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October 11, 2021

Ms. Jing Song, L.G., L.H.G.
Washington State Department of Ecology
15700 Dayton Avenue North
Shoreline, Washington 98133

Re: Well Installation and Monitoring Report
Modera River Trail
15801 and 15945 NE 85th Street
Redmond, Washington

Facility/Site ID: 75292
Cleanup Site ID: 15281
VCP Project ID: NW3292

TRC Project Number: 015353.8

Dear Ms. Song:

TRC Environmental Corporation (TRC) is pleased to present this *Well Installation and Monitoring Report* (Report) on behalf of MCRT West Coast, LLC (MCRT) to present the findings of the recent groundwater monitoring well installation and initial sampling that occurred at the Modera River Trail Site located at 15801 and 15945 NE 85th Street in Redmond, Washington (Site). The location of the Site is depicted on Figure 1.

On June 10, 2021, TRC submitted an email Work Plan for groundwater and indoor air monitoring to the Washington State Department of Ecology (Ecology) in response to Ecology's email correspondence on April 28, 2021. You indicated your agreement with the details included in the Work Plan on behalf of Ecology via email on June 11, 2021. Since then, TRC has installed the monitoring wells and conducted the first quarterly groundwater monitoring event associated with that Work Plan. This Report documents the findings of the well installation and initial groundwater sampling, the schedule for continued groundwater monitoring, and the plan for future indoor air sampling.

MONITORING WELL INSTALLATION

On August 18, 2021, TRC directed the installation of two monitoring wells (MW-1 and MW-2) for the purpose of analyzing subsurface soils and to facilitate the collection of groundwater samples from the north side of the Site. The well locations are indicated on Figure 2.

Prior to drilling, TRC notified Washington One-Call Service to identify publicly owned subsurface utilities at the Site. The notification was submitted one week prior to monitoring well installations. A private utility locator was also utilized to confirm the absence of any on-property, subsurface utilities prior to commencing drilling operations.

TRC subcontracted with Cascade Environmental (Cascade) of Woodinville, Washington for the installation of MW-1 and MW-2 using direct-push technology (DPT). Soil from each boring was sampled on a continuous basis, field screened for signs of impacts using a photoionization detector (PID), and logged using the Unified Soil Classification System with visual-manual procedures (American Society for Testing and Materials Method 2488D). Soil borings were advanced to approximately 20 feet below ground surface (bgs). Soil boring logs with screening, sample, and well construction information are included in Attachment A.

During well installation operations, groundwater was observed at approximately 12 feet bgs. Field screening did not indicate soil impacts at either of the two borings. Therefore, in accordance with the Work Plan, soil samples were collected at 8 and 15 feet in both borings. Samples were collected directly into laboratory-supplied glass 4-ounce jars and placed into a chilled cooler for delivery to Friedman & Bruya, Inc. (F&BI) in Seattle, Washington, following standard chain-of-custody protocols. All samples were analyzed for total naphthalenes and carcinogenic polycyclic aromatic hydrocarbons (cPAHs) by U.S. Environmental Protection Agency (EPA) Method 8270E SIM.

Neither naphthalenes nor cPAHs were detected in any soil sample submitted for analysis. Analytical results are summarized in Table 1, laboratory analytical reports are included in Attachment B, and the locations of both monitoring wells are presented on Figure 2.

At the conclusion of boring advancement and soil sampling operations, wells MW-1 and MW-2 were installed using 2-inch diameter Schedule 40 polyvinyl chloride (PVC) with 10-foot lengths of 0.010-inch machine-slotted screen. A filter pack of 12/20 silica sand was placed in the well anulus from the bottom of the screen interval to 1 foot above the top interval of screen at both monitoring wells. A surface seal of hydrated bentonite was installed from the top of the filter pack interval to within approximately 18 inches bgs. Both monitoring wells were completed with traffic-rated, steel, flush-completion protective monuments set in concrete. Well construction details are included in Attachment A.

Following monitoring well installation, both wells were developed using a dedicated surge block and decontaminated submersible pump to remove fine particles from the well casing and filter pack. During development operations, a total of approximately 90 gallons were purged from MW-1, reaching a final turbidity of 30.1 nephelometric turbidity units (NTU). Approximately 40 gallons were purged from MW-2, reaching a final turbidity of 113 NTU.

