



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1801214

Report Created for: Patrick Roddie

1935 Franklin Street #603
San Francisco, CA 94109

Project Contact: Patrick Roddie

Project P.O.:

Project: SF Rain 1-3-18

Project Received: 01/04/2018

Analytical Report reviewed & approved for release on 01/11/2018 by:

Yen Cao

Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: Patrick Roddie
Project: SF Rain 1-3-18
WorkOrder: 1801214

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

Analytical Qualifiers

J Result is less than the RL/ML but greater than the MDL. The reported concentration is an estimated value.



Glossary of Terms & Qualifier Definitions

Client: Patrick Roddie
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Quality Control Qualifiers

F10 MS/MSD outside control limits. Physical or chemical interferences exist due to sample matrix.

F11 DLT outside control limits. Physical or chemical interferences exist due to sample matrix. Sample results may be estimates.

F13 Indigenous sample results too high for a representative matrix spike analysis.



Analytical Report

Client: Patrick Roddie
Date Received: 1/4/18 19:20
Date Prepared: 1/4/18
Project: SF Rain 1-3-18

WorkOrder: 1801214
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L

Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
San Francisco	1801214-001A	Water	01/03/2018 18:30	ICP-MS1 137SMPL.D	151214

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Aluminum	220	14	50	1	01/06/2018 00:17
Barium	21	1.1	5.0	1	01/06/2018 00:17
Iron	300	4.4	20	1	01/06/2018 00:17
Titanium	16	0.13	0.50	1	01/06/2018 00:17

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	<u>Date Analyzed</u>
Terbium	104	70-130	01/06/2018 00:17

Analyst(s): ND



Quality Control Report

Client: Patrick Roddie
Date Prepared: 1/4/18
Date Analyzed: 1/5/18 - 1/8/18
Instrument: ICP-MS1
Matrix: Water
Project: SF Rain 1-3-18

WorkOrder: 1801214
BatchID: 151214
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L
Sample ID: MB/LCS-151214
 1801208-001AMS/MSD

QC Summary Report for Metals

Analyte	MB Result	LCS Result	MDL	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Aluminum	ND	511	14	50	500	-	102	85-115
Barium	ND	508	1.1	5.0	500	-	102	85-115
Iron	4.866,J	5030	4.4	20	5000	-	101	85-115
Titanium	ND	51.0	0.13	0.50	50	-	102	85-115

Surrogate Recovery

Terbium	780.4	775			750	104	103	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Aluminum	2920	2900	500	2300	130,F13	127,F13	75-125	0.515	20
Barium	590	600	500	78	102	104	75-125	1.61	20
Iron	8620	8740	5000	3600	101	104	75-125	1.46	20
Titanium	155	162	50	96	117	131,F10	75-125	4.30	20

Surrogate Recovery

Terbium	791	804	750		105	107	70-130	1.63	20
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Analyte	DLT Result	DLTRef Val	%D	%D Limit
Aluminum	2450	2300	6.52	20
Barium	82.2	78	5.38	-
Iron	4170	3600	15.8	20
Titanium	149	96	55.2,F11	20

%D Control Limit applied to analytes with concentrations greater than 25 times the reporting limits.



1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

WaterTrax WriteOn EDF

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1801214

ClientCode: PRSF

Excel EQulS Email HardCopy ThirdParty J-flag
 Detection Summary Dry-Weight

Report to:

Patrick Roddie
Patrick Roddie
1935 Franklin Street #603
San Francisco, CA 94109
415 336-4728 FAX:

Email: patrick@webbery.com
cc/3rd Party:
PO:
Project: SF Rain 1-3-18

Bill to:

Accounts Payable
Patrick Roddie
1935 Franklin Street #603
San Francisco, CA 94109

Requested TAT: 5 days;

Date Received: 01/04/2018

Date Logged: 01/04/2018

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1801214-001	San Francisco	Water	1/3/2018 18:30	<input type="checkbox"/>	A												

Test Legend:

1	METALSMS_TTLC_W	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Kena Ponce

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.



