ANCHOR QEA

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MEMORANDUM

To:	Robert Stein, Ph.D., Assistant City Engineer; Chris Miller, Harbor Resources Manager; and Dave Webb, Public Works Director, City of Newport Beach	**Date:**	March 25, 2016
From:	Shelly Anghera, Ph.D., and Chris Osuch, Anchor QEA, LLC	**Project:**	160243-01.01
Re:	Newport Bay Copper Study: Winter 2016		

In 1996, Newport Bay (the Bay) was listed on the Clean Water Act Section 303(d) List for metals, pesticides, and organic pollutants. A total maximum daily load (TMDL) for metals is currently required for dissolved copper, lead, and zinc in the Upper and Lower Bay as well as the Rhine Channel. The TMDL is being updated to include an implementation plan requiring the conversion of 87% of the boats to non-copper-based paints to address water quality concerns for dissolved copper in the Bay. Numeric targets for metals in the Bay are adopted from the California Toxics Rule (CTR). The CTR chronic target for dissolved copper for saltwater is 3.1 micrograms per liter (µg/L). Previous investigations within the Bay have identified elevated copper concentrations in water from boat paint.

SURVEY OF COPPER WITHIN NEWPORT BAY

In June 2015, Anchor QEA, LLC, designed a sampling plan whereby water samples were collected from 40 discrete locations that were randomly selected from within the sampling extent presented in Figure 1 (Anchor QEA 2015). Collecting water samples from randomly generated locations enables the establishment of a general condition of copper concentration throughout the Bay with a high degree of objectivity. Results of the June 2015 study showed water quality exceedances for copper in portions of the harbor (Anchor QEA 2015).

In February 2016, the study was repeated to further evaluate dissolved copper patterns throughout the harbor. This study includes monitoring at the same 40 locations to assess the general dissolved copper conditions in the Bay.

FOCUSED BOAT HULL INFLUENCE

In addition to the 40 previous monitoring locations, 14 new targeted locations at specific distances from around two specified vessels were sampled. The goal of this sampling was to assess the movement of copper away from the hull of the vessel, both upcurrent and downcurrent. These two vessels have recently applied copper-based antifouling paint that represents potential sources of copper to the water column. The two moorings selected are located on the edge of a mooring field in an area of unrestricted circulation.

METHODS

Survey of Copper within Newport Bay: Sampling Design Method

ArcGIS 10.2 geographic information systems (GIS) software was used to delineate the sample extent area and generate the random sample locations from which water samples were collected for copper analysis. The generation of the random sample locations was accomplished using the *Create Random Points* tool within ArcGIS's ArcToolbox module (Esri 2015), following methods described in the June 2015 study report (Anchor QEA 2015). A total of 40 randomly generated stations were designated for sampling throughout the Bay. Sampling locations are shown in Figure 1.

Focused Boat Hull Influence: Sampling Design Method

Two vessels, located at moorings A-154 and A-124, were selected for an additional 14 sampling locations (Figure 2). These vessels represent potential sources of copper to the water column. Sampling was designed such that these locations were sampled during a slack tide to isolate inputs from a source other than the moored vessel and focus on its input of copper to the Bay. Samples were collected 1 foot below the water's surface at the following locations:

- 0.5, 3, and 10 feet off the stern
- 0.5 and 3 feet off the bow
- 0.5 foot off both the port and starboard sides

This sampling approach was designed to study the distance from the vessel that copper may dilute in the water column.

Field Sample Collection Methods

Water samples were collected for copper and dissolved organic carbon (DOC) analyses using a 6-L Van Dorn bottle oriented horizontally. The Van Dorn bottle was decontaminated prior to sample collection at each station. Samples were collected mid-depth at each station. Water samples were placed in coolers with ice and stored at less than 4 °C until delivery to the appropriate laboratory for analysis. Proper chain-of-custody procedures were followed.

Each sample was analyzed for dissolved copper. Dissolved copper analysis was performed by Eurofins Calscience, Inc. (ECI), located in Garden Grove, California. DOC samples were shipped overnight to Analytical Resources Inc. (ARI), located in Tukwila, Washington. Upon receipt, DOC samples were filtered and preserved for potential analysis following the receipt of dissolved copper results from ECI. Samples with elevated copper concentrations (greater than CTR [3.1 µg/L]) were analyzed for DOC. DOC in the water column provides an indication of the bioavailability of copper that may be toxic to marine life.

RESULTS

Survey of Copper within Newport Bay

The results of chemical analyses for both June 2015 and February 2016 are presented in Table 1 for comparison. Chemical concentrations were compared to CTR water quality criteria. In February 2016, samples were collected on February 10 and February 11, when tide height ranged from 0.3 to 5.0 feet. Copper concentrations during this event ranged from 0.27 to 12.7 µg/L (Figure 3), and DOC concentrations ranged from 1.40 to 2.20 mg/L. In June 2015, samples were collected on June 30 and July 1, when tide height ranged from 2.2 to 3.2 feet. Copper concentrations during this event ranged from 0.3 to 6.4 µg/L. Raw data are provided in the complete chemistry reports (Attachment A).

For ocean conditions, DOC concentrations often range from 0.9 to 1.1 mg/L. The higher the DOC the higher the binding potential of copper to the organics, therefore, making the copper not bioavailable. Models are currently being evaluated by the Environmental Protection Agency to examine the relationship between observed copper concentrations within water that contains a specified concentration of DOC to predict the bioavailable fraction of copper. It is hoped that in the future this method will be available to assess

compliance with the water quality standard through estimation of the bioavailable fraction of copper. These data are provided to allow for that comparison in the future.

Focused Boat Hull Influence

The results of chemical analyses for the February 2016 boat-specific sampling are presented in Table 2. Copper concentrations ranged from 0.374 to 0.962 µg/L for the vessel at mooring A-154 and from 0.509 to 0.743 µg/L for the vessel at mooring A-124. Copper concentrations for specified distances from each vessel are shown in Figure 4.

REFERENCES

Anchor QEA, 2015. *Memorandum: Random Sample Points Methodology*. Newport Bay Copper Sampling in Support of the Newport Bay Metals TMDL. Prepared for the City of Newport Beach. July 2015.

Esri, 2015. ArcGIS Resources, *Create Random Points*. Accessed: June 30, 2015. Available from: http://resources.arcgis.com/en/help/main/10.2/index.html#//00170000002r000000.

TABLES

Table 1
Newport Bay Metals TMDL Water Quality Copper Survey

Sample ID	February 2016				June 2015
	Latitude	Longitude	Copper (µg/L)	DOC (mg/L)	Copper (µg/L)
NB-01-021016	33.60130	-117.88969	0.404	--	1.64
NB-02-021116	33.61462	-117.92666	12.7	2.11	6.4
NB-03-021116	33.61147	-117.90715	1.84	--	2.14
NB-04-021016	33.59432	-117.87975	0.217	--	0.287
NB-05-021116	33.60973	-117.92178	5.42	2.20	5.51
NB-06-021116	33.61071	-117.90928	1.66	--	2.11
NB-07-021116	33.62078	-117.9359	6.53	1.51	5.75
NB-08-021016	33.59997	-117.8054	0.27	--	0.309
NB-09-021116	33.60785	-117.90751	2.17	--	1.89
NB-10-021116	33.60771	-117.90388	1.08	--	2.81
NB-11-021116	33.61181	-117.90389	2.31	--	2.66
NB-12-021116	33.60726	-117.91162	3.05	--	2.64
NB-13-021016	33.60888	-117.88866	1.96	--	3.72
NB-14-021116	33.61638	-117.92596	3.99	2.24	4.65
NB-15-021016	33.60951	-117.89503	3.06	--	4.07
NB-16-021016	33.60288	-117.88488	0.83	--	3.44
NB-17-021016	33.60436	-117.88898	0.441	--	0.739
NB-18-021016	33.61384	-117.90271	2.96	--	3.66
NB-19-021116	33.61382	-117.9153	2.09	--	2.37
NB-20-021116	33.61057	-117.92326	7.54	2.10	5.73
NB-21-021116	33.62030	-117.93366	5.91	2.10	5.2
NB-22-021016	33.60190	-117.88818	0.251	--	2.29
NB-23-021116	33.61758	-117.92582	3.28	2.06	3.36
NB-24-021016	33.62063	-117.90151	1.64	--	3.16
NB-25-021116	33.61208	-117.90498	1.94	--	1.81
NB-26-021016	33.61390	-117.90464	2.82	--	4.99
NB-27-021016	33.59538	-117.88033	0.401	--	0.303
NB-28-021116	33.61351	-117.91273	2.52	--	1.95
NB-29-021116	33.61832	-117.92446	2.81	--	3.02
NB-30-021116	33.61346	-117.90563	1.87	--	2.36
NB-31-021116	33.61961	-117.92598	2.77	--	3.52
NB-32-021016	33.60496	-117.90132	1.54	--	2.6
NB-33-021116	33.60946	-117.9258	8.19	1.54	5.63
NB-34-021016	33.60131	-117.88967	0.491	--	2.26

Sample ID	February 2016				June 2015
	Latitude	Longitude	Copper (µg/L)	DOC (mg/L)	Copper (µg/L)
NB-35-021016	33.60087	-117.88622	0.304	--	0.992
NB-36-021116	33.61055	-117.91897	5.02	1.40	4.13
NB-37-021016	33.60308	-117.89871	1.41	--	1.3
NB-38-021016	33.60670	-117.90240	1.93	--	2.42
NB-39-021016	33.61384	-117.90356	4.86	1.67	4.6
NB-40-021116	33.61697	-117.92274	3.09	--	3.2

