	66472	10/19/22 13:13	DWS	EET KNX
Total/NA	Analysis	TO-13A		2	1 mL	1 mL	66470	10/19/22 17:18	DWS	EET KNX
Instrument ID: MY										

**Client Sample ID: PAH02\_221011\_S**

**Lab Sample ID: 140-29224-2**

**Date Collected: 10/11/22 10:13**

**Matrix: Air**

**Date Received: 10/13/22 09:15**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	TO-13A			1 PUF	10 mL	66416	10/18/22 08:25	DWS	EET KNX
Total/NA	Cleanup	Split			10 mL	1 mL	66472	10/19/22 13:13	DWS	EET KNX
Total/NA	Analysis	TO-13A		10	1 mL	1 mL	66470	10/19/22 17:43	DWS	EET KNX
Instrument ID: MY										
Total/NA	Prep	TO-13A	DL		1 PUF	10 mL	66416	10/18/22 08:25	DWS	EET KNX
Total/NA	Cleanup	Split	DL		10 mL	1 mL	66472	10/19/22 13:13	DWS	EET KNX
Total/NA	Analysis	TO-13A	DL	50	1 mL	1 mL	66495	10/20/22 10:52	DWS	EET KNX
Instrument ID: MY										

**Client Sample ID: PAH03\_221011\_S**

**Lab Sample ID: 140-29224-3**

**Date Collected: 10/11/22 10:20**

**Matrix: Air**

**Date Received: 10/13/22 09:15**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	TO-13A			1 PUF	10 mL	66416	10/18/22 08:25	DWS	EET KNX
Total/NA	Cleanup	Split			10 mL	1 mL	66472	10/19/22 13:13	DWS	EET KNX
Total/NA	Analysis	TO-13A		10	1 mL	1 mL	66470	10/19/22 18:06	DWS	EET KNX
Instrument ID: MY										
Total/NA	Prep	TO-13A	DL		1 PUF	10 mL	66416	10/18/22 08:25	DWS	EET KNX
Total/NA	Cleanup	Split	DL		10 mL	1 mL	66472	10/19/22 13:13	DWS	EET KNX
Total/NA	Analysis	TO-13A	DL	50	1 mL	1 mL	66495	10/20/22 11:16	DWS	EET KNX
Instrument ID: MY										

**Client Sample ID: PAH04\_221011\_S**

**Lab Sample ID: 140-29224-4**

**Date Collected: 10/11/22 09:33**

**Matrix: Air**

**Date Received: 10/13/22 09:15**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	TO-13A			1 PUF	10 mL	66416	10/18/22 08:25	DWS	EET KNX
Total/NA	Cleanup	Split			10 mL	1 mL	66472	10/19/22 13:13	DWS	EET KNX
Total/NA	Analysis	TO-13A		10	1 mL	1 mL	66470	10/19/22 18:31	DWS	EET KNX
Instrument ID: MY										
Total/NA	Prep	TO-13A	DL		1 PUF	10 mL	66416	10/18/22 08:25	DWS	EET KNX
Total/NA	Cleanup	Split	DL		10 mL	1 mL	66472	10/19/22 13:13	DWS	EET KNX
Total/NA	Analysis	TO-13A	DL	200	1 mL	1 mL	66495	10/20/22 11:40	DWS	EET KNX
Instrument ID: MY										

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# Lab Chronicle

Client: Enthalpy Analytical LLC  
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29224-1

**Client Sample ID: Method Blank**

**Lab Sample ID: MB 140-66416/1-B**

**Date Collected: N/A**

**Matrix: Air**

**Date Received: N/A**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	TO-13A			1 PUF	10 mL	66416	10/18/22 08:25	DWS	EET KNX
Total/NA	Cleanup	Split			10 mL	1 mL	66472	10/19/22 13:13	DWS	EET KNX
Total/NA	Analysis	TO-13A		1	1 mL	1 mL	66470	10/19/22 14:29	DWS	EET KNX
Instrument ID: MY										

**Client Sample ID: Lab Control Sample**

**Lab Sample ID: LCS 140-66416/2-B**

**Date Collected: N/A**

**Matrix: Air**

**Date Received: N/A**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	TO-13A			1 PUF	10 mL	66416	10/18/22 08:25	DWS	EET KNX
Total/NA	Cleanup	Split			10 mL	1 mL	66472	10/19/22 13:13	DWS	EET KNX
Total/NA	Analysis	TO-13A		1	1 mL	1 mL	66470	10/19/22 14:53	DWS	EET KNX
Instrument ID: MY										