INITIAL GROUNDWATER MONITORING

TRC mobilized to the Site on August 24, 2021 to complete the initial groundwater monitoring event. Prior to sampling, depth to groundwater was measured to the nearest 0.01 foot relative to the north side of the top of the well casing. Groundwater was measured at 9.75 and 9.55 feet below the top of the well casing at MW-1 and MW-2, respectively. Following depth-to-groundwater measurements, groundwater was purged from the wells using a peristaltic pump and dedicated tubing at a rate of no more than 100 milliliters (mL) per minute. Field parameters were observed until reaching stabilization, in accordance with the following criteria:

- pH: ± 0.1
- Temperature: ± 3 percent
- Conductivity: ± 3 percent
- ORP: ± 20 millivolts
- DO: ± 10 percent if >0.5 milligrams per liter
- Turbidity: ± 10 percent if >5 NTU

Samples were retained directly from sample tubing into laboratory-supplied 500 mL glass containers. All groundwater samples were handled and transported to F&BI following standard chain-of-custody protocols and submitted for the analysis of naphthalenes and cPAHs by EPA Method 8270E SIM.

Neither naphthalenes nor cPAHs were detected in any groundwater sample submitted for analysis. Analytical results are summarized in Table 2, groundwater elevations are presented in Table 3, and a copy of the laboratory analytical report is included in Attachment B.

All investigation-derived waste produced during monitoring well installation and groundwater sampling operations is currently being temporarily stored on-Site in 55-gallon drums, prior to final disposal.

TRC will continue quarterly groundwater monitoring. The next sampling event is scheduled for November 17, 2021. TRC will keep you apprised of the data via email as it is collected.

INDOOR AIR MONITORING

In accordance with the June 10, 2021 Work Plan, TRC will conduct two indoor air monitoring events to confirm the effectiveness of the installed vapor barrier. One sampling event will be conducted in a heating season and one during a cooling season. During both sampling events, two indoor air samples will be collected from areas of the building that are designed for occupancy. An outdoor background sample will also be collected during each event to compare with observed indoor air concentrations.

The indoor air samples will be collected from approximately 5 feet above floor level, which represents the standard breathing zone of potential occupants. The outdoor sample will be collected from an area upgradient, based the prevailing wind relative to the Site. These air samples will utilize 6-Liter Summa cannisters with a 24-hour inlet regulator, as appropriate for evaluating a residential exposure scenario. Each sample will be analyzed for naphthalene using EPA Method TO-15.

The final schedule of the air monitoring operations is dependent upon the progress of the ongoing construction at the Site. At the time of this Report, the construction is not complete. Indoor air samples will only be collected from rooms with completed windows and interior walls, representative of final conditions.

TRC anticipates the first samples to be collected in the coming winter months. We will keep you apprised of the schedule via email.

CLOSING

If you have any questions or comments regarding final well placement of any information presented, please contact us with any questions.

Sincerely,

ERIC MICHAEL KOLTES

Prepared by:
Ramsey Mauldin
Project Environmental Scientist
rmauldin@trccompanies.com

Reviewed and approved by:
Eric Koltes, L.G.
Senior Geologist
ekoltes@trccompanies.com

cc: Mr. Steve Yoon, MCRT West Coast, LLC

ENCLOSURES

Tables

Table 1	Monitoring Well Installation Soil Analytical Results
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Attachment B	Laboratory Analytical Reports

Tables

Table 1
Monitoring Well Installation Soil Analytical Results
Well Installation and Monitoring Report
Modera River Trail Property
15801 and 15945 Northeast 85th Street, Redmond, Washington

Sample Location	Sample ID	Sample Depth (feet)	Sample Date	Semivolatile Organic Compounds[a]			Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs)[a]							TEF-Adjusted Total cPAHs[b]
				Naphthalene	1-Methyl-naphthalene	2-Methyl-naphthalene	Benzo(a) pyrene	Benz(a) anthracene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Indeno (1,2,3-cd) pyrene	
MW-1	MW-1:8	8	8/18/2021	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND
	MW-1:15	15	8/18/2021	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND
MW-2	MW-2:8	8	8/18/2021	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND
	MW-2:15	15	8/18/2021	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ND
MTCA Method A or B Soil Cleanup Level[c]				**5**	**34[d]**	**320[d]**	**See Cleanup Level for TEF-Adjusted Total cPAHs**							**0.1**