WORK ORDER SUMMARY

Client Name: PATRICK RODDIE
Client Contact: Patrick Roddie
Contact's Email: patrick@webbery.com

Project: SF Rain 1-3-18

Work Order: 1801214
QC Level: LEVEL 2
Date Logged: 1/4/2018

Comments:

WaterTrax WriteOn EDF Excel Fax Email HardCopy ThirdParty J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1801214-001A	San Francisco	Water	E200.8 (Metals) <Aluminum, Barium, Iron, Titanium>	1	250mL HDPE w/ HNO3	<input type="checkbox"/>	1/3/2018 18:30	5 days		<input type="checkbox"/>	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).
- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

McCAMPBELL ANALYTICAL, INC.
 1534 Willow Pass Rd. Pittsburg, Ca. 94565-1701
 Telephone: (877) 252-9262 / Fax: (925) 252-9269
 www.mccampbell.com main@mccampbell.com

CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush	2 Day Rush	3 Day Rush	STD	<input checked="" type="checkbox"/>	Quote #
J-Flag / MDL	ESL	Cleanup Approved			Bottle Order #
Delivery Format: PDF	<input checked="" type="checkbox"/>	GeoTracker EDF	EDD	Write On (DW)	EQuIS

Report To: **Patrick Roddie** Bill To: **same - cc on file**

Company:

Email: **patrick@webbery.com**

Alt Email: Tele: **415-336-4728**

Project Name: **SF Rain 1-3-18** Project #:

Project Location: **San Francisco** PO #

Sampler Signature: *[Signature]*

Analysis Requested

SAMPLE ID Location / Field Point	Sampling		#Containers	Matrix	Preservative
	Date	Time			
San Francisco	1-3	6.30pm	1	O	4

ALBATE																					

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate \$250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
Patrick Roddie <i>[Signature]</i>	1-4-18	11:11AM	<i>[Signature]</i>	1/4/18	1920
Noises	1-4-18	1920	<i>[Signature]</i>	1/4/18	1920

Comments / Instructions

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other
 Preservative Code: 1=4°C 2=HCl 3=H₂SO₄ 4=HNO₃ 5=NaOH 6=ZnOAc/NaOH 7=None Temp 4.3 °C Initials _____



Sample Receipt Checklist

Client Name: **Patrick Roddie**
 Project: **SF Rain 1-3-18**

Date and Time Received: **1/4/2018 19:20**
 Date Logged: **1/4/2018**
 Received by: **Kena Ponce**
 Logged by: **Kena Ponce**

WorkOrder No: **1801214** Matrix: Water
 Carrier: Moises Vasquez (contract courier)

Chain of Custody (COC) Information

- Chain of custody present? Yes No
- Chain of custody signed when relinquished and received? Yes No
- Chain of custody agrees with sample labels? Yes No
- Sample IDs noted by Client on COC? Yes No
- Date and Time of collection noted by Client on COC? Yes No
- Sampler's name noted on COC? Yes No
- COC agrees with Quote? Yes No NA

Sample Receipt Information

- Custody seals intact on shipping container/cooler? Yes No NA
- Shipping container/cooler in good condition? Yes No
- Samples in proper containers/bottles? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No

Sample Preservation and Hold Time (HT) Information

- All samples received within holding time? Yes No NA
- Sample/Temp Blank temperature Temp: 4.3°C NA
- Water - VOA vials have zero headspace / no bubbles? Yes No NA
- Sample labels checked for correct preservation? Yes No
- pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)? Yes No NA
- Samples Received on Ice? Yes No

(Ice Type: WET ICE)

UCMR Samples:

- Total Chlorine tested and acceptable upon receipt for EPA 522? Yes No NA
- Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539? Yes No NA

Comments: