



**CRG**

## Marine Laboratories, Inc.

2020 Del Amo Blvd. Suite 200, Torrance, CA 90501 • (310) 533-5190 • FAX (310) 533-5003 • [mmercier@crglabs.com](mailto:mmercier@crglabs.com)

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November 3, 2004

MACTEC Engineering and Consulting  
9177 Sky Park Court, Suite A  
San Diego, CA 92123

Re: CRG Project ID: P24133  
MACTEC: Rainbow Creek Project

ATTN: Mr. Sean Porter

CRG Laboratories is pleased to provide you with the enclosed analytical data report for your Rainbow Creek Project. According to the chain-of-custody, 2 samples were received intact and cool at CRG on October 13, 2004. Per your instructions, the samples were analyzed for:

- Dissolved Trace Metals By ICPMS Using EPA 200.8
- Ammonia Using SM 4500-NH3 F
- Nitrate-N Using SM 4500-NO3 E
- Nitrite-N Using SM 4500-NO2 B
- Total Dissolved Solids Using SM 2450-C
- Total Hardness as CaCO<sub>3</sub> Using SM 2340-B
- Total & Dissolved Phosphorus Using SM 4500-P C
- Total Suspended Solids Using SM 2540-D
- Turbidity Using EPA Method 180.1

Please don't hesitate to call if you have any questions and thank you very much for using our laboratory for your analytical needs.

Regards,  
Misty B. Mercier  
Project Manager

Reviewed and Approved \_\_\_\_\_

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# **DATA REPORT**

# **TRACE METAL RESULTS**

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## Trace Metals

**Client:** MACTEC

**CRG Project ID:** 24133

<b>CRG ID#:</b> 20411	<b>Sample</b>	STA. 1	Rainbow Valley, CA	<b>Date Sampled:</b>	13-Oct-04	09:50
<b>Replicate #:</b> R1	<b>Description:</b>	Rainbow Creek		<b>Date Received:</b>	13-Oct-04	
<b>Batch ID:</b> 24133-1113	<b>Matrix:</b>	Stormwater		<b>Date Processed:</b>	14-Oct-04	
<b>Instrument:</b> ICPMS #1 HP 4500	<b>Analyst:</b>	P. Hershelman		<b>Date Analyzed:</b>	14-Oct-04	

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Antimony (Sb)	Dissolved	EPA 200.8	E 0.26	µg/L	0.1	0.5	1	NA
Arsenic (As)	Dissolved	EPA 200.8	2.74	µg/L	0.1	0.5	1	NA
Cadmium (Cd)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.2	1	NA
Chromium (Cr)	Dissolved	EPA 200.8	2.47	µg/L	0.1	0.5	1	NA
Copper (Cu)	Dissolved	EPA 200.8	4.4	µg/L	0.1	0.5	1	NA
Lead (Pb)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Nickel (Ni)	Dissolved	EPA 200.8	5.8	µg/L	0.1	0.5	1	NA
Selenium (Se)	Dissolved	EPA 200.8	3.2	µg/L	0.1	0.5	1	NA
Zinc (Zn)	Dissolved	EPA 200.8	10.2	µg/L	0.1	0.5	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261

20411

R1

# CRG Marine Laboratories, Inc.

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## Trace Metals

**Client:** MACTEC

**CRG Project ID:** 24133

<b>CRG ID#:</b> 20412	<b>Sample</b>	STA. 2	Rainbow Valley, CA	<b>Date Sampled:</b>	13-Oct-04	12:00
<b>Replicate #:</b> R1	<b>Description:</b>	Rainbow Creek		<b>Date Received:</b>	13-Oct-04	
<b>Batch ID:</b> 24133-1113	<b>Matrix:</b>	Stormwater		<b>Date Processed:</b>	14-Oct-04	
<b>Instrument:</b> ICPMS #1 HP 4500	<b>Analyst:</b>	P. Hershelman		<b>Date Analyzed:</b>	14-Oct-04	