Notes:
All results presented in milligrams per kilogram (mg/kg).

a Analyzed by 8270E.

b Toxicity Equivalency Factors (TEFs) calculated under WAC 173-340-708(e) in accordance with Table 708-2 (in WAC 173-340-900).

c Model Toxics Control Act (MTCA) Method A Soil Cleanup Level of Unrestricted Land Uses, Table 740-1 of Washington Administrative Code Chapter 170-340-900.

d MTCA Method B Soil Cleanup Levels from Cleanup Levels and Risk Calculations [CLARC] spreadsheet. Where cleanup levels based on carcinogenic and non-carcinogenic risk were available, the lower value was listed.

ND None of the analyzed compounds were detected at a concentration exceeding the laboratory reporting limit.

Table 2
Groundwater Monitoring Analytical Results
Well Installation and Monitoring Report
Modera River Trail Property
15801 and 15945 Northeast 85th Street, Redmond, Washington

Sample ID	Sample Date	Semivolatile Organic Compounds[a]			Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs)[a]							TEF-Adjusted Total cPAHs[b]
		Naphthalene	1-Methyl-naphthalene	2-Methyl-naphthalene	Benzo(a) pyrene	Benz(a) anthracene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Indeno (1,2,3-cd) pyrene	
MW-1	8/24/2021	<0.4	<0.4	<0.4	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	ND
MW-2	8/24/2021	<0.4	<0.4	<0.4	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	ND
MTCA Method A or B Groundwater Cleanup Level[c]		**160**	**1.5[d]**	**32[d]**	**See Cleanup Level for TEF-Adjusted Total cPAHs**							**0.1**

Notes:
All results presented in micrograms per liter (µg/L).
a Analyzed by 8270E.
b Toxicity Equivalency Factors (TEFs) calculated under WAC 173-340-708(e) in accordance with Table 708-2 (in WAC 173-340-900).
c Model Toxics Control Act (MTCA) Method A Groundwater Cleanup Levels, Table 720-1, Washington Administrative Code (WAC) 173-340-900.
d MTCA Method B Groundwater Cleanup Levels from Cleanup Levels and Risk Calculations [CLARC] spreadsheet. Where cleanup levels based on carcinogenic and non-carcinogenic risk were available, the lower value was listed.
ND None of the analyzed compounds were detected at a concentration exceeding the laboratory reporting limit.

Table 3
Groundwater Elevation Data
Well Installation and Monitoring Report
Modera River Trail Property
15801 and 15945 Northeast 85th Street, Redmond, Washington

Well ID ID	Date	Measured Total Depth	Depth to Water	Casing Elevation[a]	Calculated Groundwater Elevation
MW-1	8/24/2021	14.82	9.75	32.42	22.67
MW-2	8/24/2021	16.6	9.55	32.59	23.04

Notes:

a Wells surveyed by Pace on August 24, 2021, referenced to North American Vertical Datum of 1988 (NAVD88).

