



### Memorandum

To: Tena Seeds, Washington State Department of Ecology

**CC:** Doug Ciserella and Mike Ciserella, TOC Seattle Terminal 1, LLC

Bill Joyce, Joyce Ziker Partners PLLC

Reid Carscadden and Jamie Stevens, CRETE Consulting

From: Kristin Anderson, LHG, and Lynn Grochala, Floyd | Snider

**Date:** October 15, 2021

**Project No:** Cantera-TOC

Re: Time Oil Bulk Terminal Site: Third Quarter 2021 Progress Report

Floyd | Snider is providing this quarterly progress report for the Time Oil Bulk Terminal Site (Site), in accordance with Section XII of the Prospective Purchaser Consent Decree (PPCD) between the Washington State Department of Ecology (Ecology) and TOC Seattle Terminal 1, LLC. The reporting period for this progress report includes activities performed by the project team (Floyd | Snider and CRETE Consulting) from July 1, 2021, through September 30, 2021.

#### **SUMMARY OF ACTIVITIES (SECTION XII.A)**

Activities completed during this reporting period included the following:

#### **Cleanup Action Construction**

On-site cleanup action construction activities began the week of July 12, with contractor mobilization, Site preparation, and a Site construction kick-off meeting with the City of Seattle and Ecology on July 15, 2021. Cleanup action construction activities were performed in accordance with the Ecology-approved June 2021 Engineering Design Report (EDR), including the following:

- Completed excavation and off-site disposal of contaminated soils from the following Cleanup Action Areas (CAAs), in order of completion: CAA-7, CAA-6a, CAA-5, CAA-1a, CAA-1b, and CAA-6b. Please note that light non-aqueous phase liquid (LNAPL) was not observed during remediation of CAA-1a, which was documented in email correspondence with Ecology between August 9 and 16, 2021.
- Completed in-situ solidification and stabilization (ISS) in CAA-2a.



- Initiated excavation, shoring, and off-site disposal of contaminated soils at CAA-2b in early September.
- Initiated ISS work in CAA-4 in mid-September, including installation of shoring along the BNSF property line.
- Decommissioned wells 01MW20, 01MW49, and 01MW50 by a licensed driller (ESN Northwest) on September 13, 2021 (01MW20) and September 28, 2021 (01MW49 and 01MW50). Wells 01MW49 and 01MW50 were planned for removal during the cleanup action. The shallow well 01MW20 was removed because the screened interval was within the excavation depth of CAA-6b. It is anticipated that this well (01MW20) will be re-installed in accordance with the final Groundwater Monitoring Plan after completion of construction activities.
- Collected confirmation soil samples from each excavation in accordance with the EDR to document the completion of remedial excavations in completed CAAs. All excavations were subsequently backfilled with clean fill and compacted based on the specifications in the project drawings. A summary of all confirmation soil samples and copies of laboratory analytical records will be included in the Construction Completion Report.

#### **Deliverables**

Cleanup action construction deliverables included the following:

- Submitted weekly cleanup action construction progress summary emails to Ecology beginning on July 22, 2021. These weekly emails also included a projected 3-week contractor look-ahead schedule for construction.
- Completed cleanup action construction reporting in accordance with city and county permits:
  - Submitted Discharge Monitoring Reports (DMRs) under the Construction Stormwater General Permit (CSGP) WAR 310049 on August 15, 2021 (covering the reporting period of July 2021) and September 13, 2021 (covering the reporting period of August 2021).
  - Completed Self-Monitoring Reports (SMRs) under King County Industrial Waste (KCIW) Discharge Authorization 1145-01 on August 9, 2021 (covering the reporting period of July 2021) and September 13, 2021 (covering the reporting period of August 2021).

#### **DESCRIPTION OF DEVIATIONS FROM REQUIRED TASKS (SECTION XII.B)**

None

## ANTICIPATED PROBLEMS IN MEETING SCHEDULE OR OBJECTIVES AND ASSOCIATED SOLUTIONS (SECTIONS XII.C AND XII.D)

 There are no anticipated problems in meeting the schedule of deliverables specified in Exhibit D of the PPCD. The current schedule of deliverables and activities specified in Table 8.1 of the Cleanup Action Plan (Exhibit C of the PPCD) are currently on track and ahead of schedule.

#### SAMPLING, TESTING, OR OTHER DATA REPORTS RECEIVED (SECTION XII.E)

Analytical data for confirmation samples collected for the remedial excavations were received between July 19 and September 15, 2021. In accordance with Section XII.E, copies of analytical data packages are provided in Attachment 1 and include the following:

- CAA-7: Sample delivery group (SDG) 107284
- CAA-6a: SDGs 107439, 107470, 107474, 107499, 107507, 107529, 107530
- CAA-5: SDGs 108011, 108025
- CAA-1a: SDGs 108107, 108108, 108129, 108177
- CAA-1a and CAA-1b: SDG 108153
- CAA-1b: SDGs 108241, 108279, 108430
- CAA-6b: SDGs 109204, 109205, 109128

A summary of these data, and their application to cleanup action implementation, will also be provided in a completion report to be prepared after the completion of cleanup action construction. Analytical data for the samples remaining in place after construction completion will be uploaded to Ecology's Environmental Information Management system, as required by the PPCD.

### ACTIVITIES ANTICIPATED TO BE COMPLETED DURING THE NEXT REPORTING PERIOD (SECTION XII.F)

The following activities are anticipated to be completed during the next quarterly reporting period (October to December 2021):

- Completion of remedial construction activities, including the following:
  - Completion of excavation in CAA-2b and application of advanced oxygen release compound in the completed excavation
  - Excavation in CAA-3
  - ISS, installation of upgradient interceptor trench and permeable reactive barrier, and injection of downgradient PlumeStop barrier in CAA-4
  - Additional ISS swell management
  - Site restoration and contractor demobilization

## DELIVERABLES ANTICIPATED TO BE COMPLETED DURING THE NEXT REPORTING PERIOD (SECTION XII.G)

The following deliverables are anticipated to be completed during the next quarterly reporting period of October through December 2021:

- Deliverables required under the PPCD are not anticipated to be completed during the next quarterly reporting period.
- The project team will continue to provide routine construction status updates to Ecology via email during cleanup action construction.
- Reporting required per the construction permits, including SMRs under the KCIW
  Discharge Authorization and DMRs under the Ecology CSGP, will continue to be
  submitted on a monthly basis during remedial construction.

#### OTHER PERTINENT INFORMATION, INCLUDING CHANGES IN KEY PERSONNEL

None

#### LIST OF ATTACHMENTS

Attachment 1 Laboratory Analytical Reports for Excavation Confirmation Samples

Attachment 1
Laboratory Analytical Reports for
Excavation Confirmation Samples

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

July 22, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on July 19, 2021 from the TOC Seattle Terminal 1, F&BI 107284 project. There are 11 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Jamie Stevens, K.im Hempel, Lynn Grochala, Kristin Anderson, Reid Casscadden CTC0722R.DOC

#### **ENVIRONMENTAL CHEMISTS**

#### CASE NARRATIVE

This case narrative encompasses samples received on July 19, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 107284 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Crete Consulting
107284 -01	CAA7-BASE-19
107284 -02	CAA7-BASE-17
107284 -03	CAA7-BASE-16
107284 -04	CAA7-BASE-15
107284 -05	CAA7-BASE-18
107284 -06	CAA7-BASE-14
107284 -07	CAA7-BASE-13

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Total Metals By EPA Method 6020B

Client ID: CAA7-BASE-19 Client: Crete Consulting

Date Received: 07/19/21 Project: TOC Seattle Terminal 1, F&BI 107284

 Date Extracted:
 07/20/21
 Lab ID:
 107284-01

 Date Analyzed:
 07/20/21
 Data File:
 107284-01.041

 Matrix:
 Soil
 Instrument:
 ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Total Metals By EPA Method 6020B

Client ID: CAA7-BASE-17 Client: Crete Consulting

Date Received: 07/19/21 Project: TOC Seattle Terminal 1, F&BI 107284

 Date Extracted:
 07/20/21
 Lab ID:
 107284-02

 Date Analyzed:
 07/20/21
 Data File:
 107284-02.044

 Matrix:
 Soil
 Instrument:
 ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic 5.66

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Total Metals By EPA Method 6020B

Client ID: CAA7-BASE-16 Client: Crete Consulting

Date Received: 07/19/21 Project: TOC Seattle Terminal 1, F&BI 107284

 Date Extracted:
 07/20/21
 Lab ID:
 107284-03

 Date Analyzed:
 07/20/21
 Data File:
 107284-03.045

 Matrix:
 Soil
 Instrument:
 ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic 3.06

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Total Metals By EPA Method 6020B

Client ID: CAA7-BASE-15 Client: Crete Consulting

Date Received: 07/19/21 Project: TOC Seattle Terminal 1, F&BI 107284

 Date Extracted:
 07/20/21
 Lab ID:
 107284-04

 Date Analyzed:
 07/20/21
 Data File:
 107284-04.046

 Matrix:
 Soil
 Instrument:
 ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic 3.79

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Total Metals By EPA Method 6020B

Client ID: CAA7-BASE-18 Client: Crete Consulting

Date Received: 07/19/21 Project: TOC Seattle Terminal 1, F&BI 107284

 Date Extracted:
 07/20/21
 Lab ID:
 107284-05

 Date Analyzed:
 07/20/21
 Data File:
 107284-05.047

 Matrix:
 Soil
 Instrument:
 ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Total Metals By EPA Method 6020B

Client ID: CAA7-BASE-14 Client: Crete Consulting

Date Received: 07/19/21 Project: TOC Seattle Terminal 1, F&BI 107284

 Date Extracted:
 07/20/21
 Lab ID:
 107284-06

 Date Analyzed:
 07/20/21
 Data File:
 107284-06.048

 Matrix:
 Soil
 Instrument:
 ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Total Metals By EPA Method 6020B