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Antimony (Sb)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Arsenic (As)	Dissolved	EPA 200.8	1.62	µg/L	0.1	0.5	1	NA
Cadmium (Cd)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.2	1	NA
Chromium (Cr)	Dissolved	EPA 200.8	1.76	µg/L	0.1	0.5	1	NA
Copper (Cu)	Dissolved	EPA 200.8	3.24	µg/L	0.1	0.5	1	NA
Lead (Pb)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Nickel (Ni)	Dissolved	EPA 200.8	2.7	µg/L	0.1	0.5	1	NA
Selenium (Se)	Dissolved	EPA 200.8	3.87	µg/L	0.1	0.5	1	NA
Zinc (Zn)	Dissolved	EPA 200.8	7.43	µg/L	0.1	0.5	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

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20412

R1

# CRG Marine Laboratories, Inc.

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## Trace Metals

**Client:** MACTEC

**CRG Project ID:** 24133

<b>CRG ID#:</b> 20411	<b>Sample</b>	STA. 1	Rainbow Valley, CA	<b>Date Sampled:</b> 13-Oct-04 09:50
<b>Replicate #:</b> R2	<b>Description:</b>	Rainbow Creek		<b>Date Received:</b> 13-Oct-04
<b>Batch ID:</b> 24133-1113	<b>Matrix:</b>	Stormwater		<b>Date Processed:</b> 14-Oct-04
<b>Instrument:</b> ICPMS #1 HP 4500	<b>Analyst:</b>	P. Hershelman		<b>Date Analyzed:</b> 14-Oct-04

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Antimony (Sb)	Dissolved	EPA 200.8	E 0.12	µg/L	0.1	0.5	1	NA
Arsenic (As)	Dissolved	EPA 200.8	2.71	µg/L	0.1	0.5	1	NA
Cadmium (Cd)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.2	1	NA
Chromium (Cr)	Dissolved	EPA 200.8	2.48	µg/L	0.1	0.5	1	NA
Copper (Cu)	Dissolved	EPA 200.8	4.4	µg/L	0.1	0.5	1	NA
Lead (Pb)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Nickel (Ni)	Dissolved	EPA 200.8	5.9	µg/L	0.1	0.5	1	NA
Selenium (Se)	Dissolved	EPA 200.8	3.13	µg/L	0.1	0.5	1	NA
Zinc (Zn)	Dissolved	EPA 200.8	9.81	µg/L	0.1	0.5	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

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20411

R2

# CRG Marine Laboratories, Inc.

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## Trace Metals

**Client:** MACTEC

**CRG Project ID:** 24133

<b>CRG ID#:</b> 20412	<b>Sample</b>	STA. 2	Rainbow Valley, CA	<b>Date Sampled:</b>	13-Oct-04	12:00
<b>Replicate #:</b> R2	<b>Description:</b>	Rainbow Creek		<b>Date Received:</b>	13-Oct-04	
<b>Batch ID:</b> 24133-1113	<b>Matrix:</b>	Stormwater		<b>Date Processed:</b>	14-Oct-04	
<b>Instrument:</b> ICPMS #1 HP 4500	<b>Analyst:</b>	P. Hershelman		<b>Date Analyzed:</b>	14-Oct-04	

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Antimony (Sb)	Dissolved	EPA 200.8	E 0.2	µg/L	0.1	0.5	1	NA
Arsenic (As)	Dissolved	EPA 200.8	1.81	µg/L	0.1	0.5	1	NA
Cadmium (Cd)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.2	1	NA
Chromium (Cr)	Dissolved	EPA 200.8	1.87	µg/L	0.1	0.5	1	NA
Copper (Cu)	Dissolved	EPA 200.8	3.34	µg/L	0.1	0.5	1	NA
Lead (Pb)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Nickel (Ni)	Dissolved	EPA 200.8	2.74	µg/L	0.1	0.5	1	NA
Selenium (Se)	Dissolved	EPA 200.8	4.64	µg/L	0.1	0.5	1	NA
Zinc (Zn)	Dissolved	EPA 200.8	6.91	µg/L	0.1	0.5	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

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R2

# **GENERAL CHEMISTRY RESULTS**



# CRG Marine Laboratories, Inc.

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## General Chemistry

**Client:** MACTEC

**CRG Project ID:** 24133

<b>CRG ID#:</b> 20411	<b>Sample</b>	STA. 1	Rainbow Valley, CA	<b>Date Sampled:</b> 13-Oct-04 09:50
<b>Replicate #:</b> R1	<b>Description:</b>	Rainbow Creek		<b>Date Received:</b> 13-Oct-04
<b>Batch ID:</b> 24133-24133	<b>Matrix:</b>	Stormwater		<b>Date Processed:</b> 15-Oct-04
<b>Instrument:</b>	<b>Analyst:</b>	C.Raubach		<b>Date Analyzed:</b> 15-Oct-04

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Ammonia-N	Total	SM 4500-NH3 F	ND	mg/L	0.01	0.05	1	NA
Nitrate-N	Total	SM 4500-NO3	8	mg/L	0.02	0.05	1	NA
Nitrite-N	Total	SM 4500-NO2 B	E 0.02	mg/L	0.02	0.05	1	NA
Total Dissolved Solids	Dissolved	SM 2450-C	1650	mg/L	0.1	0.2	1	NA
Total Hardness as CaCO3	Dissolved	SM 2340-B	780	mg/L	1	5	1	NA
Total Phosphorus	Dissolved	SM 4500-P C	1.81	mg/L	0.016	0.05	1	NA
Total Phosphorus	Total	SM 4500-P C	ND	mg/L	0.016	0.05	1	NA
Total Suspended Solids	Total	SM 2540-D	E 0.13	mg/L	0.1	0.5	1	NA
Turbidity	Total	EPA 180.1	ND	NTU	1	2	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261

20411 R1

# CRG Marine Laboratories, Inc.

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## General Chemistry

**Client:** MACTEC

**CRG Project ID:** 24133

<b>CRG ID#:</b> 20412	<b>Sample</b>	STA. 2	Rainbow Valley, CA	<b>Date Sampled:</b> 13-Oct-04 12:00
<b>Replicate #:</b> R1	<b>Description:</b>	Rainbow Creek		<b>Date Received:</b> 13-Oct-04
<b>Batch ID:</b> 24133-24133	<b>Matrix:</b>	Stormwater		<b>Date Processed:</b> 15-Oct-04
<b>Instrument:</b>	<b>Analyst:</b>	C.Raubach		<b>Date Analyzed:</b> 15-Oct-04

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Ammonia-N	Total	SM 4500-NH3 F	ND	mg/L	0.01	0.05	1	NA
Nitrate-N	Total	SM 4500-NO3	4	mg/L	0.02	0.05	1	NA
Nitrite-N	Total	SM 4500-NO2 B	ND	mg/L	0.02	0.05	1	NA
Total Dissolved Solids	Dissolved	SM 2450-C	1253	mg/L	0.1	0.2	1	NA
Total Hardness as CaCO3	Dissolved	SM 2340-B	821	mg/L	1	5	1	NA
Total Phosphorus	Total	SM 4500-P C	ND	mg/L	0.016	0.05	1	NA
Total Phosphorus	Dissolved	SM 4500-P C	0.71	mg/L	0.016	0.05	1	NA
Total Suspended Solids	Total	SM 2540-D	7.75	mg/L	0.1	0.5	1	NA
Turbidity	Total	EPA 180.1	ND	NTU	1	2	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

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20412

R1

# CRG Marine Laboratories, Inc.

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## General Chemistry

**Client:** **MACTEC**

**CRG Project ID:** **24133**

<b>CRG ID#:</b> 20411	<b>Sample</b>	STA. 1	Rainbow Valley, CA	<b>Date Sampled:</b> 13-Oct-04 09:50
<b>Replicate #:</b> R2	<b>Description:</b>	Rainbow Creek		<b>Date Received:</b> 13-Oct-04
<b>Batch ID:</b> 24133-1113	<b>Matrix:</b>	Stormwater		<b>Date Processed:</b> 14-Oct-04
<b>Instrument:</b>	<b>Analyst:</b>	P. Hershelman		<b>Date Analyzed:</b> 14-Oct-04

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Total Hardness as CaCO3	Dissolved	SM 2340-B	788	mg/L	1	5	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

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20411 R2

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## General Chemistry

**Client:** **MACTEC**

**CRG Project ID:** **24133**

<b>CRG ID#:</b> 20412	<b>Sample</b>	STA. 2	Rainbow Valley, CA	<b>Date Sampled:</b>	13-Oct-04	12:00
<b>Replicate #:</b> R2	<b>Description:</b>	Rainbow Creek		<b>Date Received:</b>	13-Oct-04	
<b>Batch ID:</b> 24133-24133	<b>Matrix:</b>	Stormwater		<b>Date Processed:</b>	19-Oct-04	
<b>Instrument:</b>	<b>Analyst:</b>	C.Raubach		<b>Date Analyzed:</b>	19-Oct-04	