Notes:

Detected concentration is greater than California Toxics Rule screening level (3.1 µg/L)

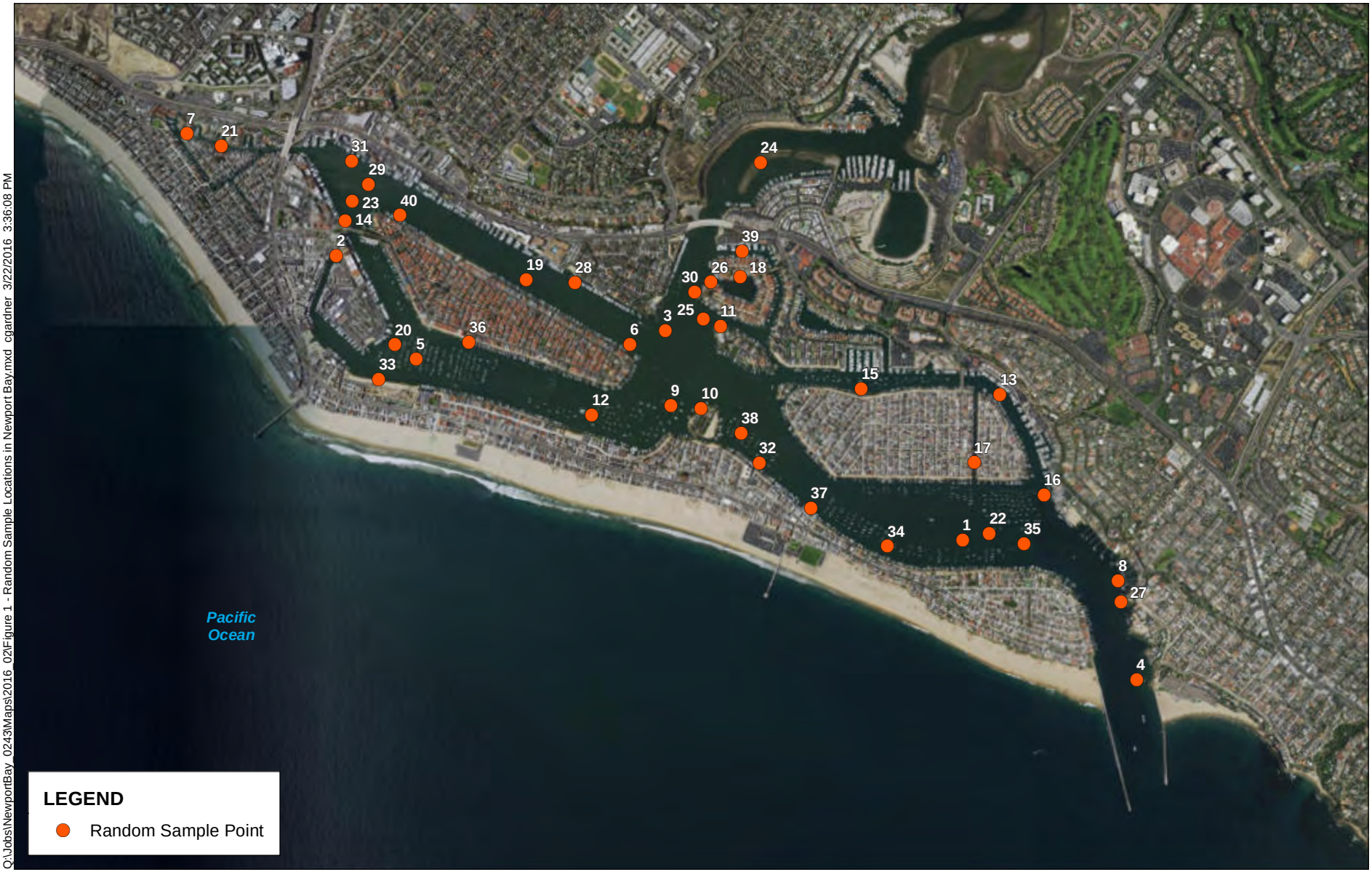
-- Not applicable
µg/L microgram per liter
DOC dissolved organic carbon
mg/L milligram per liter
TMDL total maximum daily load

Table 2
Focused Vessel Study on Moorings A-154 and A-124

Sample ID	Sample Date	Latitude	Longitude	Copper (µg/L)
NB-BL15401-021016	2/10/2016	33.60100	-117.89209	0.567
NB-BL15402-021016	2/10/2016	33.60100	-117.89209	0.374
NB-BL15403-021016	2/10/2016	33.60100	-117.89209	0.504
NB-BL15404-021016	2/10/2016	33.60100	-117.89209	0.81
NB-BL15405-021016	2/10/2016	33.60100	-117.89209	0.823
NB-BL15406-021016	2/10/2016	33.60100	-117.89209	0.962
NB-BL15407-021016	2/10/2016	33.60100	-117.89209	0.338
NB-RD12401-021016	2/10/2016	33.60086	-117.891009	0.509
NB-RD12402-021016	2/10/2016	33.60086	-117.891009	0.557
NB-RD12403-021016	2/10/2016	33.60086	-117.891009	0.539
NB-RD12404-021016	2/10/2016	33.60086	-117.891009	0.563
NB-RD12405-021016	2/10/2016	33.60086	-117.891009	0.743
NBRD12406-021016	2/10/2016	33.60086	-117.891009	0.579
NBRD12407-021016	2/10/2016	33.60086	-117.891009	0.583

Note:
µg/L microgram per liter

FIGURES



Q:\Jobs\NewportBay_0243\Maps\2016_02\Figure 1 - Random Sample Locations in Newport Bay.mxd cgardner 3/22/2016 3:36:08 PM

ANCHOR QEA

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Figure 1
Random Sample Locations
Frame 1 of 4
Newport Bay Copper Study
City of Newport Beach

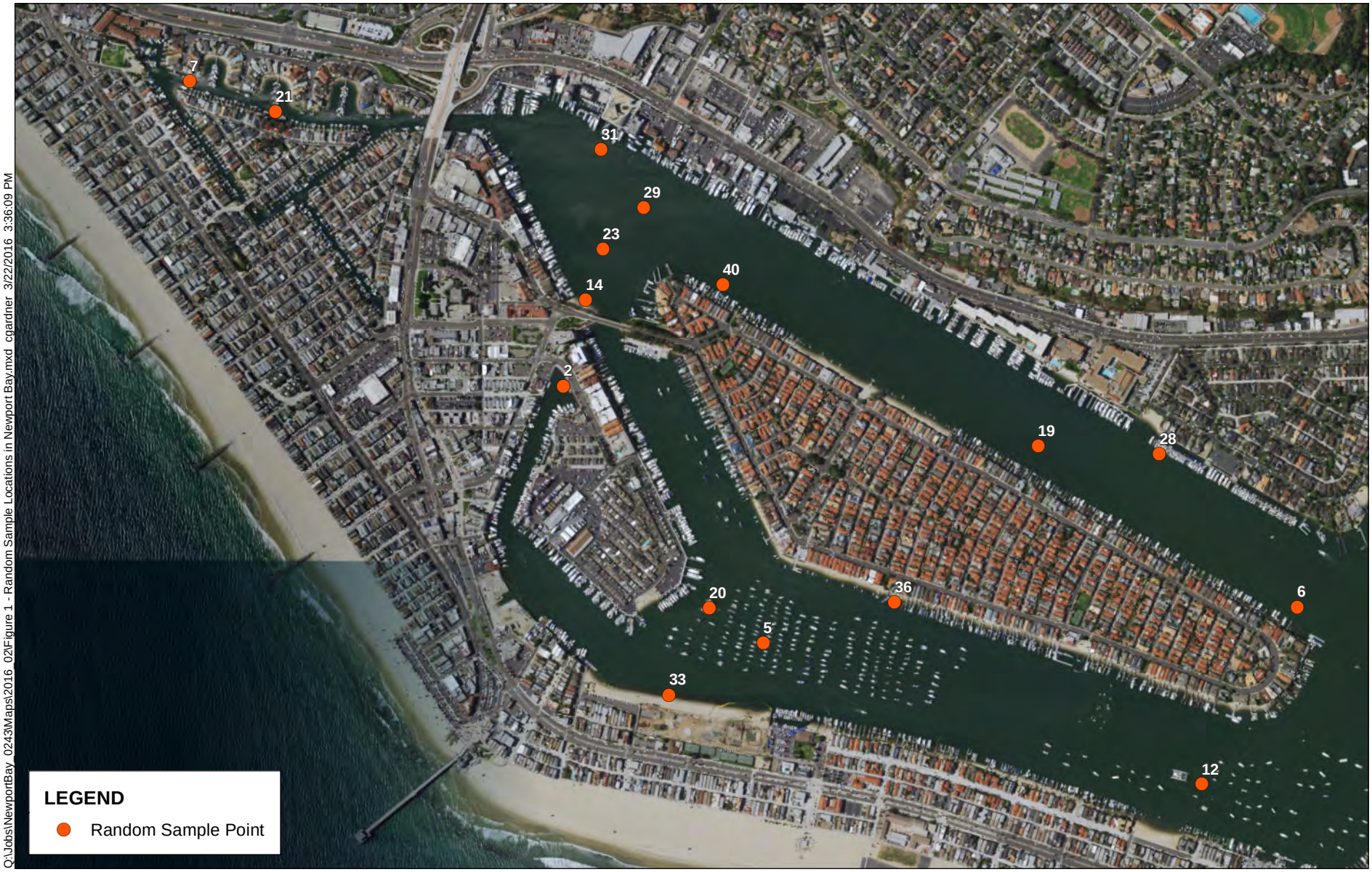

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Figure 1
Random Sample Locations
Frame 2 of 4
Newport Bay Copper Study
City of Newport Beach