Client ID: CAA7-BASE-13 Client: Crete Consulting

Date Received: 07/19/21 Project: TOC Seattle Terminal 1, F&BI 107284

 Date Extracted:
 07/20/21
 Lab ID:
 107284-07

 Date Analyzed:
 07/20/21
 Data File:
 107284-07.049

 Matrix:
 Soil
 Instrument:
 ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Total Metals By EPA Method 6020B

Client ID: Method Blank Client: Crete Consulting

Date Received: Not Applicable Project: TOC Seattle Terminal 1, F&BI 107284

Date Extracted:07/20/21Lab ID:I1-441 mbDate Analyzed:07/20/21Data File:I1-441 mb.037Matrix:SoilInstrument:ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 07/22/21 Date Received: 07/19/21

Project: TOC Seattle Terminal 1, F&BI 107284

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 107284-01 x5 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	5.99	92	94	75-125	2

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	96	80-120

#### **ENVIRONMENTAL CHEMISTS**

#### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Ph. (206) 285-8282 Seattle, WA 98119-2029 3012 16th Avenue West Friedman & Bruya, Inc. 011-3548-110 Address\_ JATI-BASE-IM CM7-BASE-15 CU1-848-17 CAA7-BASE-118 61-3549-LY10 Phone City, State, ZIP Company TOC Seattle Termina Report To K. Jones, J. Stevens, K. Hempe 48 Pto Sample ID Email Relinquisked by Received by: Received by: Relinquished by: 40 20  $\mathcal{C}$ 2 8 0 Lab ID SIGNATURE 7.19.2021 Date Sampled Ł Somo Time Sampled SAMPLE CHAIN OF CUSTODY 00  $\equiv$ S SAMPLERS (signature) 四四 130 120 PROJECT NAME REMARKS 25 Toc Seathe Terminal 1 788 Sample Type # of Jars PRINT NAME TPH-HCID TPH-Diesel TPH-Gasoline BTEX by 8021B VOCs by 8260C INVOICE TO SVOCs by 8270D TETE GIVENTIVE Samples redeived at PAHs 8270D SIM COMPANY  $\times$ Arsenic Other ☐ Dispose after 30 days ☐ Archive Samples RUSH 24- lew Rush charges authorized by: TURNAROUND TIME SAMPLE DISPOSAL 7.19.21 DATE Notes TIME

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

July 28, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on July 27, 2021 from the TOC Seattle Terminal 1, F&BI 107439 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Time Oil Terminal 1 Group

CTC0728R.DOC

#### **ENVIRONMENTAL CHEMISTS**

#### CASE NARRATIVE

This case narrative encompasses samples received on July 27, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 107439 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Crete Consulting</u>
107439 -01	CAA6A-SS-02
107439 -02	CAA6A-SS-03
107439 -03	CAA6A-SS-04

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 07/28/21 Date Received: 07/27/21

Project: TOC Seattle Terminal 1, F&BI 107439

Date Extracted: 07/27/21 Date Analyzed: 07/28/21

#### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE AND TPH AS GASOLINE USING METHOD 8021B AND NWTPH-Gx

Sample ID Laboratory ID	<u>Benzene</u>	Gasoline <u>Range</u>	Surrogate (% Recovery) (Limit 50-132)
CAA6A-SS-02 107439-01 1/5	<0.02 j	130	81
CAA6A-SS-03 107439-02	< 0.02	<5	88
CAA6A-SS-04 107439-03	< 0.02	<5	84
Method Blank <sub>01-1659 MB</sub>	< 0.02	<5	95

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 07/28/21 Date Received: 07/27/21

Project: TOC Seattle Terminal 1, F&BI 107439

Date Extracted: 07/27/21 Date Analyzed: 07/27/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Sample ID	Diesel Range	Motor Oil Range	Surrogate (% Recovery)
Laboratory ID	$\frac{\text{Diesel Range}}{(\text{C}_{10}\text{-C}_{25})}$	(C <sub>25</sub> -C <sub>36</sub> )	(Limit 53-144)
CAA6A-SS-02 107439-01	510	380	91
CAA6A-SS-03 107439-02	<50	<250	99
CAA6A-SS-04 107439-03	<50	<250	91
Method Blank	<50	<250	97

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 07/28/21 Date Received: 07/27/21

Project: TOC Seattle Terminal 1, F&BI 107439

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 107425-01 (Duplicate)

		Sample	Duplicate	
	Reporting	Result	Result	RPD
Analyte	Units	(Wet Wt)	(Wet Wt)	(Limit 20)
Benzene	mg/kg (ppm)	< 0.02	< 0.02	nm
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	mg/kg (ppm)	0.5	89	69-120
Gasoline	mg/kg (ppm)	20	95	71 - 131

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 07/28/21 Date Received: 07/27/21

Project: TOC Seattle Terminal 1, F&BI 107439

## QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 107439-01 (Matrix Spike)

·	•	- ,	Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	440	94	91	64-133	3

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Diesel Extended	mg/kg (ppm)	5,000	94	58-147

#### **ENVIRONMENTAL CHEMISTS**

#### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

CAA6A-SS-02 CAA6A-SS-03 Company Toc REPORT TO R. Jowes, J. Stevens K. Hempel Seattle, WA 98119-2029 Friedman & Bruya, Inc. 10-55-49VY City, State, ZIP Address\_ Ph. (206) 285-8282 3012 16th Avenue West Sample ID Email - Relinquished by; Received by: Received by: Relinquished by: 0% 014-47.21.21 Lab ID SIGNATURE Sampled Date SAMPLE CHAIN OF CUSTODY ME Sampled Service Services SAMPLERS (signature)

Kusty Jones

PROJECT NAME Sop. 1358 Time REMARKS Project specific RLs? - Yes / No Toc Scattle Terminal 1 SOIL Sample Type ≺ List / # of PRINT NAME  $\mathcal{D}$  $\mathcal{O}$  $\times$ Sorol NWTPH-Dx NWTPH-Gx BTEX EPA 8021 þ NWTPH-HCID Samples received at H INVOICE TO ANALYSES REQUESTED VOCs EPA 8260 P0# PAHs EPA 8270 CHESTED Samples received at ORE Consulting FIBE PCBs EPA 8082 COMPANY Default: Dispose after 30 days Archive samples Rush charges authorized by: XRUSH 74 How TURNAROUND TIME SAMPLE DISPOSAL 527.2 のれた Benzewe only DATE Notes から TIME

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

July 30, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on July 28, 2021 from the TOC Seattle Terminal 1, F&BI 107470 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: TOC Seattle Terminal 1

CTC0730R.DOC

#### **ENVIRONMENTAL CHEMISTS**

#### CASE NARRATIVE

This case narrative encompasses samples received on July 28, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 107470 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Crete Consulting
107470 -01	CAA6A-SS-05
107470 -02	CAA6A-SS-01
107470 -03	CAA6A-SS-09

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 07/30/21 Date Received: 07/28/21

Project: TOC Seattle Terminal 1, F&BI 107470

Date Extracted: 07/29/21 Date Analyzed: 07/29/21

#### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Sample ID Laboratory ID	Gasoline Range	Surrogate ( <u>% Recovery</u> ) (Limit 58-139)
CAA6A-SS-09 107470-03	<5	86
Method Blank 01-1661 MB2	<5	85

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 07/30/21 Date Received: 07/28/21

Project: TOC Seattle Terminal 1, F&BI 107470

Date Extracted: 07/29/21 Date Analyzed: 07/29/21

#### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE AND TPH AS GASOLINE USING METHOD 8021B AND NWTPH-Gx

Sample ID Laboratory ID	<u>Benzene</u>	Gasoline <u>Range</u>	Surrogate (% Recovery) (Limit 50-132)
CAA6A-SS-05 107470-01	< 0.02	<5	79
CAA6A-SS-01 107470-02	< 0.02	<5	82
Method Blank	< 0.02	<5	78

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 07/30/21 Date Received: 07/28/21

Project: TOC Seattle Terminal 1, F&BI 107470

Date Extracted: 07/29/21 Date Analyzed: 07/29/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Sample ID Laboratory ID	$\frac{\text{Diesel Range}}{\text{(C}_{10}\text{-C}_{25})}$	$rac{ ext{Motor Oil Range}}{ ext{(C}_{25} ext{-C}_{36} ext{)}}$	Surrogate (% Recovery) (Limit 53-144)
CAA6A-SS-05 107470-01	<50	<250	95
CAA6A-SS-01 107470-02	<50	<250	99
Method Blank	<50	<250	96

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 07/30/21 Date Received: 07/28/21

Project: TOC Seattle Terminal 1, F&BI 107470

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 107437-01 (Duplicate)

		Sample	Duplicate	
	Reporting	Result	Result	RPD
Analyte	Units	(Wet Wt)	(Wet Wt)	(Limit 20)
Benzene	mg/kg (ppm)	< 0.02	< 0.02	nm
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	mg/kg (ppm)	0.5	90	69-120
Gasoline	mg/kg (ppm)	20	85	71 - 131

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 07/30/21 Date Received: 07/28/21

Project: TOC Seattle Terminal 1, F&BI 107470

## QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 107470-01 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	< 50	98	107	64-133	9

Laboratory Code: Laboratory Control Sample

			$\operatorname{Percent}$	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Diesel Extended	mg/kg (ppm)	5,000	98	58-147

#### **ENVIRONMENTAL CHEMISTS**

#### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Report To K. Address Company\_ City, State, ZIP. Too Seattle Terminal

\_Email

Default: Dispose after 30 days

Other\_

☐ Archive samples

SAMPLE DISPOSAL

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Project specific RLs? - Yes / No	REMARKS	Toc Seattle Terminal 1		SAMPLERS (signature)  Eusty Jones	SAMPLE CHAIN OF CUSTODY
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Rush charges authorized by:

BO1 VS-D5

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Seattle, W. Ph. (206) 2 3012 16th £

givel at .	Samples received at 4 oC		Received by:	Ph. (206) 285-8282 Received by:
1	TRI	BISRAT TADESE	WV.	3012 16th Avenue West
15	Crete Consulting 7.28.21 1636	Rusty Tomes	Relinquished by:	Friedman & Bruya, Inc.
	COMPANY	PRINT NAME	SIGNATURE	
ı (				

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S.