## Laboratory References:

EET KNX = Eurofins Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000



# Accreditation/Certification Summary

Client: Enthalpy Analytical LLC  
Project/Site: ALL4 - US Steel - TO-13A

Job ID: 140-29224-1

## Laboratory: Eurofins Knoxville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
	AFCEE	N/A	
ANAB	Dept. of Defense ELAP	L2311	02-13-25
ANAB	Dept. of Energy	L2311.01	02-13-25
ANAB	ISO/IEC 17025	L2311	02-13-25
Arkansas DEQ	State	88-0688	06-16-23
California	State	2423	06-30-22 *
Colorado	State	TN00009	02-28-23
Connecticut	State	PH-0223	09-30-23
Florida	NELAP	E87177	06-30-23
Georgia (DW)	State	906	12-11-22
Hawaii	State	NA	12-11-22
Kansas	NELAP	E-10349	10-31-22
Kentucky (DW)	State	90101	12-31-22
Louisiana	NELAP	83979	06-30-23
Louisiana (All)	NELAP	83979	06-30-23
Louisiana (DW)	State	LA019	12-31-22
Maryland	State	277	03-31-23
Michigan	State	9933	12-11-22
Nevada	State	TN00009	07-31-23
New Hampshire	NELAP	299919	01-17-23
New Jersey	NELAP	TN001	06-30-23
New York	NELAP	10781	03-31-23
North Carolina (DW)	State	21705	07-31-23
North Carolina (WW/SW)	State	64	12-31-22
Ohio VAP	State	CL0059	06-02-23
Oklahoma	State	9415	08-31-23
Oregon	NELAP	TNI0189	12-31-22
Pennsylvania	NELAP	68-00576	12-31-22
Tennessee	State	02014	07-27-25
Texas	NELAP	T104704380-22-17	08-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-19-00236	12-31-22
Utah	NELAP	TN00009	07-31-23
Virginia	NELAP	460176	09-14-23
Washington	State	C593	01-19-23
West Virginia (DW)	State	9955C	12-31-22
West Virginia DEP	State	345	04-30-23
Wisconsin	State	998044300	08-31-23

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

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EUROFINS/TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Log In Number:

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Are the shipping containers intact?	/			<input type="checkbox"/> Containers, Broken	RECEIVED BY <u>Randy Danner</u> <u>ETA KXX</u>
2. Were ambient air containers received intact?				<input type="checkbox"/> Checked in lab	<u>10-13-22 09:10</u>
3. The coolers/containers custody seal if present, is it intact?	/			<input type="checkbox"/> Yes <input type="checkbox"/> NA	<u>CUSTOMY SEALS INTACT</u>
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10 °C) Thermometer ID : <u>5613</u> Correction factor: <u>+0.1 °C</u>	/			<input type="checkbox"/> Cooler Out of Temp, Client Contacted, Proceed/Cancel <input type="checkbox"/> Cooler Out of Temp, Same Day Receipt	<u>RECEIVED AT RT 3.7 / -13.8 °C</u> <u>ASD 10-13-22</u> <u>COOLER BOX # 27905189 9912 PO</u>
5. Were all of the sample containers received intact?	/			<input type="checkbox"/> Containers, Broken	<u>7, USING EMAIL COPY</u>
6. Were samples received in appropriate containers?	/			<input type="checkbox"/> Containers, Improper; Client Contacted; Proceed/Cancel	<u>16</u>
7. Do sample container labels match COC? (IDs, Dates, Times)	/			<input type="checkbox"/> COC & Samples Do Not Match <input type="checkbox"/> COC Incorrect/Incomplete <input checked="" type="checkbox"/> COC Not Received	
8. Were all of the samples listed on the COC received?	/			<input type="checkbox"/> Sample Received, Not on COC <input type="checkbox"/> Sample on COC, Not Received	
9. Is the date/time of sample collection noted?	/			<input type="checkbox"/> COC; No Date/Time; Client Contacted	
10. Was the sampler identified on the COC?	/			<input checked="" type="checkbox"/> Sampler Not Listed on COC	Labeling Verified by: _____ Date: _____
11. Is the client and project name/# identified?	/			<input type="checkbox"/> COC Incorrect/Incomplete	pH test strip lot number: _____
12. Are tests/parameters listed for each sample?	/			<input type="checkbox"/> COC No tests on COC	
13. Is the matrix of the samples noted?	/			<input type="checkbox"/> COC Incorrect/Incomplete	
14. Was COC relinquished? (Signed/Dated/Timed)	/			<input type="checkbox"/> COC Incorrect/Incomplete	Box 16A: pH Preservation Box 18A: Residual Chlorine
15. Were samples received within holding time?	/			<input type="checkbox"/> Holding Time - Receipt	Preservative: _____
16. Were samples received with correct chemical preservative (excluding Encore)?	/			<input type="checkbox"/> pH Adjusted, pH Included (See box 16A)	Lot Number: _____
17. Were VOA samples received without headspace?	/			<input type="checkbox"/> Incorrect Preservative	Exp Date: _____
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number: _____	/			<input type="checkbox"/> Headspace (VOA only) <input type="checkbox"/> Residual Chlorine	Analyst: _____
19. For 1613B water samples is pH<9?	/				Date: _____
20. For rad samples was sample activity info. Provided?	/			<input type="checkbox"/> If no, notify lab to adjust <input type="checkbox"/> Project missing info	Time: _____
Project #: <u>14006806</u> PM Instructions: _____					

Sample Receiving Associate: Randy Danner Date: 10-13-22 QA026R32.doc, 062719