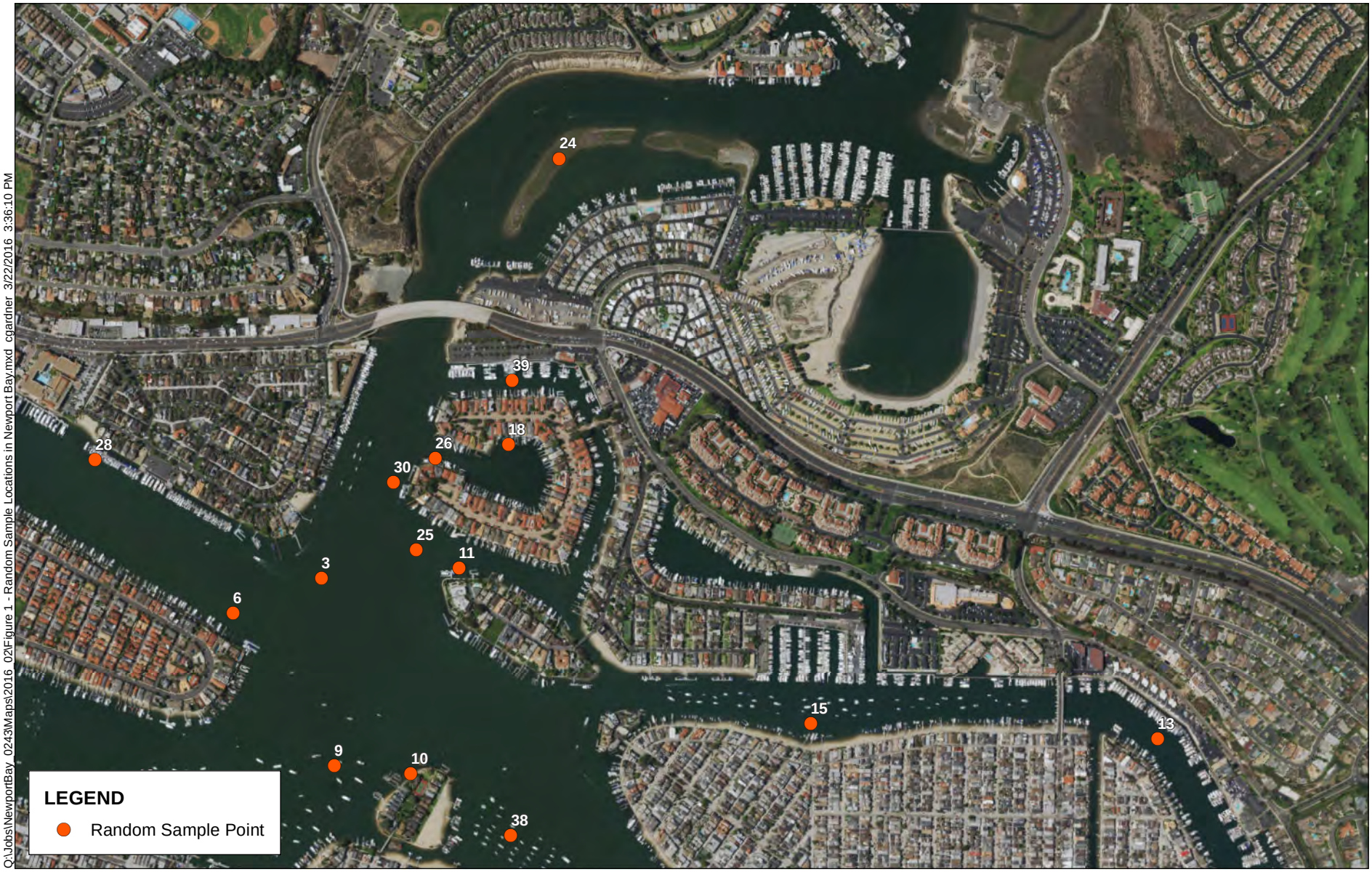

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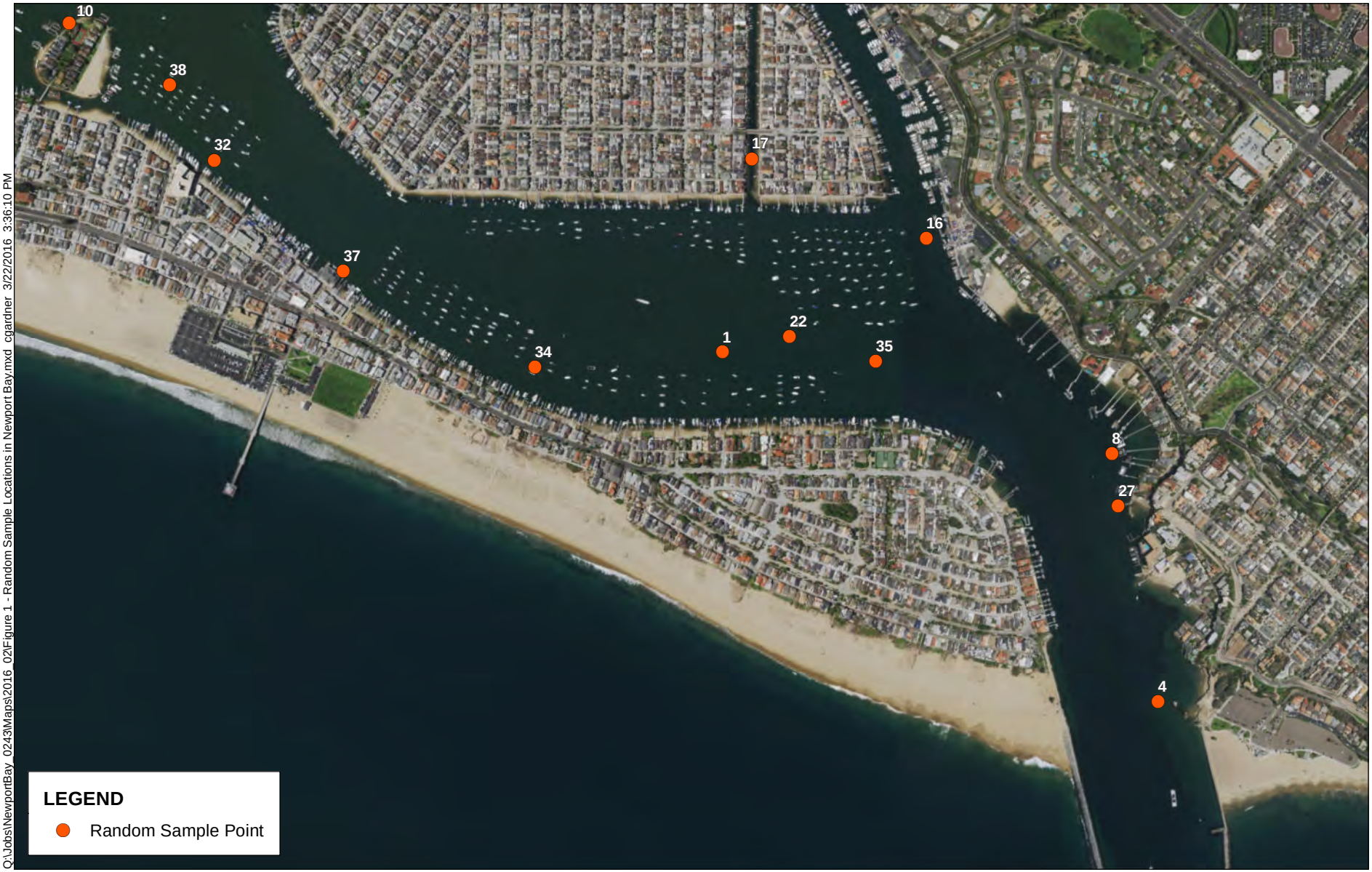
Figure 1
Random Sample Locations
Frame 3 of 4
Newport Bay Copper Study
City of Newport Beach



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ANCHOR QEA

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Figure 1
Random Sample Locations
Frame 4 of 4
Newport Bay Copper Study
City of Newport Beach