3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

August 2, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on July 29, 2021 from the TOC Seattle Terminal 1, F&BI 107474 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: TOC Seattle Terminal 1 Group

CTC0802R.DOC

#### **ENVIRONMENTAL CHEMISTS**

# CASE NARRATIVE

This case narrative encompasses samples received on July 29, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 107474 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Crete Consulting</u>
107474 -01	CAA6A-BASE-01
107474 -02	CAA6A-BASE-02
107474 -03	CAA6A-BASE-03

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/02/21 Date Received: 07/29/21

Project: TOC Seattle Terminal 1, F&BI 107474

Date Extracted: 07/29/21 Date Analyzed: 07/29/21

### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Sample ID Laboratory ID	<u>Benzene</u>	Gasoline <u>Range</u>	Surrogate (% Recovery) (Limit 50-150)
CAA6A-BASE-01 107474-01	< 0.02	40	101
CAA6A-BASE-02 107474-02	0.038	<5	101
CAA6A-BASE-03 107474-03	0.077	<5	101
Method Blank <sub>01-1663 MB</sub>	< 0.02	<5	103

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/02/21 Date Received: 07/29/21

Project: TOC Seattle Terminal 1, F&BI 107474

Date Extracted: 07/29/21 Date Analyzed: 07/29/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Sample ID Laboratory ID	$rac{ ext{Diesel Range}}{ ext{(C}_{10} ext{-C}_{25})}$	$\frac{ ext{Motor Oil Range}}{ ext{(C}_{25} ext{-C}_{36} ext{)}}$	Surrogate (% Recovery) (Limit 48-168)
CAA6A-BASE-01 107474-01	98	<250	102
CAA6A-BASE-02 107474-02	<50	<250	109
CAA6A-BASE-03 107474-03	<50	<250	103
Method Blank	<50	<250	100

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/02/21 Date Received: 07/29/21

Project: TOC Seattle Terminal 1, F&BI 107474

# QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE AND TPH AS GASOLINE

# USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 107474-01 (Duplicate)

		Sample	Duplicate	
	Reporting	Result	Result	RPD
Analyte	Units	(Wet Wt)	(Wet Wt)	(Limit 20)
Benzene	mg/kg (ppm)	< 0.02	< 0.02	nm
Gasoline	mg/kg (ppm)	40	41	2

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	mg/kg (ppm)	0.5	92	69-120
Gasoline	mg/kg (ppm)	20	90	71 - 131

#### ENVIRONMENTAL CHEMISTS

Date of Report: 08/02/21 Date Received: 07/29/21

Project: TOC Seattle Terminal 1, F&BI 107474

# QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 107473-01 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	83	117	115	73-135	2

			Percent		
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Diesel Extended	mg/kg (ppm)	5,000	84	74-139	

#### **ENVIRONMENTAL CHEMISTS**

### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

CALOR CALABRE-03 CAA6A-13A5E-02 CANON-BASE-01 Phone Address Ph. (206) 285-8282 Seattle, WA 98119-2029 3012 I 6th Avenue West City, State, ZIP Company\_ Friedman & Bruya, Inc. REPORTO K. LORDY, J. STEVENS K. HOMPE P 47 40 Sample ID loc Seattle Terminal 4 Email Received by: Relinquished by: Received by: Relinquished by:  $^{\circ}$ DI A-E Lab ID SIGNATURE 7.79.7021 Date Sampled 122 SAMPLE CHAIN OF CUSTODY Time Sampled 0910 28 0915 SAMPLERS (signature) Project specific RLs? - Yes / No PROJECT NAME REMARKS Too Seathe Terminal 1 Sample 788 Char Eusty Jove # of Jars PRINT NAME S S J NWTPH-Dx NWTPH-Gx BTEX EPA 8021 NWTPH-HCID INVOICE TO ANALYSES REQUESTED VOCs EPA 8260 PAHs EPA 8270 CRETE CONSULTING TOB! PCBs EPA 8082 COMPANY Samples received at ☐ Archive samples □ Standard turnaround

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Rush charges authorized by: Default: Dispose after 30 days Other\_ TURNAROUND TIME fol Page# SAMPLE DISPOSAL アガン Bente W on Ly DATE To t 129/21 Notes <u>0</u> TIME 10/5

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S.

3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

August 2, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on July 29, 2021 from the TOC Seattle Terminal 1, F&BI 107499 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: TOC Seattle Terminal 1 Group

CTC0802R.DOC

#### **ENVIRONMENTAL CHEMISTS**

#### CASE NARRATIVE

This case narrative encompasses samples received on July 29, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 107499 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u> <u>Crete Consulting</u> 107499 -01 CAA6A-SS-06

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/02/21 Date Received: 07/29/21

Project: TOC Seattle Terminal 1, F&BI 107499

Date Extracted: 07/30/21 Date Analyzed: 07/30/21

### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE AND TPH AS GASOLINE USING METHOD 8021B AND NWTPH-Gx

Sample ID Laboratory ID	<u>Benzene</u>	Gasoline <u>Range</u>	Surrogate (% Recovery) (Limit 50-132)
CAA6A-SS-06 107499-01	<0.02	<5	79
Method Blank	< 0.02	<5	81

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/02/21 Date Received: 07/29/21

Project: TOC Seattle Terminal 1, F&BI 107499

Date Extracted: 07/30/21 Date Analyzed: 07/30/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Sample ID Laboratory ID	$rac{ ext{Diesel Range}}{ ext{(C}_{10} ext{-C}_{25})}$	$\frac{ ext{Motor Oil Range}}{ ext{(C}_{25} ext{-C}_{36} ext{)}}$	Surrogate (% Recovery) (Limit 48-168)
CAA6A-SS-06 107499-01	<50	<250	109
Method Blank <sub>01-1756 MB</sub>	<50	<250	100

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/02/21 Date Received: 07/29/21

Project: TOC Seattle Terminal 1, F&BI 107499

# QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE AND TPH AS GASOLINE

# USING EPA METHOD 8021B AND NWTPH-Gx $\,$

Laboratory Code: 107499-01 (Duplicate)

		Sample	Duplicate	
	Reporting	Result	Result	RPD
Analyte	Units	(Wet Wt)	(Wet Wt)	(Limit 20)
Benzene	mg/kg (ppm)	< 0.02	< 0.02	nm
Gasoline	mg/kg (ppm)	<5	<5	nm

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	mg/kg (ppm)	0.5	91	66-121
Gasoline	mg/kg (ppm)	20	105	61 - 153

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/02/21 Date Received: 07/29/21

Project: TOC Seattle Terminal 1, F&BI 107499

# QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 107499-01 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	< 50	120	118	73-135	2

		Percent			
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Diesel Extended	mg/kg (ppm)	5,000	115	74-139	

#### **ENVIRONMENTAL CHEMISTS**

### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Report to Table Chair Heard SAMPLERS (Sample Project specific Ris? Yes / No Profession Report to Table Chair Heard Address City, State, ZIP  Phone Email Date Project specific Ris? Yes / No Project Risk Risk Risk Risk Risk Risk Risk Risk
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SAMPLE CHAIN OF CUSTODY  SAMPLES (signature)  PROJECT NAME  TO Scattle Terminal  REMARKS  Project specific RLs? - Yes / No  Project specific RLs? - Yes / No  NWTPH-Dx  NWTPH-Gx  NWTPH-HCID  NWTPH-HCID  NWTPH-HCID  NWTPH-HCID  NWTPH-HCID
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#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

August 3, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on July 30, 2021 from the TOC Seattle Terminal 1, F&BI 107507 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Time Oil Terminal 1

CTC0803R.DOC

#### **ENVIRONMENTAL CHEMISTS**

#### CASE NARRATIVE

This case narrative encompasses samples received on July 30, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 107507 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u> <u>Crete Consulting</u> 107507 -01 CAA6A-Base-04

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/03/21 Date Received: 07/30/21

Project: TOC Seattle Terminal 1, F&BI 107507

Date Extracted: 07/30/21 Date Analyzed: 07/30/21

### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Sample ID Laboratory ID	Benzene	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) Limit 50-150)
CAA6A-Base-04 107507-01	< 0.02	<5	94
Method Blank 01-1663 MB2	< 0.02	<5	102

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/03/21 Date Received: 07/30/21

Project: TOC Seattle Terminal 1, F&BI 107507

Date Extracted: 07/30/21 Date Analyzed: 07/30/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Sample ID Laboratory ID	$rac{ ext{Diesel Range}}{ ext{(C}_{10} ext{-C}_{25} ext{)}}$	$\frac{ ext{Motor Oil Range}}{ ext{(C}_{25} ext{-C}_{36} ext{)}}$	Surrogate (% Recovery) (Limit 53-144)
CAA6A-Base-04 107507-01	<50	<250	95
Method Blank 01-1757 MB	<50	<250	97

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/03/21 Date Received: 07/30/21

Project: TOC Seattle Terminal 1, F&BI 107507

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 107474-01 (Duplicate)

		Sample	Duplicate	
	Reporting	Result	Result	RPD
Analyte	Units	(Wet Wt)	(Wet Wt)	(Limit 20)
Benzene	mg/kg (ppm)	< 0.02	< 0.02	nm
Gasoline	mg/kg (ppm)	41	<b>5</b> 3	$26~\mathrm{hr}$

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	mg/kg (ppm)	0.5	92	69-120
Gasoline	mg/kg (ppm)	20	90	71 - 131

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/03/21 Date Received: 07/30/21

Project: TOC Seattle Terminal 1, F&BI 107507

# QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 107500-01 (Matrix Spike)

·	`	- /	Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	< 50	106	104	64-133	2

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Diesel Extended	mg/kg (ppm)	5,000	102	58-147