Units: US survey feet

Figures

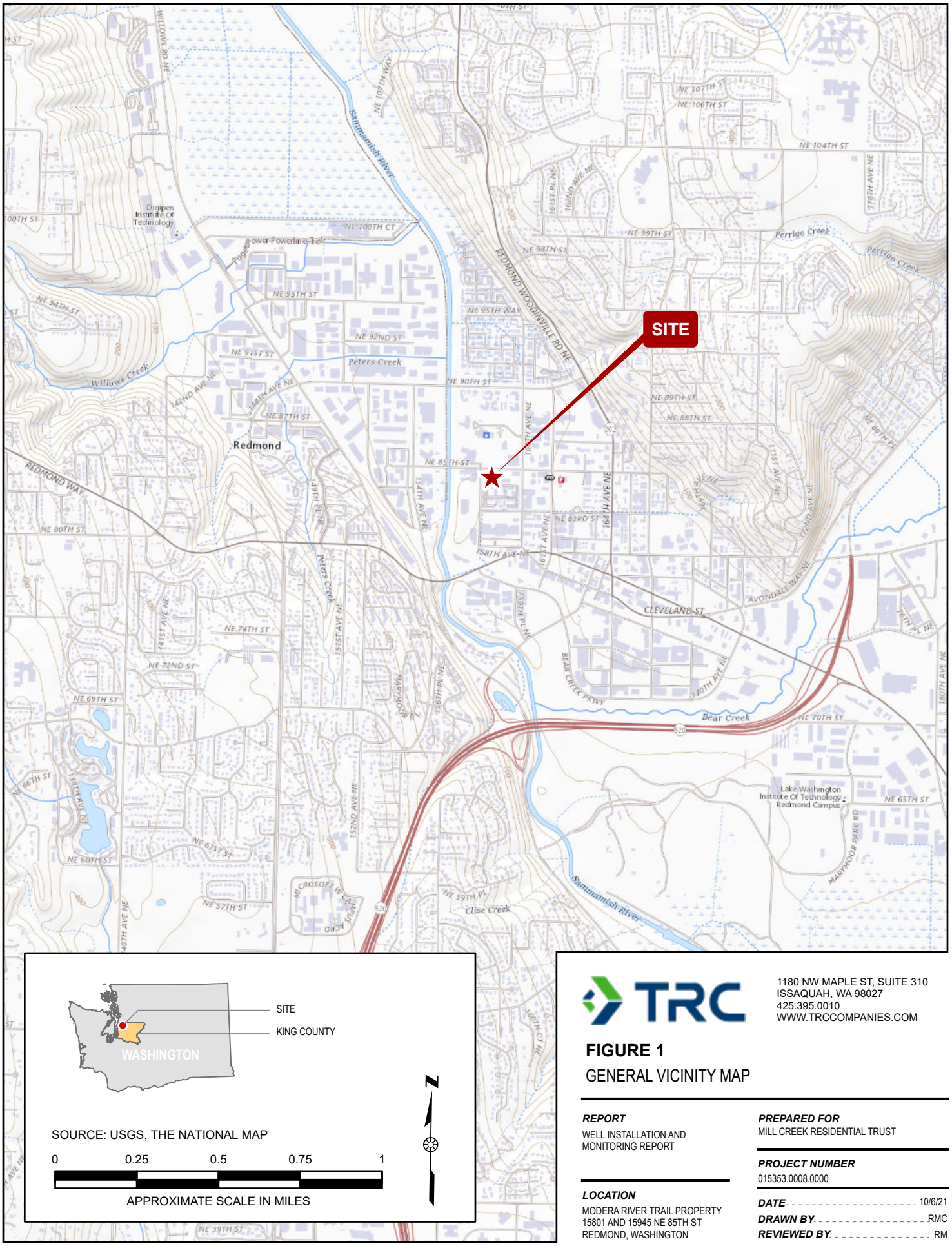

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FIGURE 1
GENERAL VICINITY MAP