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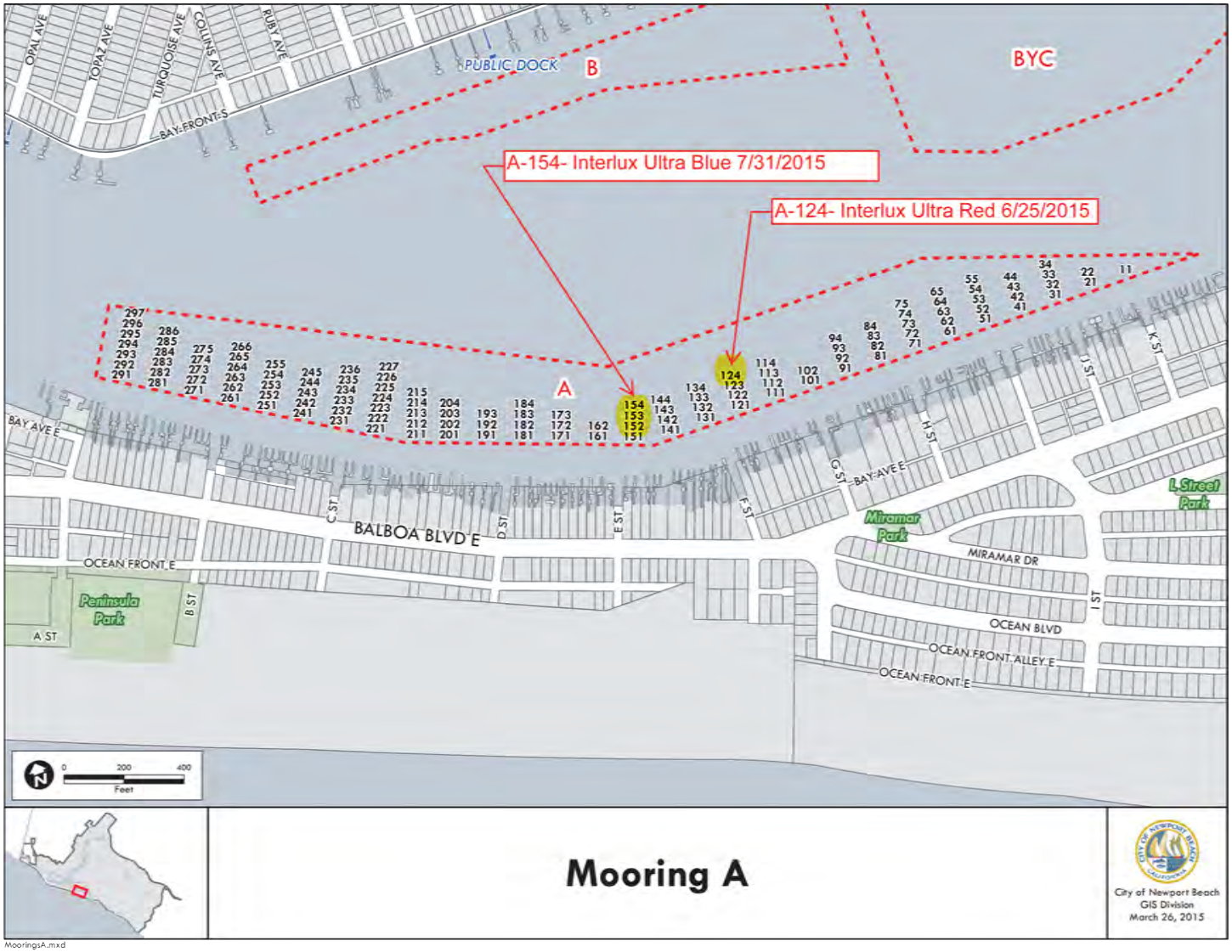
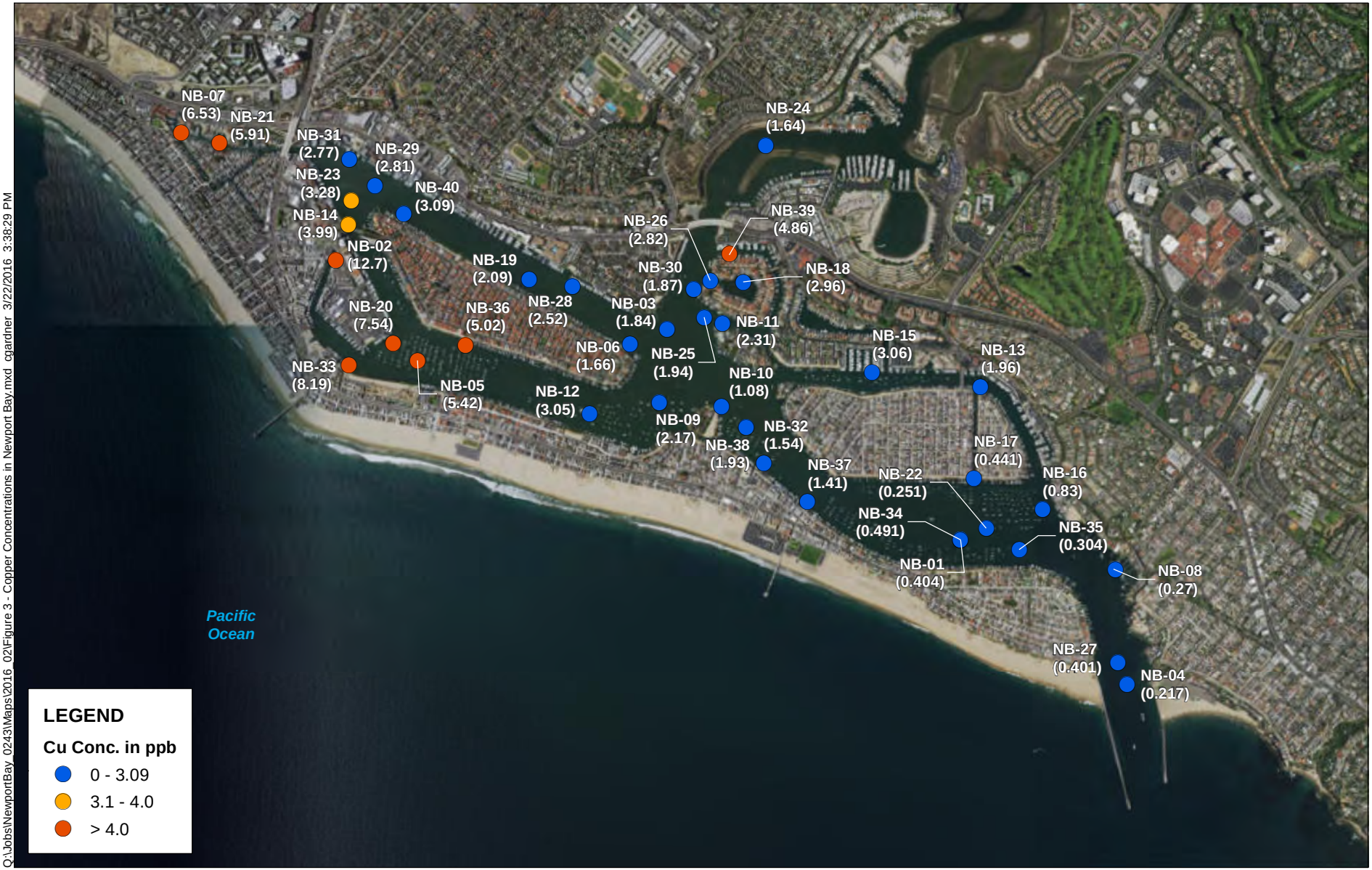


ANCHOR QEA

Figure 2
Focused Vessel Mooring Field
Newport Copper Study
City of Newport Beach



Q:\Jobs\NewportBay_0243\Maps\2016_02\Figure 3 - Copper Concentrations in Newport Bay.mxd cgardner 3/22/2016 3:38:29 PM

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Figure 3
Dissolved Copper Concentrations
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Newport Bay Copper Study
City of Newport Beach