#### **ENVIRONMENTAL CHEMISTS**

### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

August 3, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on July 30, 2021 from the TOC Seattle Terminal 1, F&BI 107529 project. There are 5 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Time Oil Terminal 1

CTC0803R.DOC

#### **ENVIRONMENTAL CHEMISTS**

# CASE NARRATIVE

This case narrative encompasses samples received on July 30, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 107529 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Crete Consulting</u>
107529 -01	CAA6A-Base-01-8
107529 -02	CAA6A-Base-02A-8
107529 -03	CAA6A-Base-03-8

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/03/21 Date Received: 07/30/21

Project: TOC Seattle Terminal 1, F&BI 107529

Date Extracted: 08/02/21 Date Analyzed: 08/02/21

### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
CAA6A-Base-01-8 107529-01	<5	83
Method Blank 01-1666 MB	<5	69

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/03/21 Date Received: 07/30/21

Project: TOC Seattle Terminal 1, F&BI 107529

Date Extracted: 08/02/21 Date Analyzed: 08/02/21

### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE USING METHOD 8021B

Sample ID Laboratory ID	<u>Benzene</u>	Surrogate (% Recovery) (Limit 50-150)
CAA6A-Base-02A-8 107529-02	< 0.02	102
CAA6A-Base-03-8 107529-03	< 0.02	101
Method Blank	< 0.02	87

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/03/21 Date Received: 07/30/21

Project: TOC Seattle Terminal 1, F&BI 107529

# QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Laboratory Code: 107523-01 (Duplicate)

		Sample	Duplicate	
	Reporting	Result	Result	RPD
Analyte	Units	(Wet Wt)	(Wet Wt)	(Limit 20)
Benzene	mg/kg (ppm)	< 0.02	< 0.02	nm
Gasoline	mg/kg (ppm)	<5	<5	nm

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	mg/kg (ppm)	0.5	85	69-120
Gasoline	mg/kg (ppm)	20	110	71 - 131

#### **ENVIRONMENTAL CHEMISTS**

### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
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- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
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- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Company Tol Scattle Termina) 1 Report To K. Jones, J. Stevens, K. Hempel City, State, ZIP Address\_ CAA64-BASE-01-8 Seattle, WA 98119-2029 3012 I 6th Avenue West Friedman & Bruya, Inc. CAMON-BASE-024-8 Ph. (206) 285-8282 CANDA-BASE-03-8 Sample ID Email Received by: Relinquished by: Received by: Relinquished by: 00 20 O(A-E Lab ID SIGNATURE 7.827 Sampled < SAMPLE CHAIN OF CUSTODY SAMPLERS (signature)

FLETY JONES

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Rush charges authorized by: SAMPLE DISPOSAL Default: Dispose after 30 days Page # / BO / Of / Of / Of / OT / TURNAROUND TIME 7/30/21 7.35.2 BENEAUE ONLY DATE Notes 1674 TIME 1674

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

August 3, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on July 30, 2021 from the TOC Seattle Terminal 1, F&BI 107530 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Time Oil Terminal 1

CTC0803R.DOC

#### **ENVIRONMENTAL CHEMISTS**

#### CASE NARRATIVE

This case narrative encompasses samples received on July 30, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 107530 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Crete Consulting
107530 -01	CAA6A-SS-07
107530 -02	CAA6A-SS-08
107530 -03	CAA6A-Base-01-4
107530 -04	CAA6A-Base-02A-5
107530 -05	CAA6A-Base-03-4

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/03/21 Date Received: 07/30/21

Project: TOC Seattle Terminal 1, F&BI 107530

Date Extracted: 08/02/21 Date Analyzed: 08/02/21

### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Sample ID Laboratory ID	Gasoline Range	Surrogate ( <u>% Recovery</u> ) (Limit 58-139)
CAA6A-Base-01-4 107530-03	<5	84
Method Blank 01-1666 MB	<5	69

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/03/21 Date Received: 07/30/21

Project: TOC Seattle Terminal 1, F&BI 107530

Date Extracted: 08/02/21 Date Analyzed: 08/02/21

### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE USING METHOD 8021B

Sample ID Laboratory ID	<u>Benzene</u>	Surrogate (% Recovery) (Limit 50-132)
CAA6A-Base-02A-5	0.044	80
CAA6A-Base-03-4 107530-05	< 0.02	82
Method Blank	<0.02	87

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/03/21 Date Received: 07/30/21

Project: TOC Seattle Terminal 1, F&BI 107530

Date Extracted: 08/02/21 Date Analyzed: 08/02/21

### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE AND TPH AS GASOLINE USING METHOD 8021B AND NWTPH-Gx

Sample ID Laboratory ID	<u>Benzene</u>	Gasoline <u>Range</u>	Surrogate (% Recovery) (Limit 50-132)
CAA6A-SS-07 107530-01	< 0.02	<5	81
CAA6A-SS-08 107530-02	< 0.02	<5	78
Method Blank	< 0.02	<5	87

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/03/21 Date Received: 07/30/21

Project: TOC Seattle Terminal 1, F&BI 107530

Date Extracted: 08/02/21 Date Analyzed: 08/02/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Sample ID Laboratory ID	$rac{ ext{Diesel Range}}{ ext{(C}_{10} ext{-C}_{25})}$	Motor Oil Range (C <sub>25</sub> -C <sub>36</sub> )	Surrogate (% Recovery) (Limit 53-144)
CAA6A-SS-07 107530-01	<50	<250	97
CAA6A-SS-08 107530-02	<50	<250	93
Method Blank	<50	<250	93

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/03/21 Date Received: 07/30/21

Project: TOC Seattle Terminal 1, F&BI 107530

# QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE AND TPH AS GASOLINE

USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 107523-01 (Duplicate)

		Sample	Duplicate	
	Reporting	Result	Result	RPD
Analyte	Units	(Wet Wt)	(Wet Wt)	(Limit 20)
Benzene	mg/kg (ppm)	< 0.02	< 0.02	nm
Gasoline	mg/kg (ppm)	<5	<5	nm

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	mg/kg (ppm)	0.5	85	69-120
Gasoline	mg/kg (ppm)	20	110	71 - 131

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/03/21 Date Received: 07/30/21

Project: TOC Seattle Terminal 1, F&BI 107530

# QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 107537-01 (Matrix Spike)

•	·	- ,	Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	< 50	83	83	64-133	0

			$\operatorname{Percent}$	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Diesel Extended	mg/kg (ppm)	5,000	92	58-147

#### **ENVIRONMENTAL CHEMISTS**

# **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
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- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- $\rm jl$  The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
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- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Ph. (206) 285-8282	Seattle, WA 98119-2029 Re	3012 16th Avenue West Re	Friedman & Bruya, Inc.				reference (see a construction of the members of the construction o	CAA6A-BASE-03-4	CARGA-BASE-02A-5	CANGA-BASE-01-4	CARA-SS-08	CAA64-55-07	Sample ID		PhoneEmail	City, State, ZIP		Company Tol Seattle ]	Report To R. Jones, J. Stevens, K. Henge	107530
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#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

August 4, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on August 2, 2021 from the TOC Seattle Terminal 1, F&BI 108011 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Time Oil Terminal 1

CTC0804R.DOC

#### **ENVIRONMENTAL CHEMISTS**

# CASE NARRATIVE

This case narrative encompasses samples received on August 2, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 108011 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Crete Consulting
108011 -01	CAA5-SS-02
108011 -02	CAA5-SS-03

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/04/21 Date Received: 08/02/21

Project: TOC Seattle Terminal 1, F&BI 108011

Date Extracted: 08/03/21 Date Analyzed: 08/03/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	$\frac{\text{Diesel Range}}{(\text{C}_{10}\text{-C}_{25})}$	$\frac{\text{Motor Oil Range}}{\text{(C}_{25}\text{-C}_{36}\text{)}}$	Surrogate (% Recovery) (Limit 53-144)
CAA5-SS-02 108011-01	<50	<250	95
CAA5-SS-03 108011-02	<50	<250	91
Method Blank 01-1766 MB	<50	<250	98

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 6020B

Client ID: CAA5-SS-02 Client: Crete Consulting

Date Received: 08/02/21 Project: TOC Seattle Terminal 1, F&BI 108011

 Date Extracted:
 08/03/21
 Lab ID:
 108011-01 x5

 Date Analyzed:
 08/03/21
 Data File:
 108011-01 x5.073

Matrix: Soil Instrument: ICPMS2 Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic 5.63

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 6020B

Client ID: CAA5-SS-03 Client: Crete Consulting

Date Received: 08/02/21 Project: TOC Seattle Terminal 1, F&BI 108011

Matrix: Soil Instrument: ICPMS2 Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic 6.36

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 6020B

Client ID: Method Blank Client: Crete Consulting

Date Received: NA Project: TOC Seattle Terminal 1, F&BI 108011

Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/04/21 Date Received: 08/02/21

Project: TOC Seattle Terminal 1, F&BI 108011

# QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 108011-01 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	< 50	84	88	64-133	5

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Diesel Extended	mg/kg (ppm)	5,000	82	58-147

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/04/21 Date Received: 08/02/21

Project: TOC Seattle Terminal 1, F&BI 108011

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 108010-01 x5 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	<5	82	77	75-125	6

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	91	80-120

#### **ENVIRONMENTAL CHEMISTS**

# **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- $\rm jl$  The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Report To R. Jones, J. Stevens, K. Hempe Phone\_ CA15-SS-03 City, State, ZIP Address Company\_ Ph. (206) 285-8282 Seattle, WA 98119-2029 3012 16th Avenue West Friedman & Bruya, Inc. CAR5-55-02 110801 Sample ID TOC Seattle Terminal 1 Email Relinquished by: Relinquished by: Received by: Received by: Lab ID 9 0 SIGNATURE 8.2.2 Sampled Date SAMPLE CHAIN OF CUSTODY Sampled 1505 でで Time PROJECT NAME SAMPLERS (signature) REMARKS Project specific RLs? - Yes / No to C Wath Tombral 4 Sample 7105 Type まるな Treso # of Jars PRINT NAME  $\sim$ NWTPH-Dx DRUNEN NWTPH-Gx BTEX EPA 8021 NWTPH-HCID INVOICE TO ANALYSES REQUESTED スカダーの/ダー VOCs EPA 8260 PO# PAHs EPA 8270 rete Consulting PCBs EPA 8082 COMPANY Arsenic (6010/ Samples received at 100 Default: Dispose after 30 days SAMPLE DISPOSAL

Of Archive samples □ Standard turnaround

KRUSH 24-How v Rush charges authorized by: TURNAROUND TIME 8.2.21 DATE Notes TIME 254

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S.