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Total Dissolved Solids	Dissolved	SM 2450-C	1250	mg/L	0.1	0.2	1	NA
Total Hardness as CaCO3	Dissolved	SM 2340-B	830	mg/L	1	5	1	NA
Total Suspended Solids	Total	SM 2540-D	12.5	mg/L	0.1	0.5	1	NA
Turbidity	Total	EPA 180.1	ND	NTU	1	2	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261

20412

R2

# **QUALITY CONTROL REPORT**

## **PROCEDURAL BLANK RESULTS**

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## Trace Metals

**Client:** MACTEC

**CRG Project ID:** 24133

**CRG ID#:** 20410

**Sample** QAQC

Procedural Blank

**Date Sampled:**

**Replicate #:** B1

**Description:**

**Date Received:**

**Batch ID:** 24133-1113

**Matrix:** DI Water

**Date Processed:** 14-Oct-04

**Instrument:** ICPMS #1 HP 4500

**Analyst:** P. Hershelman

**Date Analyzed:** 14-Oct-04

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Antimony (Sb)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Arsenic (As)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Cadmium (Cd)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.2	1	NA
Chromium (Cr)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Copper (Cu)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Lead (Pb)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Nickel (Ni)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Selenium (Se)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Zinc (Zn)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261

20410

B1

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## General Chemistry

**Client:** MACTEC

**CRG Project ID:** 24133

**CRG ID#:** 20410

**Replicate #:** B1

**Batch ID:** 24133-24133

**Instrument:**

**Sample** QAQC

**Description:**

Procedural Blank

**Matrix:** DI Water

**Analyst:** C.Raubach

**Date Sampled:**

**Date Received:**

**Date Processed:** 15-Oct-04

**Date Analyzed:** 15-Oct-04

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Ammonia-N	Total	SM 4500-NH3 F	ND	mg/L	0.01	0.05	1	NA
Nitrate-N	Total	SM 4500-NO3	ND	mg/L	0.02	0.05	1	NA
Nitrite-N	Total	SM 4500-NO2 B	ND	mg/L	0.02	0.05	1	NA
Total Dissolved Solids	Dissolved	SM 2450-C	ND	mg/L	0.1	0.2	1	NA
Total Hardness as CaCO3	Dissolved	SM 2340-B	ND	mg/L	1	5	1	NA
Total Phosphorus	Dissolved	SM 4500-P C	ND	mg/L	0.016	0.05	1	NA
Total Phosphorus	Total	SM 4500-P C	ND	mg/L	0.016	0.05	1	NA
Total Suspended Solids	Total	SM 2540-D	ND	mg/L	0.1	0.5	1	NA
Turbidity	Total	EPA 180.1	ND	NTU	1	2	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

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20410

B1



# **ACCURACY DATA**

# CRG Marine Laboratories, Inc.

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## General Chemistry

**Client:** **MACTEC**

**CRG Project ID:** **24133**

**CRG ID#:** 20410

**Sample** QAQC

Procedural Blank

**Date Sampled:**

**Replicate #:** BS1

**Description:**

**Date Received:**

**Batch ID:** 24133-24133

**Matrix:** DI Water

**Date Processed:** 15-Oct-04

**Instrument:**

**Analyst:** C.Raubach

**Date Analyzed:** 15-Oct-04

CONSTITUENT	METHOD	% RECOVERY	TRUE VALUE	ACCEPTANCE RANGE	COMMENT
Ammonia-N	SM 4500-NH3 F	104	0.25 mg/L	70 - 130%	PASS
Nitrate-N	SM 4500-NO3	96	0.25 mg/L	70 - 130%	PASS
Nitrite-N	SM 4500-NO2 B	86	0.1 mg/L	70 - 130%	PASS
Total Phosphorus	SM 4500-P C	100	25 mg/L	70 - 130%	PASS
Total Phosphorus	SM 4500-P C	87	0.5 mg/L	70 - 130%	PASS