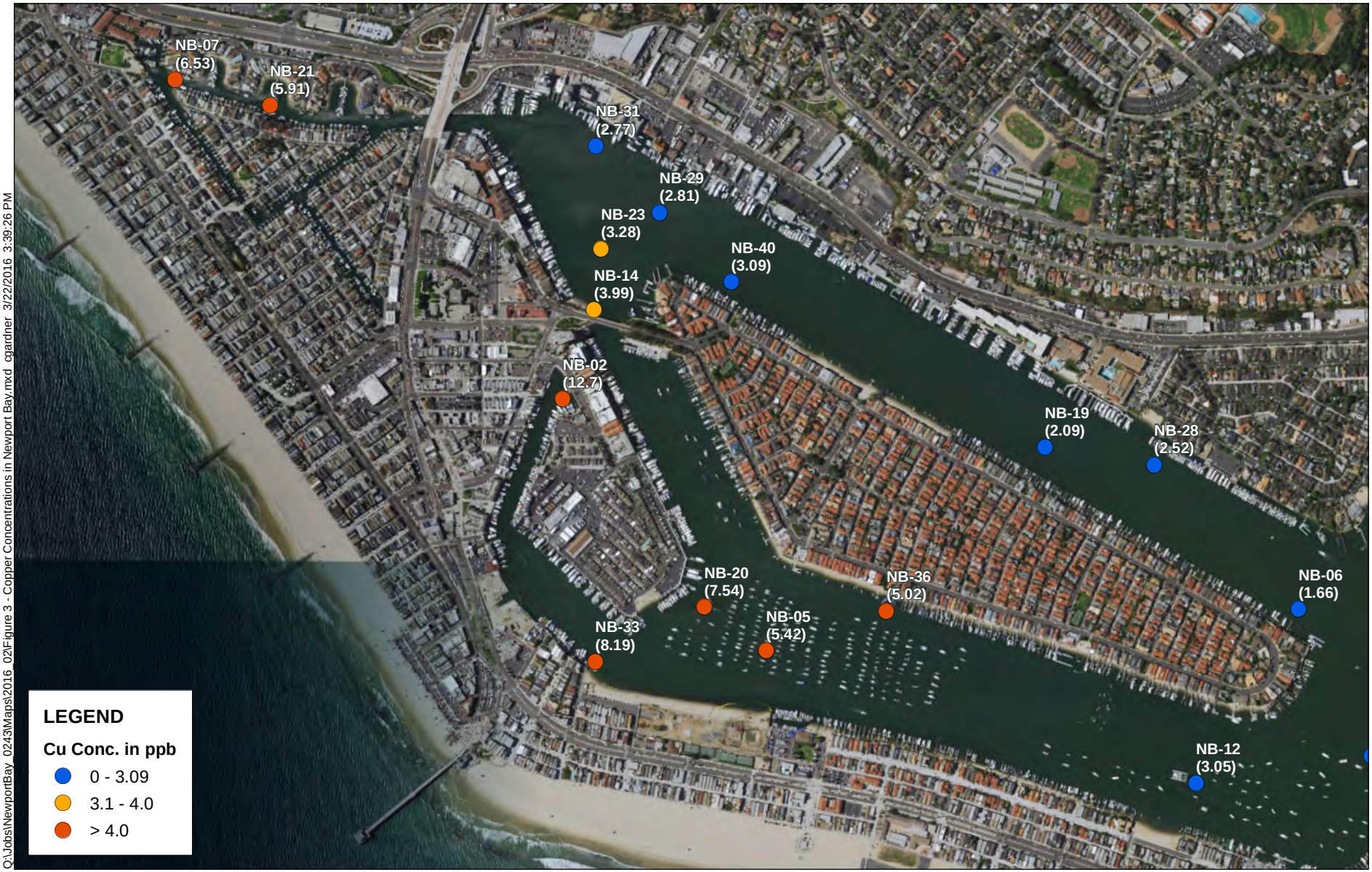

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Figure 3
Dissolved Copper Concentrations
Frame 2 of 4
Newport Bay Copper Study
City of Newport Beach

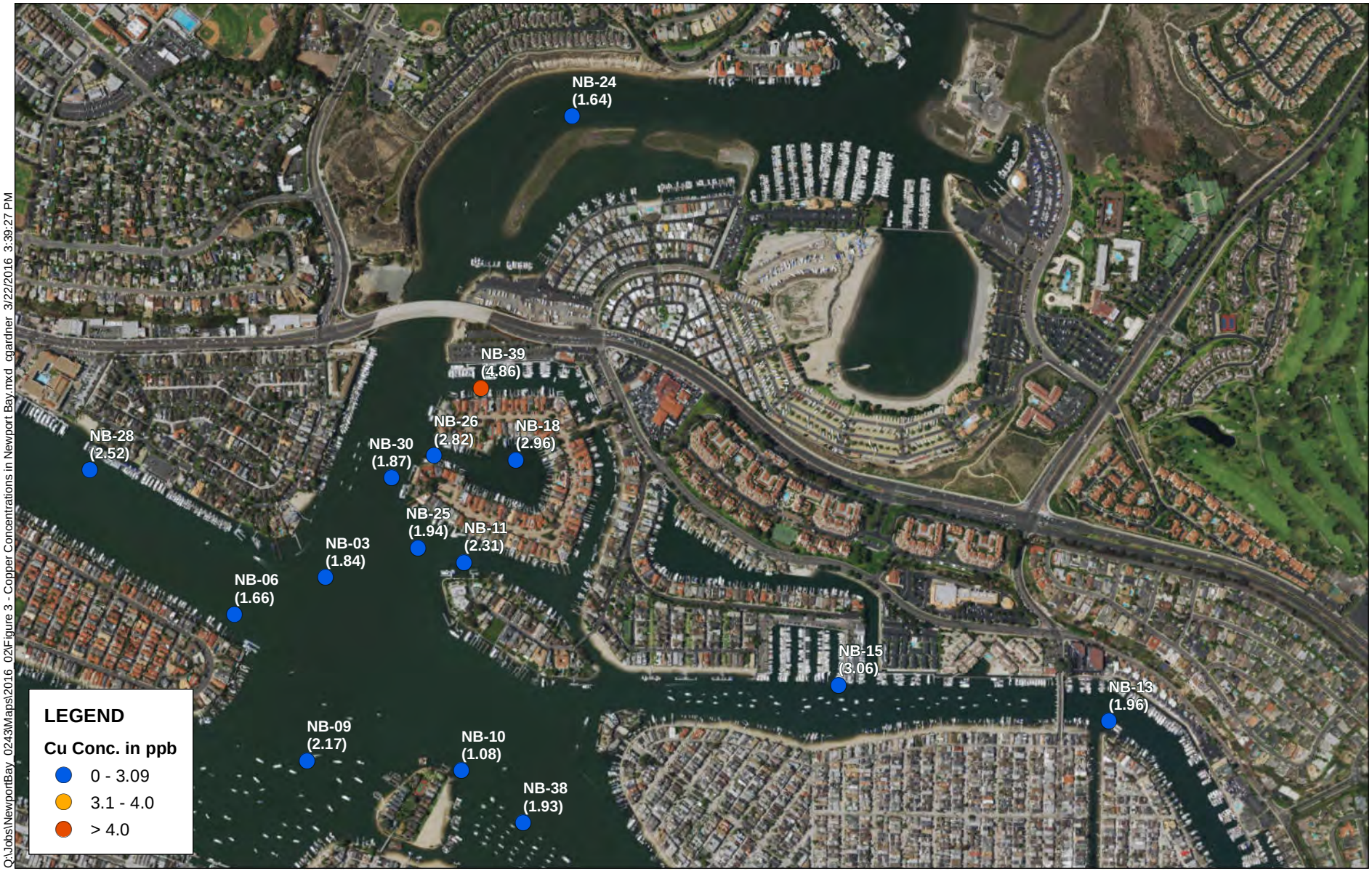

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Figure 3
Dissolved Copper Concentrations
Frame 3 of 4
Newport Bay Copper Study
City of Newport Beach