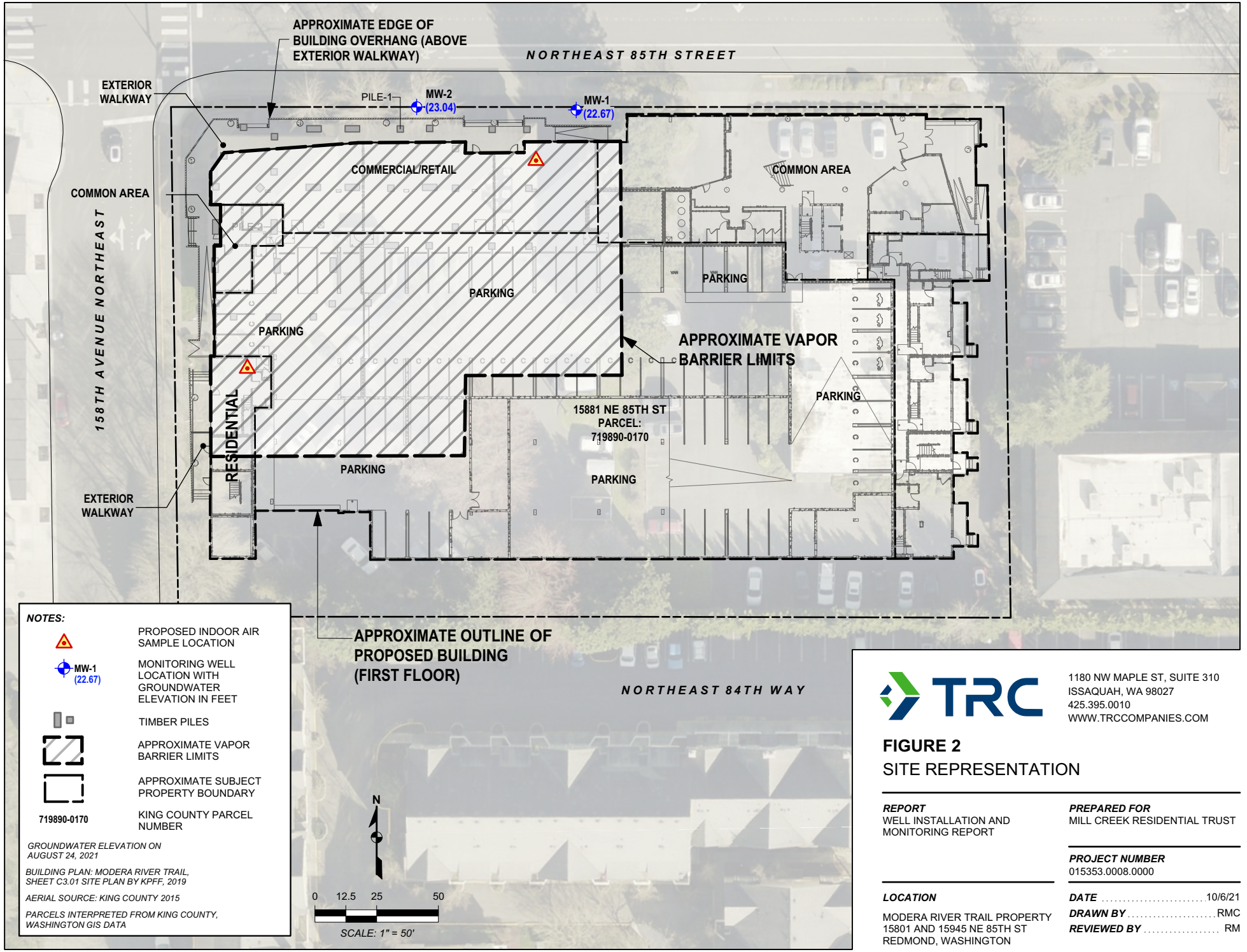
REPORT
WELL INSTALLATION AND MONITORING REPORT

PREPARED FOR
MILL CREEK RESIDENTIAL TRUST

PROJECT NUMBER
015353.0008.0000

LOCATION
MODERA RIVER TRAIL PROPERTY
15801 AND 15945 NE 85TH ST
REDMOND, WASHINGTON

DATE 10/6/21
DRAWN BY RMC
REVIEWED BY RM



TRC

1180 NW MAPLE ST, SUITE 310
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FIGURE 2
SITE REPRESENTATION

REPORT
WELL INSTALLATION AND MONITORING REPORT

PREPARED FOR
MILL CREEK RESIDENTIAL TRUST

PROJECT NUMBER
015353.0008.0000

LOCATION
MODERA RIVER TRAIL PROPERTY
15801 AND 15945 NE 85TH ST
REDMOND, WASHINGTON

DATE 10/6/21
DRAWN BY ..... RMC
REVIEWED BY ..... RM

Attachment A
Well Installation Boring Logs

BORING ID: MW-1

SITE ADDRESS: **15801 85th Street NE, Redmond, WA**	CLIENT: **MCRT**	CASING MATERIAL AND SIZE: **2" SCH 40 PVC**
DRILLING CONTRACTOR: **Cascade Drilling**	PROJECT #: **15353**	SCREEN SIZE: **0.010" Slot**
DRILLING EQUIPMENT: **Geoprobe 7822**	DATE: **8/18/2021**	SCREEN INTERVAL: **5-15 ft bgs**
DRILLING METHOD: **Direct Push Technology**	GROUND SURFACE ELEV. FT AMSL: **Not Measured**	FILTER PACK: **Silica Sand**
LOGGED BY: **A. York** / BOREHOLE SIZE: **2.5" OD**	TOTAL DEPTH: **20**	FILTER PACK INTERVAL: **4-15 ft bgs**

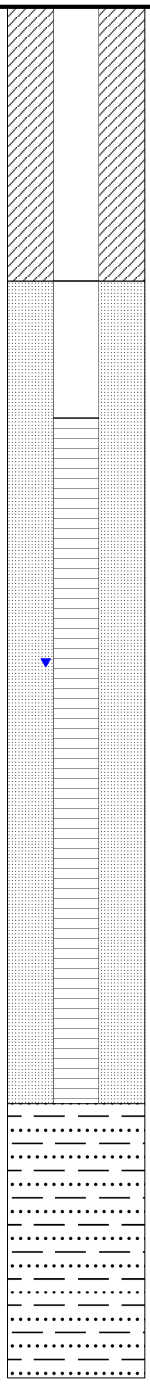
Depth (feet)	USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; TRC description; Other)	Interval & % Recovery	PID (ppm)	Sample	Well Construction
0–4	ML	SILT; light gray; damp; dense; low plasticity.	60	1.0, 4.0		2" Sch. 40 PVC Casing
4–8	ML	Color change to dark reddish brown; medium plasticity.	60	6.0, 8.0	MW-1:8	
8–13	SM	SILTY SAND; reddish brown; moist; medium dense; mostly fine sand with some silt and few gravel.	90	11.0, 14.0		2x12 Silica Sand Filter Pack
13–17	SP	POORLY-GRADED SAND; grayish brown; wet; medium dense; mostly fine to medium sand with trace silt.	100	16.0, 19.0	MW-1:15	0.010" Slot Screen
17–19	SM	SILTY SAND; grayish brown; wet; medium dense; mostly fine sand with some silt.				
19–20	GM	SILTY GRAVEL WITH SAND; grayish brown; wet; medium dense; mostly gravel with some silt and fine to coarse sand.		20.0		

NOTES: MW-1 terminated at 20 ft bgs.

BORING ID: MW-2

SITE ADDRESS: **15801 85th Street NE, Redmond, WA**	CLIENT: **MCRT**	CASING MATERIAL AND SIZE: **2" SCH 40 PVC**
DRILLING CONTRACTOR: **Cascade Drilling**	PROJECT #: **15353**	SCREEN SIZE: **0.010" Slot**
DRILLING EQUIPMENT: **Geoprobe 7822**	DATE: **8/18/2021**	SCREEN INTERVAL: **6-16 ft bgs**
DRILLING METHOD: **Direct Push Technology**	GROUND SURFACE ELEV. FT AMSL: **Not Measured**	FILTER PACK: **Silica Sand**
LOGGED BY: **A. York** / BOREHOLE SIZE: **2.5" OD**	TOTAL DEPTH: **20**	FILTER PACK INTERVAL: **4-16 ft bgs**

Depth (feet)	USCS	Description (USCS name; Color; Moisture; Density; Plasticity; Dilatency; TRC description; Other)	Interval & % Recovery	PID (ppm)	Sample
0	ML	SILT; light gray; damp; dense; low plasticity.	60	1.0	
4	ML	Color change to grayish brown; low plasticity.		4.0	
8	SP	POORLY-GRADED SAND; grayish brown; wet; medium dense; mostly fine sand with trace silt.	60	6.0	MW-2:8
13	SW	WELL-GRADED SAND; brown; damp; loose; mostly fine to coarse sand with few gravel.	40	11.0	
17	SM	SILTY SAND; grayish brown; wet; medium dense; mostly fine sand with some silt.	80	14.0	MW-2:15
19	GM	SILTY GRAVEL WITH SAND; grayish brown; wet; medium dense; mostly gravel with some silt and fine to coarse sand.		16.0	
20				19.0	
				20.0	



NOTES: MW-2 terminated at 20 ft bgs.

Attachment B
Laboratory Analytical Reports

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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August 25, 2021

Ramsey Mauldin, Project Manager
TRC Environmental
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: MCRT Redmond 015353, F&BI 108320

Dear Mr Mauldin:

Included are the results from the testing of material submitted on August 20, 2021 from the MCRT Redmond 015353, F&BI 108320 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 have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Cynthia Moon
TRC0825R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 20, 2021 by Friedman & Bruya, Inc. from the TRC Environmental MCRT Redmond 015353, F&BI 108320 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	TRC Environmental
108320-01	MW-1:8
108320-02	MW-1:15
108320-03	MW-2:8
108320-04	MW-2:15

All quality control requirements were acceptable.