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261

20410

BS1

# CRG Marine Laboratories, Inc.

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## General Chemistry

**Client:** **MACTEC**

**CRG Project ID:** **24133**

**CRG ID#:** 20410

**Sample** QAQC

Procedural Blank

**Date Sampled:**

**Replicate #:** BS2

**Description:**

**Date Received:**

**Batch ID:** 24133-24133

**Matrix:** DI Water

**Date Processed:** 15-Oct-04

**Instrument:**

**Analyst:** C.Raubach

**Date Analyzed:** 15-Oct-04

CONSTITUENT	METHOD	% RECOVERY	TRUE VALUE	ACCEPTANCE RANGE	COMMENT
Ammonia-N	SM 4500-NH3 F	100	0.25 mg/L	70 - 130%	PASS
Nitrate-N	SM 4500-NO3	88	0.25 mg/L	70 - 130%	PASS
Nitrite-N	SM 4500-NO2 B	87	0.1 mg/L	70 - 130%	PASS
Total Phosphorus	SM 4500-P C	95	25 mg/L	70 - 130%	PASS
Total Phosphorus	SM 4500-P C	84	0.5 mg/L	70 - 130%	PASS

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

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20410

BS2

# CRG Marine Laboratories, Inc.

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## General Chemistry

**Client:** **MACTEC**

**CRG Project ID:** **24133**

**CRG ID#:** **20412**

**Sample** STA. 2

Rainbow Valley, CA

**Date Sampled:** 13-Oct-04 12:00

**Replicate #:** MS1

**Description:** Rainbow Creek

**Date Received:** 13-Oct-04

**Batch ID:** 24133-24133

**Matrix:** Stormwater

**Date Processed:** 14-Oct-04

**Instrument:**

**Analyst:** C.Raubach

**Date Analyzed:** 14-Oct-04

CONSTITUENT	METHOD	% RECOVERY	TRUE VALUE	ACCEPTANCE RANGE	COMMENT
Nitrite-N	SM 4500-NO2 B	90	0.1 mg/L	70 - 130%	PASS

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

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20412 MS1

# CRG Marine Laboratories, Inc.

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## General Chemistry

**Client:** MACTEC

**CRG Project ID:** 24133

**CRG ID#:** 20412

**Sample** STA. 2

Rainbow Valley, CA

**Date Sampled:** 13-Oct-04 12:00

**Replicate #:** MS2

**Description:** Rainbow Creek

**Date Received:** 13-Oct-04

**Batch ID:** 24133-24133

**Matrix:** Stormwater

**Date Processed:** 14-Oct-04

**Instrument:**

**Analyst:** C.Raubach

**Date Analyzed:** 14-Oct-04

CONSTITUENT	METHOD	% RECOVERY	TRUE VALUE	ACCEPTANCE RANGE	COMMENT
Nitrite-N	SM 4500-NO2 B	85	0.1 mg/L	70 - 130%	PASS

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261

20412 MS2

# **PRECISION DATA**

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## Trace Metals

**Client:** **MACTEC**

**CRG Project ID:** **24133**

**CRG ID#:** **20411**

**Sample Description:** STA. 1  
Rainbow Creek

Rainbow Valley, CA

**Date Sampled:** 13-Oct-04 09:50

**Date Received:** 13-Oct-04

**Batch ID:** 24133-1113

**Matrix:** Stormwater

**Date Processed:** 14-Oct-04

**Instrument:** ICPMS #1 HP 4500

**Analyst:** P. Hershelman

**Date Analyzed:** 14-Oct-04

CONSTITUENT	METHOD	R1 µg/L	R2 µg/L	% RPD	ACCEPTANCE RANGE	COMMENT
Antimony (Sb)	EPA 200.8	0.26	0.12	74	0 - 30%	FAIL
Arsenic (As)	EPA 200.8	2.74	2.71	1	0 - 30%	PASS
Chromium (Cr)	EPA 200.8	2.47	2.48	0	0 - 30%	PASS
Copper (Cu)	EPA 200.8	4.4	4.4	0	0 - 30%	PASS
Nickel (Ni)	EPA 200.8	5.8	5.9	2	0 - 30%	PASS
Selenium (Se)	EPA 200.8	3.2	3.13	2	0 - 30%	PASS
Zinc (Zn)	EPA 200.8	10.2	9.81	4	0 - 30%	PASS