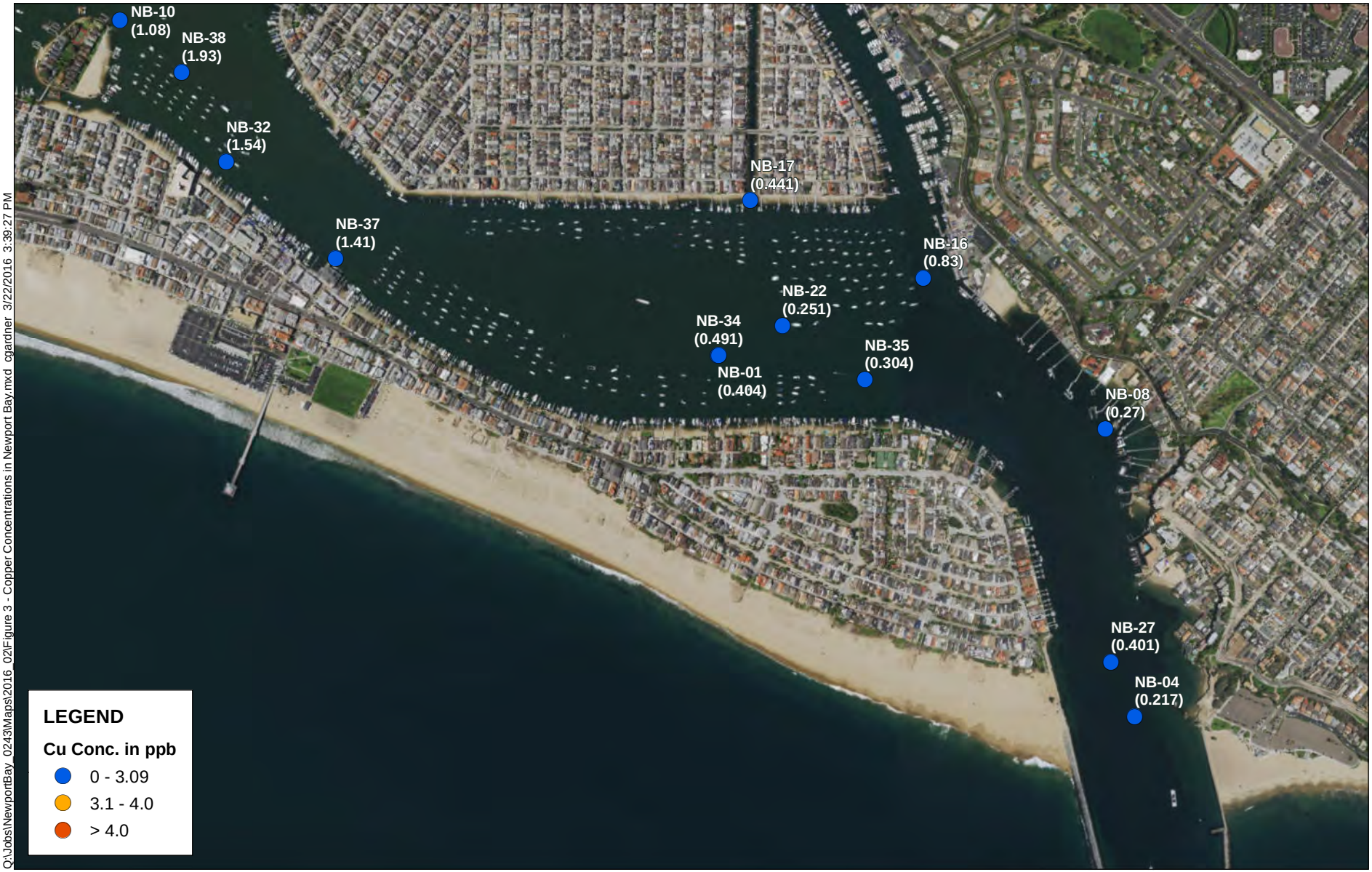

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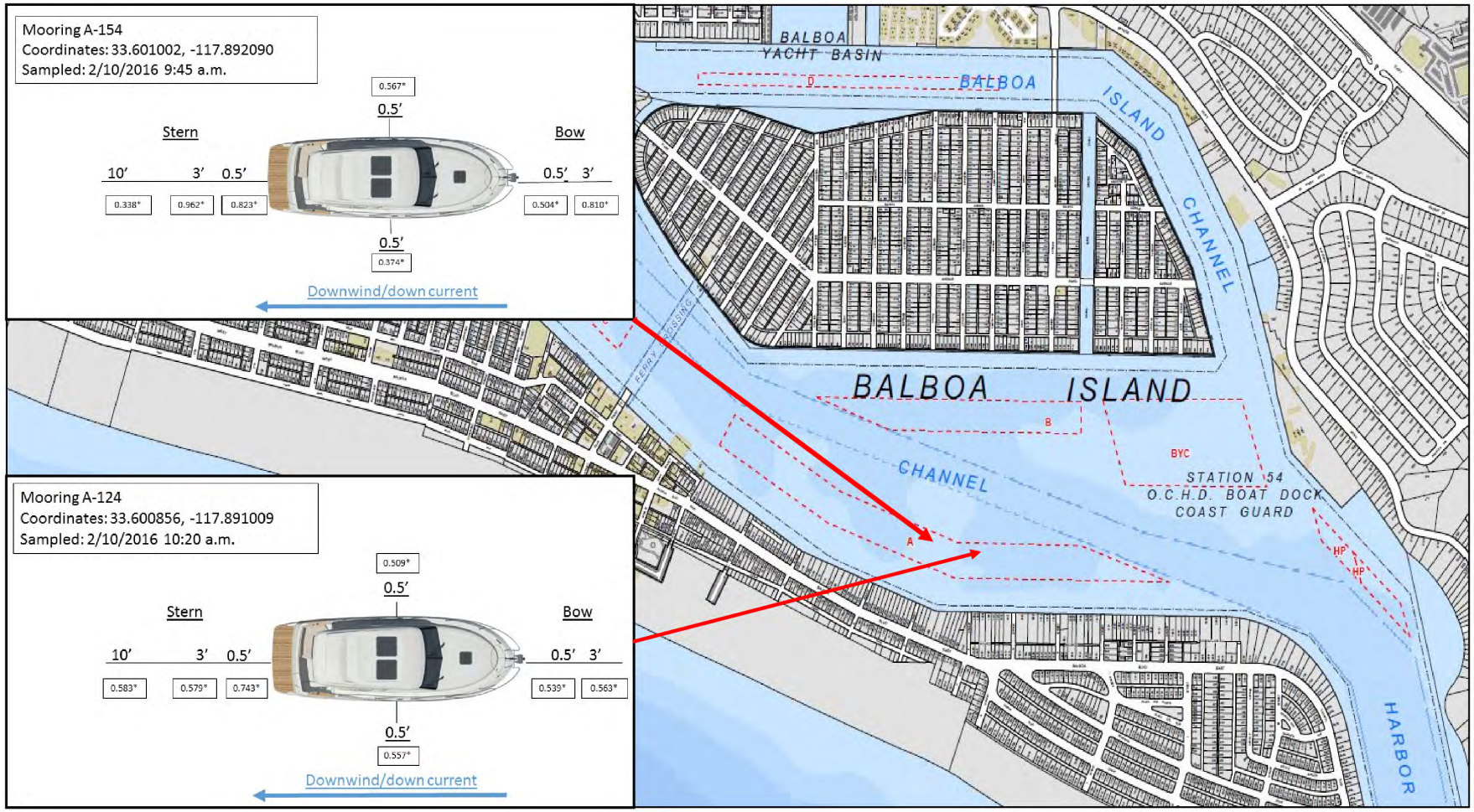
Figure 3
Dissolved Copper Concentrations
Frame 4 of 4
Newport Bay Copper Study
City of Newport Beach



ANCHOR QEA

Figure 4
Focused Vessel Copper Concentrations
Newport Copper Study
City of Newport Beach

ATTACHMENT A
CHEMISTRY REPORTS

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WORK ORDER NUMBER: 16-02-0869

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ANCHOR QEA, LLC

Client Project Name: Newport Bay Metals TMDL WQ

Attention: Chris Osuch
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 02/22/2016 by:
Carla Hollowell
Project Manager

ResultLink

Email your PM

eurofins | Calscience

Contents

Client Project Name: Newport Bay Metals TMDL WQ
Work Order Number: 16-02-0869

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Work Order Narrative

Work Order: 16-02-0869 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 02/10/16. They were assigned to Work Order 16-02-0869.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Return to Contents

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Sample Summary

Client:	ANCHOR QEA, LLC 27201 Puerta Real, Suite 350 Mission Viejo, CA 92691-8306	Work Order:	16-02-0869
		Project Name:	Newport Bay Metals TMDL WQ
		PO Number:	
		Date/Time Received:	02/10/16 17:22
		Number of Containers:	34
Attn:	Chris Osuch		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
NB-22-021016	16-02-0869-1	02/10/16 11:51	1	Aqueous
NB-01-021016	16-02-0869-2	02/10/16 11:55	1	Aqueous
NB-34-021016	16-02-0869-3	02/10/16 12:02	1	Aqueous
NB-37-021016	16-02-0869-4	02/10/16 12:07	1	Aqueous
NB-32-021016	16-02-0869-5	02/10/16 12:20	1	Aqueous
NB-38-021016	16-02-0869-6	02/10/16 12:29	1	Aqueous
NB-15-021016	16-02-0869-7	02/10/16 13:42	1	Aqueous
NB-13-021016	16-02-0869-8	02/10/16 13:50	1	Aqueous
NB-39-021016	16-02-0869-9	02/10/16 14:30	2	Aqueous
NB-18-021016	16-02-0869-10	02/10/16 14:39	1	Aqueous
NB-RD124-01-021016	16-02-0869-11	02/10/16 10:20	1	Aqueous
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NB-RD124-07-021016	16-02-0869-17	02/10/16 10:20	1	Aqueous
NB-27-021016	16-02-0869-18	02/10/16 11:07	1	Aqueous
NB-08-021016	16-02-0869-19	02/10/16 11:20	1	Aqueous
NB-35-021016	16-02-0869-20	02/10/16 11:31	1	Aqueous
NB-24-021016	16-02-0869-21	02/10/16 08:22	2	Aqueous
NB-17-021016	16-02-0869-22	02/10/16 09:01	1	Aqueous
NB-04-021016	16-02-0869-23	02/10/16 09:25	1	Aqueous
NB-BL15401-021016	16-02-0869-24	02/10/16 09:45	1	Aqueous
NB-BL15402-021016	16-02-0869-25	02/10/16 09:45	1	Aqueous
NB-BL15403-021016	16-02-0869-26	02/10/16 09:45	1	Aqueous
NB-BL15404-021016	16-02-0869-27	02/10/16 09:45	1	Aqueous
NB-BL15405-021016	16-02-0869-28	02/10/16 09:45	1	Aqueous
NB-BL15406-021016	16-02-0869-29	02/10/16 09:45	1	Aqueous
NB-BL15407-021016	16-02-0869-30	02/10/16 09:45	1	Aqueous
NB-26-021016	16-02-0869-31	02/10/16 14:50	1	Aqueous

Return to Contents

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Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/10/16
Work Order: 16-02-0869
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: Newport Bay Metals TMDL WQ

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-22-021016	**16-02-0869-1-A**	**02/10/16 11:51**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 19:59**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.251	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-01-021016	**16-02-0869-2-A**	**02/10/16 11:55**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 20:07**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.404	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-34-021016	**16-02-0869-3-A**	**02/10/16 12:02**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 20:15**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.491	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-37-021016	**16-02-0869-4-A**	**02/10/16 12:07**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 20:23**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	1.41	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-32-021016	**16-02-0869-5-A**	**02/10/16 12:20**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 20:30**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	1.54	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-38-021016	**16-02-0869-6-A**	**02/10/16 12:29**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 20:38**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	1.93	0.0300	0.00898	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/10/16
Work Order: 16-02-0869
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: Newport Bay Metals TMDL WQ

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-15-021016	**16-02-0869-7-A**	**02/10/16 13:42**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 20:46**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	3.06	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-13-021016	**16-02-0869-8-A**	**02/10/16 13:50**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 20:53**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	1.96	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-39-021016	**16-02-0869-9-A**	**02/10/16 14:30**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/17/16 06:15**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	4.86	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-18-021016	**16-02-0869-10-A**	**02/10/16 14:39**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 21:01**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	2.96	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-RD124-01-021016	**16-02-0869-11-A**	**02/10/16 10:20**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 21:40**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.509	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-RD124-02-021016	**16-02-0869-12-A**	**02/10/16 10:20**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 21:47**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.557	0.0300	0.00898	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Return to Contents

eurofins | Calscience

Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/10/16
Work Order: 16-02-0869
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: Newport Bay Metals TMDL WQ

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-RD124-03-021016	**16-02-0869-13-A**	**02/10/16 10:20**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 21:55**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.539	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-RD124-04-021016	**16-02-0869-14-A**	**02/10/16 10:20**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 22:03**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.563	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-RD124-05-021016	**16-02-0869-15-A**	**02/10/16 10:20**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 22:10**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.743	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-RD124-06-021016	**16-02-0869-16-A**	**02/10/16 10:20**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 22:18**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.579	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-RD124-07-021016	**16-02-0869-17-A**	**02/10/16 10:20**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 22:26**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.583	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-27-021016	**16-02-0869-18-A**	**02/10/16 11:07**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 22:33**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.401	0.0300	0.00898	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/10/16
Work Order: 16-02-0869
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: Newport Bay Metals TMDL WQ