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-1:8	Client:	TRC Environmental
Date Received:	08/20/21	Project:	MCRT Redmond 015353
Date Extracted:	08/20/21	Lab ID:	108320-01 1/5
Date Analyzed:	08/20/21	Data File:	082007.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	77	39	103
Phenol-d6	82	48	109
Nitrobenzene-d5	81	23	138
2-Fluorobiphenyl	87	50	150
2,4,6-Tribromophenol	103	40	127
Terphenyl-d14	98	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-1:15	Client:	TRC Environmental
Date Received:	08/20/21	Project:	MCRT Redmond 015353
Date Extracted:	08/20/21	Lab ID:	108320-02 1/5
Date Analyzed:	08/20/21	Data File:	082008.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	79	39	103
Phenol-d6	85	48	109
Nitrobenzene-d5	82	23	138
2-Fluorobiphenyl	88	50	150
2,4,6-Tribromophenol	108	40	127
Terphenyl-d14	104	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-2:8	Client:	TRC Environmental
Date Received:	08/20/21	Project:	MCRT Redmond 015353
Date Extracted:	08/20/21	Lab ID:	108320-03 1/5
Date Analyzed:	08/20/21	Data File:	082009.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	77	39	103
Phenol-d6	81	48	109
Nitrobenzene-d5	81	23	138
2-Fluorobiphenyl	88	50	150
2,4,6-Tribromophenol	104	40	127
Terphenyl-d14	100	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-2:15	Client:	TRC Environmental
Date Received:	08/20/21	Project:	MCRT Redmond 015353
Date Extracted:	08/20/21	Lab ID:	108320-04 1/5
Date Analyzed:	08/20/21	Data File:	082010.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	82	39	103
Phenol-d6	85	48	109
Nitrobenzene-d5	82	23	138
2-Fluorobiphenyl	89	50	150
2,4,6-Tribromophenol	105	40	127
Terphenyl-d14	99	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	TRC Environmental
Date Received:	Not Applicable	Project:	MCRT Redmond 015353
Date Extracted:	08/20/21	Lab ID:	01-1898 mb 1/5
Date Analyzed:	08/20/21	Data File:	082006.D
Matrix:	Soil	Instrument:	GCMS12
Units:	mg/kg (ppm) Dry Weight	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	88	39	103
Phenol-d6	92	48	109
Nitrobenzene-d5	88	23	138
2-Fluorobiphenyl	97	50	150
2,4,6-Tribromophenol	104	40	127
Terphenyl-d14	113	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Date of Report: 08/25/21
Date Received: 08/20/21
Project: MCRT Redmond 015353, F&BI 108320

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 108320-02 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	77	73	50-150	5
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	80	78	50-150	3
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	80	78	50-150	3
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	89	88	50-150	1
Chrysene	mg/kg (ppm)	0.83	<0.01	91	89	50-150	2
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	92	89	50-150	3
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	113	93	50-150	19
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	96	94	50-150	2
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	96	87	50-150	10
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	99	92	50-150	7

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	80	61-102
2-Methylnaphthalene	mg/kg (ppm)	0.83	82	62-108
1-Methylnaphthalene	mg/kg (ppm)	0.83	82	62-108
Benz(a)anthracene	mg/kg (ppm)	0.83	87	64-116
Chrysene	mg/kg (ppm)	0.83	90	66-119
Benzo(a)pyrene	mg/kg (ppm)	0.83	86	62-116
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	106	61-118
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	89	65-119
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	117	64-130
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	100	67-131

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.

108320

SAMPLE CHAIN OF CUSTODY

ME 08/20/21

D02

Page # 1 of 1

Report To Ramsey Mauldin

Company TRC

Address 1180 NW Maple St. Suite 310

City, State, ZIP Issaquah, WA 98027

Phone 206-940-9050 Email Rmauldin@trccompanies.com

SAMPLERS (*signature*)

PROJECT NAME: MCRT Redmond

PO #: 915353

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- ☑ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	cPAHs EPA 8270D	PCBs EPA 8082	naphthalene EPA 8260D				Notes
MW-1:8	01 A⇒B	8-18-21	0930	Soil	2						X		X				
MW-1:15	02	8.18.21	0936	Soil	2						X		X				
MW-2:8	03	8/18/21	1315	Soil	2						X		X				
MW-2:15	04	8/18/21	1320	Soil	2						X		X				
																	Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Austin York	TRC	8-19-21	1230
Received by:	Michael Eschl	FCBa	8/20/21	0630
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