3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

August 5, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on August 3, 2021 from the TOC Seattle Terminal 1, F&BI 108025 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Time Oil Terminal 1

CTC0805R.DOC

#### **ENVIRONMENTAL CHEMISTS**

# CASE NARRATIVE

This case narrative encompasses samples received on August 3, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 108025 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Crete Consulting
108025 -01	CAA5-SS-04
108025 -02	CAA5-SS-01

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/05/21 Date Received: 08/03/21

Project: TOC Seattle Terminal 1, F&BI 108025

Date Extracted: 08/03/21 Date Analyzed: 08/03/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	$rac{ ext{Diesel Range}}{ ext{(C}_{10} ext{-C}_{25})}$	$\frac{\text{Motor Oil Range}}{\text{(C}_{25}\text{-C}_{36}\text{)}}$	Surrogate (% Recovery) (Limit 56-165)
CAA5-SS-04 108025-01	<50	<250	79
CAA5-SS-01 108025-02	3,200	2,000	84
Method Blank <sub>01-1792 MB</sub>	<50	<250	91

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 6020B

Client ID: CAA5-SS-04 Client: Crete Consulting

Date Received: 08/03/21 Project: TOC Seattle Terminal 1, F&BI 108025

 Date Extracted:
 08/04/21
 Lab ID:
 108025-01

 Date Analyzed:
 08/04/21
 Data File:
 108025-01.052

 Matrix:
 Soil
 Instrument:
 ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic 4.08

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 6020B

Client ID: CAA5-SS-01 Client: Crete Consulting

Date Received: 08/03/21 Project: TOC Seattle Terminal 1, F&BI 108025

 Date Extracted:
 08/04/21
 Lab ID:
 108025-02

 Date Analyzed:
 08/04/21
 Data File:
 108025-02.053

 Matrix:
 Soil
 Instrument:
 ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic 5.26

#### **ENVIRONMENTAL CHEMISTS**

# Analysis For Total Metals By EPA Method 6020B

Client ID: Method Blank Client: Crete Consulting

Date Received: NA Project: TOC Seattle Terminal 1, F&BI 108025

Matrix: Soil Instrument: ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/05/21 Date Received: 08/03/21

Project: TOC Seattle Terminal 1, F&BI 108025

# QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 108025-01 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	< 50	83	84	63-146	1

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Diesel Extended	mg/kg (ppm)	5,000	82	79-144

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/05/21 Date Received: 08/03/21

Project: TOC Seattle Terminal 1, F&BI 108025

# QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 108010-01 x5 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	<5	85	90	75-125	6

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	83	80-120

#### **ENVIRONMENTAL CHEMISTS**

# **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- $\rm jl$  The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

do the John Marie Land Seattle, WA 98119-2029 Phone City, State, ZIP Address Company Toc Seattle Termina 1 3012 16th Avenue West Friedman & Bruya, Inc. Ph. (206) 285-8282 Report To R. Jones J. Stevens, KHEMPE 108025 CAS-35-01 Sample ID CAAS-85-04 Email Relinquished by: Received by: Relinquished by: Received by: 2 Lab ID ō SIGNATURE 8,3,221 Sampled Sero SAMPLE CHAIN OF CUSTODY Sampled 010 PROJECT NAME SAMPLERS (signature) 1070 Project specific RLs? - Yes / No Time REMARKS Too Seattle Termina 1 7000 多う Sample Type ひななる Tisty Joses Jars # of PRINT NAME  $\times$ NWTPH-Dx NWTPH-Gx .-BTEX EPA 8021 NWTPH-HCID INVOICE TO ANALYSES REQUESTED VOCs EPA 8260 P0# ME 08/03/21 PAHs EPA 8270 TRBY CRETE Consulting PCBs EPA 8082 COMPANY Samples received at Arsenic (6000 6000  $\times$ ☐ Standard turnaround ARUSH 24-Hove Other\_ Rush charges authorized by: Default: Dispose after 30 days Page # TURNAROUND TIME SAMPLE DISPOSAL 8/3/21 8.3,22 DATE Notes TIME きる 50

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

August 10, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on August 6, 2021 from the TOC Seattle Terminal 1, F&BI 108107 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Time Oil Terminal 1

CTC0810R.DOC

#### **ENVIRONMENTAL CHEMISTS**

# CASE NARRATIVE

This case narrative encompasses samples received on August 6, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 108107 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Crete Consulting
108107 -01	CAA1A-TP3-7
108107 -02	CAA1A-TP3-9
108107 -03	CAA1A-TP4-8
108107 -04	CAA1A-TP4-12.2
108107 -05	CAA1A-TP4-13.9

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/10/21 Date Received: 08/06/21

Project: TOC Seattle Terminal 1, F&BI 108107

Date Extracted: 08/06/21 Date Analyzed: 08/06/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 58-139)
CAA1A-TP3-7 108107-01	<5	85
CAA1A-TP3-9 108107-02	<5	81
CAA1A-TP4-8 108107-03	35	87
CAA1A-TP4-12.2 108107-04	<5	82
CAA1A-TP4-13.9 108107-05	<5	83
Method Blank 01-1768 MB	<5	96

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/10/21 Date Received: 08/06/21

Project: TOC Seattle Terminal 1, F&BI 108107

Date Extracted: 08/06/21 Date Analyzed: 08/06/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	$\frac{\text{Diesel Range}}{\text{(C}_{10}\text{-C}_{25})}$	$rac{ ext{Motor Oil Range}}{ ext{(C}_{25} ext{-C}_{36} ext{)}}$	Surrogate (% Recovery) (Limit 48-168)
CAA1A-TP3-7 108107-01	<50	<250	95
CAA1A-TP3-9 108107-02	<50	<250	95
CAA1A-TP4-8 108107-03	280	<250	95
CAA1A-TP4-12.2 108107-04	<50	<250	95
CAA1A-TP4-13.9 108107-05	<50	<250	94
Method Blank	<50	<250	99

### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/10/21 Date Received: 08/06/21

Project: TOC Seattle Terminal 1, F&BI 108107

# QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Gasoline	mg/kg (ppm)	20	85	85	71-131	0

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/10/21 Date Received: 08/06/21

Project: TOC Seattle Terminal 1, F&BI 108107

# QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 108107-01 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	< 50	98	100	73-135	2

			Percent		
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Diesel Extended	mg/kg (ppm)	5,000	98	74-139	_

#### **ENVIRONMENTAL CHEMISTS**

# **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Ph. (206) 285-8282 Seattle, WA 98119-2029 3012 16th Avenue West Friedman & Bruya, Inc. PANIA-TP4-12.2 CHAIN\_TP3-7 Address Company Toc Seattle Terminal 1 Report To\_ 8-LAL-AME ally tosia City, State, ZIP Sample ID 401801 Email J. Stevens, K. Hempe Relinquished by: Received by: Received by: Relinquished by: 03A-E .02 A-E 3-4 ho -01 A-E 05 A-E Lab ID SIGNATURE 8.60.2021 Sampled Date oves SAMPLE CHAIN OF CUSTODY Time Sampled PROJECT NAME 202 188 Project specific RLs? - Yes REMARKS 1500 050 TOC Scattle Tominal 1 252 Sample Type ار 8 ランス Jars # of PRINT NAME  $\mathcal{T}$ 2 S J S Samo Hoone NWTPH-Dx NWTPH-Gx BTEX EPA 8021 080 NWTPH-HCID INVOICE TO ANALYSES REQUESTED VOCs EPA 8260 PO# Cate PAHs EPA 8270 787 PCBs EPA 8082 COMPANY Consulting ME 8/6/21 Samples redeived at \_\_\_\_ ☐ Standard turnaround

▼ RUSH 8/9 Morning

Rush charges authorized by: Default: Dispose after 30 days ☐ Archive samples TURNAROUND TIME Page#\_ SAMPLE DISPOSAL 8,6,21 DATE 6.21 Notes TIME 1882

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

August 10, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on August 6, 2021 from the TOC Seattle Terminal 1, F&BI 108108 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Time Oil Terminal 1

CTC0810R.DOC

#### **ENVIRONMENTAL CHEMISTS**

# CASE NARRATIVE

This case narrative encompasses samples received on August 6, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 108108 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Crete Consulting
108108 -01	CAA1A-SS-04
108108 -02	CAA1A-SS-03

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/10/21 Date Received: 08/06/21

Project: TOC Seattle Terminal 1, F&BI 108108

Date Extracted: 08/06/21 Date Analyzed: 08/06/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate ( <u>% Recovery</u> ) (Limit 58-139)
CAA1A-SS-04 108108-01	<5	82
CAA1A-SS-03 108108-02	<5	80
Method Blank	<5	96

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/10/21 Date Received: 08/06/21

Project: TOC Seattle Terminal 1, F&BI 108108

Date Extracted: 08/06/21 Date Analyzed: 08/06/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	$rac{ ext{Diesel Range}}{ ext{(C}_{10} ext{-C}_{25})}$	$\frac{\text{Motor Oil Range}}{\text{(C}_{25}\text{-C}_{36}\text{)}}$	Surrogate (% Recovery) (Limit 48-168)
CAA1A-SS-04 108108-01	<50	<250	94
CAA1A-SS-03 108108-02	<50	<250	96
Method Blank	<50	<250	99

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/10/21 Date Received: 08/06/21

Project: TOC Seattle Terminal 1, F&BI 108108

# QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Gasoline	mg/kg (ppm)	20	85	85	71-131	0

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/10/21 Date Received: 08/06/21

Project: TOC Seattle Terminal 1, F&BI 108108

# QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 108107-01 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	< 50	98	100	73-135	2

			Percent		
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Diesel Extended	mg/kg (ppm)	5,000	98	74-139	Ī

#### **ENVIRONMENTAL CHEMISTS**

#### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Address .Company Report To\_ City, State, ZIP Seattle, WA 98119-2029 Ph. (206) 285-8282 3012 16th Avenue West Friedman & Bruya, Inc. CAAIA-50-05 C1414-85-04 Sample ID Too seathe Termina Email To Stevens Kithempe Relinquished by: Received by: Relinquished by: Received by: OR A-E 01 A-E Lab ID SIGNATURE 8,6,2 Sampled Date < over SAMPLE CHAIN OF CUSTODY Time Sampled SAMPLERS (signature)

Fusty loves

PROJECT NAME コのの 示 Project specific RLs? - Yes / No REMARKS Too Scattle Terminal 1 つるか Sample Туре Jars # of PRINT NAME >; NWTPH-Dx NWTPH-Gx BTEX EPA 8021 NWTPH-HCID INVOICE TO ANALYSES REQUESTED VOCs EPA 8260 PAHs EPA 8270 rete Consulting PCBs EPA 8082 COMPANY ME 8/6/21 CO,/VS3 Samples required at \_\_\_OC Standard turnaround WRUSH 3/9 Morning Rush charges authorized by: ☐ Archive samples Default: Dispose after 30 days Page# TURNAROUND TIME SAMPLE DISPOSAL 8.6.2 DATE Notes HMIL 1567

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

August 11, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on August 9, 2021 from the TOC Seattle Terminal 1, F&BI 108129 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Time Oil Terminal 1

CTC0811R.DOC

#### **ENVIRONMENTAL CHEMISTS**

## CASE NARRATIVE

This case narrative encompasses samples received on August 9, 2020 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 108129 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Crete Consulting
108129 -01	CAA1A-BASE-01
108129 -02	CAA1A-BASE-03
108129 -03	CAA1A-SS-05

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/11/21 Date Received: 08/09/21

Project: TOC Seattle Terminal 1, F&BI 108129

Date Extracted: 08/09/21 Date Analyzed: 08/10/21

### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Sample ID Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 50-150)
CAA1A-BASE-01 108129-01 1/50	4,400	ip
CAA1A-BASE-03 108129-02	<5	101
CAA1A-SS-05 108129-03 1/10	2,700	135
Method Blank	<5	89

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/11/21 Date Received: 08/09/21

Project: TOC Seattle Terminal 1, F&BI 108129

Date Extracted: 08/09/21 Date Analyzed: 08/09/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Sample ID Laboratory ID	$rac{ ext{Diesel Range}}{ ext{(C}_{10} ext{-C}_{25})}$	$\frac{\text{Motor Oil Range}}{(\text{C}_{25}\text{-C}_{36})}$	Surrogate (% Recovery) (Limit 48-168)
CAA1A-BASE-01 108129-01	31,000	3,500 x	${\rm ip}$
CAA1A-BASE-03 108129-02	<50	<250	92
CAA1A-SS-05 108129-03	38,000	14,000 x	ip
Method Blank	<50	<250	94

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/11/21 Date Received: 08/09/21

Project: TOC Seattle Terminal 1, F&BI 108129

# QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 108111-01 (Duplicate)

		Sample	Duplicate	
	Reporting	Result	Result	RPD
Analyte	Units	(Wet Wt)	(Wet Wt)	(Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

			I GICGIII		
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Gasoline	mg/kg (ppm)	20	120	71-131	-

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/11/21 Date Received: 08/09/21

Project: TOC Seattle Terminal 1, F&BI 108129

# QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 108113-02 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	< 50	94	97	73-135	3

			Percent		
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Diesel Extended	mg/kg (ppm)	5,000	96	74-139	_

#### **ENVIRONMENTAL CHEMISTS**

#### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Phone\_ Company Toc Seattle Termina 1 Report To R, Jones, J, Stevens, K, Hempel CAAIA-BASE-03 City, State, ZIP. Address CAAIA-85-05 Seattle, WA 98119-2029 3012 16th Avenue West ph. (206) 285-8282 Friedman & Bruya, Inc. CAAIA-BASE-OI 108129 Sample ID Email Relinquished by: Relinquished by: Received by: Received by:  $\mathcal{O}$ 6 01 A.E 8.9.2021 Lab ID SIGNATURE Sampled Date ≺ 22 SAMPLE CHAIN OF CUSTODY Sampled 052 1250 PROJECT NAME SAMPLERS (signature) Time Project specific RLs? - Yes / No REMARKS 1300 Tocseattle Terminal 1 SOIL Sample Type Rusty Jomes NAM # of Jars PRINT NAME S Un  $\mathcal{T}$ NWTPH-Dx アケイス  $\prec$ NWTPH-Gx BTEX EPA 8021 NWTPH-HCID INVOICE TO ANALYSES REQUESTED VOCs EPA 8260 PO# PAHs EPA 8270 TUBI CRETE Consulfing PCBs EPA 8082 Samples redeived at COMPANY □ Standard turnaround

▼ RUSH 24-How Default: Dispose after 30 days Other\_ Rush charges authorized by: TURNAROUND TIME Col SAMPLE DISPOSAL 14°C 8.9.2 DATE Notes KON 雪 HMII

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

August 12, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on August 10, 2021 from the TOC Seattle Terminal 1, F&BI 108153 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Time Oil Terminal 1

CTC0812R.DOC

#### **ENVIRONMENTAL CHEMISTS**

## CASE NARRATIVE

This case narrative encompasses samples received on August 10, 2020 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 108153 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Crete Consulting
108153 -01	CAA1B-SS-03
108153 -02	CAA1B-BASE-01
108153 -03	CAA1B-SS-02
108153 -04	CAA1B-SS-01
108153 -05	CAA1A-SS-02
108153 -06	CAA1A-BASE-02

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/12/21 Date Received: 08/10/21

Project: TOC Seattle Terminal 1, F&BI 108153

Date Extracted: 08/11/21 Date Analyzed: 08/11/21

### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
CAA1B-SS-03 108153-01	9.7	97
CAA1B-BASE-01 108153-02	13	100
CAA1B-SS-02 108153-03 1/20	2,600	ip
CAA1B-SS-01 108153-04	8.0	100
CAA1A-SS-02 108153-05 1/5	330	114
CAA1A-BASE-02 108153-06 1/10	1,100	ip
Method Blank <sup>01-1773</sup> MB	<5	81

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/12/21 Date Received: 08/10/21

Project: TOC Seattle Terminal 1, F&BI 108153

Date Extracted: 08/11/21 Date Analyzed: 08/11/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Sample ID Laboratory ID	$rac{ ext{Diesel Range}}{ ext{(C}_{10} ext{-C}_{25})}$	$rac{ ext{Motor Oil Range}}{ ext{(C}_{25} ext{-C}_{36} ext{)}}$	Surrogate (% Recovery) (Limit 48-168)
CAA1B-SS-03 108153-01	<50	<250	96
CAA1B-BASE-01 108153-02	<50	<250	83
CAA1B-SS-02 108153-03	30,000	1,400 x	ip
CAA1B-SS-01 108153-04	<50	<250	96
CAA1A-SS-02 108153-05	3,000	<250	94
CAA1A-BASE-02 108153-06	560	<250	96
Method Blank	<50	<250	93

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/12/21 Date Received: 08/10/21

Project: TOC Seattle Terminal 1, F&BI 108153

# QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 108153-01 (Duplicate)

		Sample	Duplicate	
	Reporting	Result	Result	RPD
Analyte	Units	(Wet Wt)	(Wet Wt)	(Limit 20)
Gasoline	mg/kg (ppm)	9.7	13	29 a

			I GICGIII		
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Gasoline	mg/kg (ppm)	20	120	71-131	-

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/12/21 Date Received: 08/10/21

Project: TOC Seattle Terminal 1, F&BI 108153

# QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 108137-01 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	520	91	96	73-135	5

			Percent		
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Diesel Extended	mg/kg (ppm)	5,000	96	74-139	

#### **ENVIRONMENTAL CHEMISTS**

### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

3012 16th Avenue West		K Friedman & Bruya, Inc.	3			5.50	CAHLA BASE-02	CAXIX-SS-02	CAA1B-SS-01	CA411B-SS-02	CAAIB-BASE-01	CAAIB-SS-03	Sample ID		PhoneF	City, State, ZIP	Company (S) Seath	.	[08153
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#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

August 13, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on August 11, 2021 from the TOC Seattle Terminal 1, F&BI 108177 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Time Oil Terminal 1

CTC0813R.DOC

#### **ENVIRONMENTAL CHEMISTS**

## CASE NARRATIVE

This case narrative encompasses samples received on August 11, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 108177 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Crete Consulting
108177 -01	CAA1A-SS-06
108177 -02	CAA1A-SS-01

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/13/21 Date Received: 08/11/21

Project: TOC Seattle Terminal 1, F&BI 108177

Date Extracted: 08/12/21 Date Analyzed: 08/12/21

### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Sample ID Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 50-150)
CAA1A-SS-06 108177-01	<5	77
CAA1A-SS-01 108177-02	120	118
Method Blank	<5	88

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/13/21 Date Received: 08/11/21

Project: TOC Seattle Terminal 1, F&BI 108177

Date Extracted: 08/12/21 Date Analyzed: 08/12/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Sample ID Laboratory ID	$rac{ ext{Diesel Range}}{ ext{(C}_{10} ext{-C}_{25})}$	$\frac{\text{Motor Oil Range}}{\text{(C}_{25}\text{-C}_{36}\text{)}}$	Surrogate (% Recovery) (Limit 53-144)
CAA1A-SS-06 108177-01	<50	<250	89
CAA1A-SS-01 108177-02	330	<250	92
Method Blank	<50	<250	86