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261  
20411

# CRG Marine Laboratories, Inc.

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## Trace Metals

**Client:** **MACTEC**

**CRG Project ID:** **24133**

**CRG ID#:** **20412**

**Sample Description:** STA. 2  
Rainbow Creek

Rainbow Valley, CA

**Date Sampled:** 13-Oct-04 12:00

**Date Received:** 13-Oct-04

**Batch ID:** 24133-1113

**Matrix:** Stormwater

**Date Processed:** 14-Oct-04

**Instrument:** ICPMS #1 HP 4500

**Analyst:** P. Hershelman

**Date Analyzed:** 14-Oct-04

CONSTITUENT	METHOD	R1 µg/L	R2 µg/L	% RPD	ACCEPTANCE RANGE	COMMENT
Arsenic (As)	EPA 200.8	1.62	1.81	11	0 - 30%	PASS
Chromium (Cr)	EPA 200.8	1.76	1.87	6	0 - 30%	PASS
Copper (Cu)	EPA 200.8	3.24	3.34	3	0 - 30%	PASS
Nickel (Ni)	EPA 200.8	2.7	2.74	1	0 - 30%	PASS
Selenium (Se)	EPA 200.8	3.87	4.64	18	0 - 30%	PASS
Zinc (Zn)	EPA 200.8	7.43	6.91	7	0 - 30%	PASS

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261  
20412



# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## General Chemistry

**Client:** *MACTEC*

**CRG Project ID:** **24133**

**CRG ID#:** **20411**

**Sample Description:** STA. 1  
Rainbow Creek

Rainbow Valley, CA

**Date Sampled:** 13-Oct-04 09:50

**Date Received:** 13-Oct-04

**Batch ID:** 24133-1113

**Matrix:** Stormwater

**Date Processed:** 14-Oct-04

**Instrument:**

**Analyst:** P. Hershelman

**Date Analyzed:** 14-Oct-04

CONSTITUENT	METHOD	R1 mg/L	R2 mg/L	% RPD	ACCEPTANCE RANGE	COMMENT
Total Hardness as CaCO3	SM 2340-B	780	788	1	0 - 30%	PASS

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261  
20411

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## General Chemistry

**Client:** **MACTEC**

**CRG Project ID:** **24133**

**CRG ID#:** **20412**

**Sample Description:** STA. 2  
Rainbow Creek

Rainbow Valley, CA

**Date Sampled:** 13-Oct-04 12:00

**Date Received:** 13-Oct-04

**Batch ID:** 24133-24133

**Matrix:** Stormwater

**Date Processed:** 19-Oct-04

**Instrument:**

**Analyst:** C.Raubach

**Date Analyzed:** 19-Oct-04

CONSTITUENT	METHOD	R1 mg/L	R2 mg/L	% RPD	ACCEPTANCE RANGE	COMMENT
Total Dissolved Solids	SM 2450-C	1253	1250	0	0 - 30%	PASS
Total Hardness as CaCO3	SM 2340-B	821	830	1	0 - 30%	PASS
Total Suspended Solids	SM 2540-D	7.75	12.5	47	0 - 30%	FAIL

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261  
20412

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## General Chemistry

**Client:** **MACTEC**

**CRG Project ID:** **24133**

**CRG ID#:** **20410**

**Sample  
Description:**

QAQC

Procedural Blank

**Date Sampled:**

**Date Received:**

**Batch ID:** 24133-24133

**Matrix:**

DI Water

**Date Processed:** 15-Oct-04

**Instrument:**

**Analyst:**

C.Raubach

**Date Analyzed:** 15-Oct-04

CONSTITUENT	METHOD	BS1 % Recovery	BS2 % Recovery	% RPD	ACCEPTANCE RANGE	COMMENT
Ammonia-N	SM 4500-NH3 F	104	100	4	0 - 30%	PASS
Nitrate-N	SM 4500-NO3	96	88	9	0 - 30%	PASS
Nitrite-N	SM 4500-NO2 B	86	87	1	0 - 30%	PASS
Total Phosphorus	SM 4500-P C	100	95	5	0 - 30%	PASS
Total Phosphorus	SM 4500-P C	100	84	17	0 - 30%	PASS
Total Phosphorus	SM 4500-P C	87	95	9	0 - 30%	PASS
Total Phosphorus	SM 4500-P C	87	84	4	0 - 30%	PASS