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 1, 2021

Ramsey Mauldin, Project Manager
TRC Environmental
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 015353.8 MCRT Redmond, F&BI 108383

Dear Mr Mauldin:

Included are the results from the testing of material submitted on August 25, 2021 from the 015353.8 MCRT Redmond, F&BI 108383 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 have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Cynthia Moon
TRC0901R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 25, 2021 by Friedman & Bruya, Inc. from the TRC Environmental 015353.8 MCRT Redmond, F&BI 108383 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	TRC Environmental
108383-01	MW-1
108383-02	MW-2

All quality control requirements were acceptable.

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-1	Client:	TRC Environmental
Date Received:	08/25/21	Project:	015353.8, F&BI 108383
Date Extracted:	08/27/21	Lab ID:	108383-01 1/2
Date Analyzed:	08/27/21	Data File:	082718.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	32	10	60
Phenol-d6	28	10	49
Nitrobenzene-d5	80	15	144
2-Fluorobiphenyl	77	25	128
2,4,6-Tribromophenol	68	10	142
Terphenyl-d14	90	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
2-Methylnaphthalene	<0.4
1-Methylnaphthalene	<0.4
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-2	Client:	TRC Environmental
Date Received:	08/25/21	Project:	015353.8, F&BI 108383
Date Extracted:	08/27/21	Lab ID:	108383-02 1/2
Date Analyzed:	08/27/21	Data File:	082719.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	31	10	60
Phenol-d6	26	10	49
Nitrobenzene-d5	77	15	144
2-Fluorobiphenyl	72	25	128
2,4,6-Tribromophenol	67	10	142
Terphenyl-d14	90	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
2-Methylnaphthalene	<0.4
1-Methylnaphthalene	<0.4
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	TRC Environmental
Date Received:	Not Applicable	Project:	015353.8, F&BI 108383
Date Extracted:	08/27/21	Lab ID:	01-2035 mb2 1/2
Date Analyzed:	08/27/21	Data File:	082708.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	27	10	60
Phenol-d6	15	10	49
Nitrobenzene-d5	88	15	144
2-Fluorobiphenyl	77	25	128
2,4,6-Tribromophenol	79	10	142
Terphenyl-d14	96	41	138

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
2-Methylnaphthalene	<0.4
1-Methylnaphthalene	<0.4
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Date of Report: 09/01/21
Date Received: 08/25/21
Project: 015353.8 MCRT Redmond, F&BI 108383

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: Laboratory Control Sample 1/0.5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	78	79	66-94	1
2-Methylnaphthalene	ug/L (ppb)	5	81	84	68-98	4
1-Methylnaphthalene	ug/L (ppb)	5	79	82	67-97	4
Benz(a)anthracene	ug/L (ppb)	5	88	89	70-130	1
Chrysene	ug/L (ppb)	5	89	88	70-130	1
Benzo(a)pyrene	ug/L (ppb)	5	89	90	70-130	1
Benzo(b)fluoranthene	ug/L (ppb)	5	91	94	62-130	3
Benzo(k)fluoranthene	ug/L (ppb)	5	89	90	70-130	1
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	99	92	70-130	7
Dibenz(a,h)anthracene	ug/L (ppb)	5	98	94	70-130	4

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.

108383

SAMPLE CHAIN OF CUSTODY

ME 8/25/21

E03

Page # 1 of 1

Report To Ramsey Mauldin

Company TRC

Address 11430 NW Maple St Suite 310

City, State, ZIP Issaquah, WA

Phone 425-395-0010 Email rmauldin@trcompanies.com

SAMPLERS (*signature*) Ramsey Mauldin

PROJECT NAME: 015353.8 MCRT REDMOND

PO #:

REMARKS: Project specific RLs? - Yes / No

INVOICE TO:

TURNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	cPAHs 8270	Naphthalenes 8270			Notes
MW-1	01	8-24-21	0925	WATER	1								X	X			
MW-2	02	↓	1000	↓	↓								X	X			

Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Ramsey Mauldin	Ramsey Mauldin	TRC	8-25-21	0630
Received by:	Michael Edith	F&B	8/25/21	0630
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282