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/13/21 Date Received: 08/11/21

Project: TOC Seattle Terminal 1, F&BI 108177

# QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 108177-01 (Duplicate)

		Sample	Duplicate	
	Reporting	Result	Result	RPD
Analyte	Units	(Wet Wt)	(Wet Wt)	(Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Gasoline	mg/kg (ppm)	20	110	71-131

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/13/21 Date Received: 08/11/21

Project: TOC Seattle Terminal 1, F&BI 108177

# QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 108164-01 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	< 50	100	98	64-133	2

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Diesel Extended	mg/kg (ppm)	5,000	100	58-147

#### **ENVIRONMENTAL CHEMISTS**

### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
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- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
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- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
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- L The reported concentration was generated from a library search.
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- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Ph. (206) 285-8282	Seattle, WA 98119-2029	3012 16th Avenue West	Friedman & Bruya, Inc.	,									CARIA-55-01	CAA11-55-56	Sample ID		PhoneEmail	City, State, ZIP	Report To R. Joves, J. Stevens, Company Toc Seattle Term	i.
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#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

August 18, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on August 16, 2021 from the TOC Seattle Terminal 1, F&BI 108241 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Time Oil Terminal 1

CTC0818R.DOC

#### **ENVIRONMENTAL CHEMISTS**

## CASE NARRATIVE

This case narrative encompasses samples received on August 16, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 108241 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Crete Consulting
108241 -01	CAA1B-SS-06
108241 -02	CAA1B-SS-07

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/18/21 Date Received: 08/16/21

Project: TOC Seattle Terminal 1, F&BI 108241

Date Extracted: 08/16/21 Date Analyzed: 08/17/21

### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
CAA1B-SS-06 108241-01 1/100	5,200	105
Method Blank 01-1779 MB	<5	82

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/18/21 Date Received: 08/16/21

Project: TOC Seattle Terminal 1, F&BI 108241

Date Extracted: 08/17/21 Date Analyzed: 08/17/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Sample ID Laboratory ID	$rac{ ext{Diesel Range}}{ ext{(C}_{10} ext{-C}_{25})}$	$rac{ ext{Motor Oil Range}}{ ext{(C}_{25} ext{-C}_{36} ext{)}}$	Surrogate (% Recovery) (Limit 53-144)
CAA1B-SS-06 108241-01	8,100	350 x	92
Method Blank	<50	<250	89

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/18/21 Date Received: 08/16/21

Project: TOC Seattle Terminal 1, F&BI 108241

# QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 108221-01 (Duplicate)

		Sample	Duplicate	
	Reporting	Result	Result	RPD
Analyte	Units	(Wet Wt)	(Wet Wt)	(Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

			I GICGIII	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Gasoline	mg/kg (ppm)	20	105	71-131

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/18/21 Date Received: 08/16/21

Project: TOC Seattle Terminal 1, F&BI 108241

# QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 108228-01 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	< 50	102	103	73-135	1

		Percent				
	Reporting	Spike	Recovery	Acceptance		
Analyte	Units	Level	LCS	Criteria		
Diesel Extended	mg/kg (ppm)	5,000	100	74-139	_	

#### **ENVIRONMENTAL CHEMISTS**

### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Company TOC Seattle Terminal I Report To K. Jones, J. Stevens, K. Hempe Phone City, State, ZIP Address CAL113-95-06 CAKIB-55-07 Ph. (206) 285-8282 Seattle, WA 98119-2029 3012 16th Avenue West Friedman & Bruya, Inc. Sample ID 142801 Email Relinquished by: Received by: Received by: Relinquished by: 8 Lab ID から SIGNATURE 8.16.221 Sampled Date Soral SAMPLE CHAIN OF CUSTODY Sampled SAMPLERS (signature)

Fusty Jowes

PROJECT NAME 11725 三 Project specific RLs? - Yes / No Time REMARKS Too Seattle Terminal 1 18.8 18.8 Sample Type Michie CAY. # of Jars n  $\mathcal{D}$ PRINT NAME Jones NWTPH-Dx **NWTPH-Gx** BTEX EPA 8021 NWTPH-HCID INVOICE TO ANALYSES REQUESTED VOCs EPA 8260 ME BILLY 31M PO# PAHs EPA 8270 CREITE CONSUMMING PCBs EPA 8082 COMPANY Samples received at SAMPLE DISPOSAL

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#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

August 23, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on August 18, 2021 from the TOC Seattle Terminal 1, F&BI 108279 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: TOC Seattle Terminal 1

CTC0823R.DOC

#### **ENVIRONMENTAL CHEMISTS**

## CASE NARRATIVE

This case narrative encompasses samples received on August 18, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 108279 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Crete Consulting
108279 -01	CAA1B-SS-08
108279 -02	CAA1B-SS-09

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/23/21 Date Received: 08/18/21

Project: TOC Seattle Terminal 1, F&BI 108279

Date Extracted: 08/18/21 Date Analyzed: 08/18/21

### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
CAA1B-SS-08 108279-01 1/20	4,500	ip
Method Blank	<5	91

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/23/21 Date Received: 08/18/21

Project: TOC Seattle Terminal 1, F&BI 108279

Date Extracted: 08/18/21 Date Analyzed: 08/18/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Sample ID Laboratory ID	$\frac{\text{Diesel Range}}{\text{(C}_{10}\text{-C}_{25})}$	$rac{ ext{Motor Oil Range}}{ ext{(C}_{25} ext{-C}_{36} ext{)}}$	Surrogate (% Recovery) (Limit 53-144)
CAA1B-SS-08 108279-01	8,900	320 x	90
Method Blank 01-1892 MB	<50	<250	87

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/23/21 Date Received: 08/18/21

Project: TOC Seattle Terminal 1, F&BI 108279

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 108249-01 (Duplicate)

		Sample	Duplicate	
	Reporting	Result	Result	RPD
Analyte	Units	(Wet Wt)	(Wet Wt)	(Limit 20)
Gasoline	mg/kg (ppm)	99	14	150 a

		Percent				
	Reporting	Spike	Recovery	Acceptance		
Analyte	Units	Level	LCS	Criteria		
Gasoline	mg/kg (ppm)	20	110	61-153		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 08/23/21 Date Received: 08/18/21

Project: TOC Seattle Terminal 1, F&BI 108279

## QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 108272-01 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	5,100	105	100	64-133	5

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Diesel Extended	mg/kg (ppm)	5,000	96	58-147

#### **ENVIRONMENTAL CHEMISTS**

### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

BUALB-55-09 Seattle, WA 98119-2029 Ph. (206) 285-8282 3012 16th Avenue West Friedman & Bruya, Inc. CAA1B-SS-08 Address Company TOC Seattle Termina Report To K. Jones, J. Stevens, K. Hempe City, State, ZIP Sample ID \_Email Received by: Received by: Relinquished by: Relinquished by: ) (၁)  $\bigcirc$ Lab ID ASE SIGNATURE 8,18,21 Date Sampled Time Sampled Fust Jows
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#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

August 30, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on August 26, 2021 from the TOC Seattle Terminal 1, F&BI 108430 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: TOC Seattle Terminal 1

NAACTC0830R.DOC

#### **ENVIRONMENTAL CHEMISTS**

#### CASE NARRATIVE

This case narrative encompasses samples received on August 26, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 108430 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u> <u>Crete Consulting</u> 108430 -01 CAA1B-BASE-02

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/30/21 Date Received: 08/26/21

Project: TOC Seattle Terminal 1, F&BI 108430

Date Extracted: 08/27/21 Date Analyzed: 08/27/21

### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
CAA1B-BASE-02 108430-01 1/5	57	99
Method Blank	<5	93

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/30/21 Date Received: 08/26/21

Project: TOC Seattle Terminal 1, F&BI 108430

Date Extracted: 08/27/21 Date Analyzed: 08/27/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Sample ID Laboratory ID	$\frac{\text{Diesel Range}}{\text{(C}_{10}\text{-C}_{25})}$	$\frac{\text{Motor Oil Range}}{(C_{25}\text{-}C_{36})}$	Surrogate (% Recovery) (Limit 48-168)
CAA1B-BASE-02 108430-01	<50	<250	94
Method Blank	<50	<250	95

#### ENVIRONMENTAL CHEMISTS

Date of Report: 08/30/21 Date Received: 08/26/21

Project: TOC Seattle Terminal 1, F&BI 108430

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Gasoline	mg/kg (ppm)	20	130	120	61-153	8

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 08/30/21 Date Received: 08/26/21

Project: TOC Seattle Terminal 1, F&BI 108430

## QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 108430-01 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	< 50	107	109	73-135	2

		Percent			
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Diesel Extended	mg/kg (ppm)	5,000	106	74-139	-

#### **ENVIRONMENTAL CHEMISTS**

### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
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- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

R				,	
Friedman & Bruya, Inc.  3012 16th Avenue West  Seattle, WA 98119-2029  Ph. (206) 285-8282  Recommendation Recom			8/27/21ME	Sample ID	Report To R. Jones J. Stevens K. Hempe Company TOC Seattle Terminal 1 Address City, State, ZIP Phone 206, 713 9372 Email
Relinquished by: Received by: Received by: Received by:				Lab ID 01 A. E	Jeven na l
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#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

September 15, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on September 13, 2021 from the TOC Seattle Terminal 1, F&BI 109204 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: TOC Seattle Terminal 1

CTC0915R.DOC

#### **ENVIRONMENTAL CHEMISTS**

## CASE NARRATIVE

This case narrative encompasses samples received on September 13, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 109204 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Crete Consulting
109204 -01	CAA6B-SS-02
109204 -02	CAA6B-BASE-01

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 09/15/21 Date Received: 09/13/21

Project: TOC Seattle Terminal 1, F&BI 109204

Date Extracted: 09/13/21 Date Analyzed: 09/13/21

### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Sample ID Laboratory ID	Benzene		e Surrogate (% Recovery) (Limit 50-132)
CAA6B-SS-02 109204-01	< 0.02	<5	77
CAA6B-BASE-01 109204-02	< 0.02	91	85
Method Blank 01-1936 MB	< 0.02	<5	76

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 09/15/21 Date Received: 09/13/21

Project: TOC Seattle Terminal 1, F&BI 109204

Date Extracted: 09/13/21 Date Analyzed: 09/13/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Sample ID Laboratory ID	$rac{ ext{Diesel Range}}{ ext{(C}_{10} ext{-C}_{25})}$	$\frac{ ext{Motor Oil Range}}{ ext{(C}_{25} ext{-C}_{36} ext{)}}$	Surrogate (% Recovery) (Limit 48-168)
CAA6B-SS-02 109204-01	<50	<250	94
CAA6B-BASE-01 109204-02	290 x	<250	95
Method Blank	<50	<250	102

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 09/15/21 Date Received: 09/13/21

Project: TOC Seattle Terminal 1, F&BI 109204

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 109204-01 (Duplicate)

		Sample	Duplicate	
	Reporting	Result	Result	RPD
Analyte	Units	(Wet Wt)	(Wet Wt)	(Limit 20)
Benzene	mg/kg (ppm)	< 0.02	< 0.02	nm
Gasoline	mg/kg (ppm)	<5	<5	nm

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	mg/kg (ppm)	0.5	74	66-121
Gasoline	mg/kg (ppm)	20	90	61-153

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 09/15/21 Date Received: 09/13/21

Project: TOC Seattle Terminal 1, F&BI 109204

## QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 109184-01 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	< 50	122	120	73-135	2

			Percent		
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Diesel Extended	mg/kg (ppm)	5,000	130	74-139	

#### **ENVIRONMENTAL CHEMISTS**

#### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Report To R. Jowes, J. Stevens, K. Hempe Company\_ToC 3012 I 6th Avenue West CANOB-BASE-01 CA16B-58-02 Phone, City, State, ZIP Address\_ Ph. (206) 285-8282 Seattle, WA 98119-2029 Friedman & Bruya, Inc. hochol Sample ID Email Relinquished by: Received by: Received by: Relinquished by: S 0) A-E Lab II) SIGNATURE 9,13,21 Sampled Date SAMPLE CHAIN OF CUSTODY Sampled 8 ラス SAMPLERS (signature) Project specific RLs? - Yes / No REMARKS PROJECT NAME Time TOC Scattle Terminal 1 SOIL Sample Type Jars # of PRINT NAME S  $\mathcal{D}$ ONES NWTPH-Dx × NWTPH-Gx or co cre BTEX EPA 8021 NWTPH-HCID INVOICE TO ANALYSES REQUESTED VOCs EPA 8260 PAHs EPA 8270 CRETE CONSULTING FLBJ PCBs EPA 8082 COMPANY 09-13-2021 USI, Samples □ Other\_ SAMPLE DISPOSAL Default: Dispose after 30 days TURNAROUND TIME recei red at 4 9-13-21 Sentene only 9,13,21 Alve anstruction DATE Notes ြင TIME

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

September 16, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on September 13, 2021 from the TOC Seattle Terminal 1, F&BI 109205 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: TOC Seattle Terminal 1

CTC0916R.DOC

#### **ENVIRONMENTAL CHEMISTS**

#### CASE NARRATIVE

This case narrative encompasses samples received on September 13, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 109205 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u> <u>Crete Consulting</u> 109205 -01 CAA6B-SS-01

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 09/16/21 Date Received: 09/13/21

Project: TOC Seattle Terminal 1, F&BI 109205

Date Extracted: 09/13/21 Date Analyzed: 09/14/21

### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Sample ID Laboratory ID	<u>Benzene</u>	Gasoline <u>Range</u>	Surrogate (% Recovery) (Limit 50-150)
CAA6B-SS-01 109205-01	<0.02	<5	94
Method Blank 01-1935 MB	< 0.02	<5	87

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 09/16/21 Date Received: 09/13/21

Project: TOC Seattle Terminal 1, F&BI 109205

Date Extracted: 09/13/21 Date Analyzed: 09/13/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Sample ID Laboratory ID	$rac{ ext{Diesel Range}}{ ext{(C}_{10} ext{-C}_{25})}$	$\frac{ ext{Motor Oil Range}}{ ext{(C}_{25} ext{-C}_{36} ext{)}}$	Surrogate (% Recovery) (Limit 48-168)
CAA6B-SS-01 109205-01	<50	<250	96
Method Blank	<50	<250	102

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 09/16/21 Date Received: 09/13/21

Project: TOC Seattle Terminal 1, F&BI 109205

# QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE AND TPH AS GASOLINE USING METHOD 8021B AND NWTPH-Gx

Laboratory Code: 109160-01 (Duplicate)

		Sample	Duplicate	
	Reporting	Result	Result	RPD
Analyte	Units	(Wet Wt)	(Wet Wt)	(Limit 20)
Benzene	mg/kg (ppm)	< 0.02	< 0.02	nm
Gasoline	mg/kg (ppm)	<5	<5	nm

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	mg/kg (ppm)	0.5	99	69-120
Gasoline	mg/kg (ppm)	20	95	71 - 131

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 09/16/21 Date Received: 09/13/21

Project: TOC Seattle Terminal 1, F&BI 109205

## QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 109184-01 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	< 50	122	120	73-135	2

			Percent		
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Diesel Extended	mg/kg (ppm)	5,000	130	74-139	

#### **ENVIRONMENTAL CHEMISTS**

### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Seattle, WA 98119-2029 Phone\_ Ph. (206) 285-8282 3012 16th Avenue West Report To K. Joves, T. Stevens, K. Hempel Friedman & Bruya, Inc. City, State, ZIP Address Company Tol Scattle Terminal 1 CAMOB-SS-OI 109 205 Sample ID Email Relinquished by: Received by: Relinquished by: Received by: 01 A.E 9.13,21 Lab ID SIGNATURE Sampled Date Sano SSS SAMPLE CHAIN OF CUSTODY Sampled 1030 Time SAMPLERS (signature) PROJECT NAME REMARKS Project specific RLs? - Yes / No Toc scattle Terminal 1 205 Sample Туре Nhan Phan # of Jars PRINT NAME S ~ NWTPH-Dx NWTPH-Gx BTEX EPA 8021 NWTPH-HCID INVOICE TO ANALYSES REQUESTED VOCs EPA 8260 PO# TO BI PAHs EPA 8270 CATE CONSULTING PCBs EPA 8082 Samples received at COMPANY Page # of TURNAROUND TIME Default: Dispose after 30 days ☐ Archive samples Rush charges authorized by: □ Standard turnaround SAMPLE DISPOSAL 9-13-2 9.13.2 4 oc DATE Benzene only Notes TIME る三 126

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

September 15, 2021

Rusty Jones, Project Manager Crete Consulting 16300 Christensen Road, Suite 214 Tukwila, WA 98188

Dear Mr Jones:

Included are the results from the testing of material submitted on September 13, 2021 from the TOC Seattle Terminal 1, F&BI 109218 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: TOC Seattle Terminal 1

CTC0915R.DOC

#### **ENVIRONMENTAL CHEMISTS**

## CASE NARRATIVE

This case narrative encompasses samples received on September 13, 2021 by Friedman & Bruya, Inc. from the Crete Consulting TOC Seattle Terminal 1, F&BI 109218 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Crete Consulting
109218 -01	CAA6B-BASE-02
109218 -02	CAA6B-BASE-03
109218 -03	CAA6B-BASE-04

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 09/15/21 Date Received: 09/13/21

Project: TOC Seattle Terminal 1, F&BI 109218

Date Extracted: 09/12/21 Date Analyzed: 09/12/21

### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
CAA6B-BASE-02 109218-01	24	102
Method Blank 01-1936 MB	<5	90

#### ENVIRONMENTAL CHEMISTS

Date of Report: 09/15/21 Date Received: 09/13/21

Project: TOC Seattle Terminal 1, F&BI 109218

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 109204-01 (Duplicate)

		Sample	Duplicate	
	Reporting	Result	Result	RPD
Analyte	Units	(Wet Wt)	(Wet Wt)	(Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

			I GICGIII		
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Gasoline	mg/kg (ppm)	20	90	61-153	-

#### **ENVIRONMENTAL CHEMISTS**

#### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
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- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
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- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Ph. (206) 285-8282 3012 16th Avenue West Phone\_ Seattle, WA 98119-2029 CHALOB-BASE-02 Friedman & Bruya, Inc. CALOB-BASE-03 City, State, ZIP Company TOC Seattle Terminal STORY BASE-OF Address Report To 109218 Sample ID Email Relinquished by: Relinquished by: Received by: Received by: 3 02 0) A-6 Lab ID SIGNATURE 12.2.2 Sampled Date 5000 SAMPLE CHAIN OF CUSTODY Sampled PROJECT NAME Project specific RLs? - Yes / No SAMPLERS (signature) REMARKS Too Seattle Terminal I つるか Sample Type Sarah Assor Jars # of 7 PRINT NAME 5 5 Washer - proya NWTPH-Dx NWTPH-Gx Swo BTEX EPA 8021 NWTPH-HCID INVOICE TO MALYSES REQUESTED VOCs EPA 8260 PO# CAME CONSTITUTE PAHs EPA 8270 PCBs EPA 8082 COMPANY 09-13-21 Samples redeived at Default: Dispose after 30 days Other ☐ Archive samples RUSH Frater pe RT 1/13/14
Rush charges authorized by: ~6 TURNAROUND TIME CI/ Page # SAMPLE DISPOSAL 9/13/21 9,3,2 Set A SA DATE Notes 1607 1007 2 TIME 5