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261  
20410

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## General Chemistry

**Client:** **MACTEC**

**CRG Project ID:** **24133**

<b>CRG ID#:</b> 20412	<b>Sample Description:</b> STA. 2 Rainbow Creek	Rainbow Valley, CA	<b>Date Sampled:</b> 13-Oct-04 12:00
<b>Batch ID:</b> 24133-24133	<b>Matrix:</b> Stormwater		<b>Date Received:</b> 13-Oct-04
<b>Instrument:</b>	<b>Analyst:</b> C.Raubach		<b>Date Processed:</b> 14-Oct-04
			<b>Date Analyzed:</b> 14-Oct-04

CONSTITUENT	METHOD	MS1 % Recovery	MS2 % Recovery	% RPD	ACCEPTANCE RANGE	COMMENT
Nitrite-N	SM 4500-NO2 B	90	85	6	0 - 30%	PASS

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261  
20412

# **SUB-CONTRACT LAB DATA**

# **CHAIN OF CUSTODY**



P24133

SEE ATTACHMENT  
FOR EPA METHODS

[illegible]

## Section A - Statement Of Work And Submittal Documents

P24133

Table 1. Analytical requirements for Samples Collected from Mass Loading Stations

Constituent	Volume Required	Method	Reporting Limit	Units	Max Holding Time
<b>General Physical and Inorganic Non-Metals</b>					
Total Dissolved Solids (TDS)	100 ml	SM 2540C	20	mg/l	7D
Total Suspended Solids (TSS)	100 ml	SM2540D	20	mg/l	7D
Turbidity	100 ml	SM 2130A-B	0.1	NTU	48H
Total Hardness	150 ml	SM 2340B	10	mg/l	6M
PH	In field	EPA 150.1	0.1	S.U.	
Specific Conductance	In field	SM 2510B	1	umho/s/cm	
Temperature	In field				
Dissolved Phosphorus	250 ml	SM 4500PE	0.05	mg/l	48H
Total Phosphorus	250 ml	SM 4500PE	0.05	mg/l	28D
Nitrate and Nitrite	200 ml	SM4500NO2-NO3	0.1/0.05	mg/l	48H
Total Kjeldahl Nitrogen (TKN)	500 ml	SM4500C	0.1	mg/l	28D
Ammonia	250 ml	SM 4500NH3D	0.1	mg/l	28D
Biological Oxygen Demand, 5-day (BOD)	1000 ml	SM5210B	2	mg/l	48H
<b>Metals, Dissolved</b>					
Antimony (Sb)	75 ml	EPA 200.8	0.002	mg/l	6M
Arsenic (As)	75 ml	EPA 200.8	0.001	mg/l	6M
Cadmium (Cd)	75 ml	EPA 200.8	0.001	mg/l	6M
Chromium (Cr)	75 ml	EPA 200.8	0.005	mg/l	6M
Copper (Cu)	75 ml	EPA 200.8	0.005	mg/l	6M
Lead (Pb)	75 ml	EPA 200.8	0.002	mg/l	6M
Nickel (Ni)	75 ml	EPA 200.8	0.002	mg/l	6M
Selenium (Se)	75 ml	EPA 200.8	0.002	mg/l	6M
Zinc (Zn)	75 ml	EPA 200.8	0.02	mg/l	6M



**CRG**

Marine Laboratories, Inc.

**SAMPLE RECEIPT FORM**COOLER 1 OF 1

CRG Project ID:

P24133

CLIENT

NAME: MACTEC

DATE

RECEIVED: 10/13/04**TEMPERATURE**6

°C

- ☐ BLUE ICE  
☒ WET ICE  
☐ NONE USED

**COC**

- ☐ NOT INCLUDED  
☒ INCLUDED  
☒ SIGNED

**SAMPLE MATRIX**

- ☒ LIQUID  
☐ SOLID  
☐ OTHER\*

**CONDITION OF SAMPLES UPON ARRIVAL**

	<u>YES</u>	<u>NO</u>	<u>NA</u>
All sample containers intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All samples listed on COC present.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample ID on containers consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Correct containers used for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All samples received within analysis holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**\*COMMENTS**

COMPLETED BY

AI

INITIALS