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-08-021016	**16-02-0869-19-A**	**02/10/16 11:20**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 22:41**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.270	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-35-021016	**16-02-0869-20-A**	**02/10/16 11:31**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 23:20**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.304	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-24-021016	**16-02-0869-21-A**	**02/10/16 08:22**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/17/16 06:23**	**160211L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	1.64	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-17-021016	**16-02-0869-22-A**	**02/10/16 09:01**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 23:27**	**160211L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.441	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-04-021016	**16-02-0869-23-A**	**02/10/16 09:25**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 23:35**	**160211L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.217	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-BL15401-021016	**16-02-0869-24-A**	**02/10/16 09:45**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 23:43**	**160211L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.567	0.0300	0.00898	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/10/16
Work Order: 16-02-0869
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: Newport Bay Metals TMDL WQ

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-BL15402-021016	**16-02-0869-25-A**	**02/10/16 09:45**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 23:50**	**160211L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.374	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-BL15403-021016	**16-02-0869-26-A**	**02/10/16 09:45**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 23:58**	**160211L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.504	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-BL15404-021016	**16-02-0869-27-A**	**02/10/16 09:45**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/12/16 00:06**	**160211L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.810	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-BL15405-021016	**16-02-0869-28-A**	**02/10/16 09:45**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/12/16 00:13**	**160211L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.823	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-BL15406-021016	**16-02-0869-29-A**	**02/10/16 09:45**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/12/16 00:21**	**160211L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.962	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-BL15407-021016	**16-02-0869-30-A**	**02/10/16 09:45**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/12/16 01:00**	**160211L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.338	0.0300	0.00898	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/10/16
Work Order: 16-02-0869
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: Newport Bay Metals TMDL WQ

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-26-021016	**16-02-0869-31-A**	**02/10/16 14:50**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/12/16 01:07**	**160211L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	2.82	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-823-183**	**N/A**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 18:35**	**160211L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	ND	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-823-184**	**N/A**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 18:50**	**160211L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	ND	0.0300	0.00898	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC	Date Received:	02/10/16
27201 Puerta Real, Suite 350	Work Order:	16-02-0869
Mission Viejo, CA 92691-8306	Preparation:	EPA 3005A Filt.
	Method:	EPA 1640
Project: Newport Bay Metals TMDL WQ		Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
NB-39-021016	**Sample**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/17/16 06:15**	**160211S01**
NB-39-021016	**Matrix Spike**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/17/16 06:31**	**160211S01**
NB-39-021016	**Matrix Spike Duplicate**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/17/16 07:09**	**160211S01**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Copper	4.857	0.5000	5.086	4X	5.586	4X	50-150	4X	0-20	Q

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC		Date Received:	02/10/16
27201 Puerta Real, Suite 350		Work Order:	16-02-0869
Mission Viejo, CA 92691-8306		Preparation:	EPA 3005A Filt.
		Method:	EPA 1640
Project: Newport Bay Metals TMDL WQ			Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
NB-24-021016	**Sample**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/17/16 06:23**	**160211S02**
NB-24-021016	**Matrix Spike**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/17/16 07:17**	**160211S02**
NB-24-021016	**Matrix Spike Duplicate**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/17/16 07:25**	**160211S02**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Copper	1.644	0.5000	2.558	183	2.701	211	50-150	5	0-20	3

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Project: Newport Bay Metals TMDL WQ

Date Received: 02/10/16
Work Order: 16-02-0869
Preparation: EPA 3005A Filt.
Method: EPA 1640

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-823-183	**LCS**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 19:05**	**160211L01F**
099-15-823-183	**LCSD**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 19:13**	**160211L01F**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Copper	0.5000	0.5374	107	0.5279	106	70-130	2	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/10/16
Work Order: 16-02-0869
Preparation: EPA 3005A Filt.
Method: EPA 1640

Project: Newport Bay Metals TMDL WQ

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-823-184	**LCS**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 19:21**	**160211L02F**
099-15-823-184	**LCSD**	**Aqueous**	**ICP/MS 05**	**02/11/16**	**02/11/16 19:29**	**160211L02F**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Copper	0.5000	0.5178	104	0.5230	105	70-130	1	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Glossary of Terms and Qualifiers

Work Order: 16-02-0869 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Return to Contents

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: **16-02-0869**

DATE: 2/10/16
PAGE: 1 OF 4

LABORATORY CLIENT: Anchor QEA
ADDRESS: 27201 Puerta Real, Suite 350
CITY: Mission Viejo STATE: CA ZIP: 92691
TEL: 949.347.2780 E-MAIL: cosuch@anchorqea.com

CLIENT PROJECT NAME / NUMBER: Newport Bay Metals TMDL WQ
P.O. NO.: 150243-01.04
PROJECT CONTACT: Chris Osuch
SAMPLER(S): (PRINT) C. Dolphin, N. Kennedy

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ STANDARD

☐ COELT EDF GLOBAL ID: LOG CODE:

SPECIAL INSTRUCTIONS:
Report down to the MDL
Filter at laboratory upon receipt

REQUESTED ANALYSES
Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	EPA 1640 Dissolved Cu	MS/MSD
1	NB-22-021016	2/10/16	1151	WAT	1	X			X	
2	NB-01-021016	↓	1155	↓	1	X			X	
3	NB-34-021016	↓	1202	↓	1	X			X	
4	NB-37-021016	↓	~~1208~~ 1210	↓	1	X			X	
5	NB-32-021016	↓	1220	↓	1	X			X	
6	NB-38-021016	↓	1229	↓	1	X			X	
7	NB-15-021016	↓	1342	↓	1	X			X	
8	NB-13-021016	↓	1350	↓	1	X			X	
9	NB-39-021016	↓	1430	↓	2	X			X	X
10	NB-18-021016	↓	1439	↓	1	X			X	

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
N. Kennedy	[signature] EA	2/10/16	1722

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: 16-02-0869

DATE: 2/10/16

PAGE: 2 OF 4

LABORATORY CLIENT: Anchor QEA

ADDRESS: 27201 Puerta Real, Suite 350

CITY: Mission Viejo STATE: CA ZIP: 92691

TEL: 949.347.2780 E-MAIL: cosuch@anchorqea.com

CLIENT PROJECT NAME / NUMBER: Newport Bay Metals TMDL WQ

P.O. NO.: 150243-01.04

PROJECT CONTACT: Chris Osuch

SAMPLER(S): (PRINT) C. Dolphin, N. Kennedy

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):

☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ STANDARD

☐ COELT EDF GLOBAL ID: LOG CODE:

SPECIAL INSTRUCTIONS:

Report down to the MDL

Filter at laboratory upon receipt

REQUESTED ANALYSES

Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	EPA 1640 Dissolved Cu	MS/MSD
11	NB-RD-BC124-01-021016	2/10/16	1020	WAT	1	X			X	
12	NB-RD-BC124-02-021016		1020		1	X			X	
13	NB-RD-BC124-03-021016		1020		1	X			X	
14	NB-RD-BC124-04-021016		1020		1	X			X	
15	NB-RD-BC124-05-021016		1020		1	X			X	
16	NB-RD-BC124-06-021016		1020		1	X			X	
17	NB-RD-BC124-07-021016		1020		1	X			X	
18	NB-27-021016		1107		1	X			X	
19	NB-08-021016	"	1120		1	X			X	
20	NB-35-021016	"	1131		1	X			X	

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
		2/10/16	1722
Relinquished by: (Signature) N. Kennedy 2/10/16	Received by: (Signature/Affiliation)	Date:	Time: 15 2/10/16
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

06/02/14 Revision

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: 16-02-0869

DATE: 2/10/16

PAGE: 3 OF 4

LABORATORY CLIENT: Anchor QEA

ADDRESS: 27201 Puerta Real, Suite 350

CITY: Mission Viejo STATE: CA ZIP: 92691

TEL: 949.347.2780 E-MAIL: cosuch@anchorqea.com

CLIENT PROJECT NAME / NUMBER: Newport Bay Metals TMDL WQ

P.O. NO.: 150243-01.04

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SPECIAL INSTRUCTIONS:
Report down to the MDL
Filter at laboratory upon receipt

REQUESTED ANALYSES

Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	EPA 1640 Dissolved Cu	MS/MSD
21	NB-24-021016	2/10/16	0822	WAT	2				X	X
22	NB-17-021016		0901		1				X	
23	NB-04-021016		0925		1				X	
24	NB-BL15401-021016		0945		1				X	
25	NB-BL15402-021016		0945		1				X	
26	NB-BL15403-021016		0945		1				X	
27	NB-BL15404-021016		0945		1				X	
28	NB-BL15405-021016		0945		1				X	
29	NB-BL15406-021016		0945		1				X	
30	NB-BL15407-021016	↓	0945	↓	1				X	

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date: 2/10/16	Time: 1722
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

06/02/14 Revision

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: 16-02-0869

DATE: 2/10/14

PAGE: 4 OF 4

LABORATORY CLIENT: **Anchor QEA**

ADDRESS: **27201 Puerta Real, Suite 350**

CITY: **Mission Viejo** STATE: **CA** ZIP: **92691**

TEL: **949.347.2780** E-MAIL: cosuch@anchorqea.com

CLIENT PROJECT NAME / NUMBER: Newport Bay Metals TMDL WQ

P.O. NO.: 150243-01.04

PROJECT CONTACT: Chris Osuch

SAMPLER(S): (PRINT) C. Dolphin, N. Kennedy

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):

☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ STANDARD

☐ COELT EDF GLOBAL ID: LOG CODE:

SPECIAL INSTRUCTIONS:

Report down to the MDL

Filter at laboratory upon receipt

REQUESTED ANALYSES

Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	EPA 1640 Dissolved Cu	MS/MSD
31	NB3-26-021016	2/10/14	1456	WAT	1	Y			X	

Relinquished by: (Signature) — Received by: (Signature/Affiliation) — Date: 2/10/14 — Time: 1722

Relinquished by: (Signature) — Received by: (Signature/Affiliation) — Date: — Time:

Relinquished by: (Signature) — Received by: (Signature/Affiliation) — Date: — Time:

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Return to Contents

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WORK ORDER NUMBER: 16-02- 0869

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: Anchor QEA

DATE: 02 / 10 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC4B (CF: +0.3°C); Temperature (w/o CF): 2.7 °C (w/ CF): 3.0 °C; ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 836

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 836

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 836

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☐	☑	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB

☐ 125PB**znna** ☐ 250AGB ☐ 250CGB ☐ 250CGB**s** ☑ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s**

☐ 500PB ☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (_____) ☐ EnCores® (_____) ☐ TerraCores® (_____) ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **znna** = $Zn(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: 836

Reviewed by: 1064

Return to Contents

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WORK ORDER NUMBER: 16-02- 0809

SAMPLE ANOMALY REPORT

DATE: 02 / 10 / 2016

SAMPLES, CONTAINERS, AND LABELS:

- ☐ Sample(s) NOT RECEIVED but listed on COC
- ☑ Sample(s) received but NOT LISTED on COC
- ☐ Holding time expired (list client or ECI sample ID and analysis)
- ☐ Insufficient sample amount for requested analysis (list analysis)
- ☐ Improper container(s) used (list analysis)
- ☐ Improper preservative used (list analysis)
- ☐ No preservative noted on COC or label (list analysis and notify lab)
- ☐ Sample container(s) not labeled
- ☐ Client sample label(s) illegible (list container type and analysis)
- ☐ Client sample label(s) do not match COC (comment)
  - ☐ Project information
  - ☐ Client sample ID
  - ☐ Sampling date and/or time
  - ☐ Number of container(s)
  - ☐ Requested analysis
- ☐ Sample container(s) compromised (comment)
  - ☐ Broken
  - ☐ Water present in sample container
- ☐ Air sample container(s) compromised (comment)
  - ☐ Flat
  - ☐ Very low in volume
  - ☐ Leaking (not transferred; duplicate bag submitted)
  - ☐ Leaking (transferred into ECI Tedlar™ bags*)
  - ☐ Leaking (transferred into client's Tedlar™ bags*)

* Transferred at client's request.

Comments

(-32) Received 1-250ml plastic container, labeled as WB-16-021016, 2/10/16@1139 (not on COC)

MISCELLANEOUS: (Describe)

Comments

HEADSPACE:

(Containers with bubble > 6 mm or ¼ inch for volatile organic or dissolved gas analysis)

ECI Sample ID	ECI Container ID	Total Number**	ECI Sample ID	ECI Container ID	Total Number**

(Containers with bubble for other analysis)

ECI Sample ID	ECI Container ID	Total Number**	Requested Analysis

Comments:

Reported by: 1054

Reviewed by: SB6

** Record the total number of containers (i.e., vials or bottles) for the affected sample.

Return to Contents

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WORK ORDER NUMBER: 16-02-0975

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ANCHOR QEA, LLC

Client Project Name: Newport Bay Metals TMDL WQ

Attention: Chris Osuch
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 02/24/2016 by:
Carla Hollowell
Project Manager

ResultLink

Email your PM

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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Contents

Client Project Name: Newport Bay Metals TMDL WQ
Work Order Number: 16-02-0975

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Work Order Narrative

Work Order: 16-02-0975 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 02/11/16. They were assigned to Work Order 16-02-0975.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Return to Contents

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Sample Summary

Client:	ANCHOR QEA, LLC 27201 Puerta Real, Suite 350 Mission Viejo, CA 92691-8306	Work Order:	16-02-0975
		Project Name:	Newport Bay Metals TMDL WQ
		PO Number:	
		Date/Time Received:	02/11/16 14:34
		Number of Containers:	23
Attn:	Chris Osuch		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
NB-07-021116	16-02-0975-1	02/11/16 08:52	1	Aqueous
NB-21-021116	16-02-0975-2	02/11/16 08:58	1	Aqueous
NB-02-021116	16-02-0975-3	02/11/16 09:20	1	Aqueous
NB-33-021116	16-02-0975-4	02/11/16 09:30	1	Aqueous
NB-05-021116	16-02-0975-5	02/11/16 09:40	1	Aqueous
NB-20-021116	16-02-0975-6	02/11/16 09:49	1	Aqueous
NB-36-021116	16-02-0975-7	02/11/16 10:00	2	Aqueous
NB-14-021116	16-02-0975-8	02/11/16 10:10	1	Aqueous
NB-23-021116	16-02-0975-9	02/11/16 10:18	1	Aqueous
NB-31-021116	16-02-0975-10	02/11/16 10:33	1	Aqueous
NB-25-021116	16-02-0975-11	02/11/16 11:55	1	Aqueous
NB-11-021116	16-02-0975-12	02/11/16 12:00	1	Aqueous
NB-29-021116	16-02-0975-13	02/11/16 10:29	1	Aqueous
NB-40-021116	16-02-0975-14	02/11/16 10:40	1	Aqueous
NB-19-021116	16-02-0975-15	02/11/16 10:50	1	Aqueous
NB-28-021116	16-02-0975-16	02/11/16 10:52	1	Aqueous
NB-06-021116	16-02-0975-17	02/11/16 11:03	1	Aqueous
NB-03-021116	16-02-0975-18	02/11/16 11:07	1	Aqueous
NB-12-021116	16-02-0975-19	02/11/16 11:17	1	Aqueous
NB-09-021116	16-02-0975-20	02/11/16 11:25	1	Aqueous
NB-10-021116	16-02-0975-21	02/11/16 11:30	1	Aqueous
NB-30-021116	16-02-0975-22	02/11/16 11:49	1	Aqueous

Return to Contents

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Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/11/16
Work Order: 16-02-0975
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: Newport Bay Metals TMDL WQ

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-07-021116	**16-02-0975-1-A**	**02/11/16 08:52**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 18:32**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	6.53	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-21-021116	**16-02-0975-2-A**	**02/11/16 08:58**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 19:10**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	5.91	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-02-021116	**16-02-0975-3-A**	**02/11/16 09:20**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 19:18**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	12.7	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-33-021116	**16-02-0975-4-A**	**02/11/16 09:30**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 19:26**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	8.19	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-05-021116	**16-02-0975-5-A**	**02/11/16 09:40**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 19:33**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	5.42	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-20-021116	**16-02-0975-6-A**	**02/11/16 09:49**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 19:41**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	7.54	0.0300	0.00898	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/11/16
Work Order: 16-02-0975
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: Newport Bay Metals TMDL WQ

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-36-021116	**16-02-0975-7-B**	**02/11/16 10:00**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 17:45**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	5.02	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-14-021116	**16-02-0975-8-A**	**02/11/16 10:10**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 19:49**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	3.99	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-23-021116	**16-02-0975-9-A**	**02/11/16 10:18**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 19:57**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	3.28	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-31-021116	**16-02-0975-10-A**	**02/11/16 10:33**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 20:04**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	2.77	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-25-021116	**16-02-0975-11-A**	**02/11/16 11:55**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 20:12**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	1.94	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-11-021116	**16-02-0975-12-A**	**02/11/16 12:00**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/19/16 00:27**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	2.31	0.0300	0.00898	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/11/16
Work Order: 16-02-0975
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: Newport Bay Metals TMDL WQ

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-29-021116	**16-02-0975-13-A**	**02/11/16 10:29**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/19/16 00:34**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	2.81	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-40-021116	**16-02-0975-14-A**	**02/11/16 10:40**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/19/16 00:42**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	3.09	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-19-021116	**16-02-0975-15-A**	**02/11/16 10:50**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/19/16 01:21**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	2.09	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-28-021116	**16-02-0975-16-A**	**02/11/16 10:52**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/19/16 01:29**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	2.52	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-06-021116	**16-02-0975-17-A**	**02/11/16 11:03**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/19/16 01:36**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	1.66	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-03-021116	**16-02-0975-18-A**	**02/11/16 11:07**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/19/16 01:44**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	1.84	0.0300	0.00898	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Date Received: 02/11/16
Work Order: 16-02-0975
Preparation: EPA 3005A Filt.
Method: EPA 1640
Units: ug/L

Project: Newport Bay Metals TMDL WQ

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-12-021116	**16-02-0975-19-A**	**02/11/16 11:17**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/19/16 01:52**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	3.05	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-09-021116	**16-02-0975-20-A**	**02/11/16 11:25**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/19/16 01:59**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	2.17	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-10-021116	**16-02-0975-21-A**	**02/11/16 11:30**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/19/16 02:07**	**160217L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	1.08	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
NB-30-021116	**16-02-0975-22-A**	**02/11/16 11:49**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/19/16 02:15**	**160217L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	1.87	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-823-188**	**N/A**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 16:05**	**160217L01F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	ND	0.0300	0.00898	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-823-187**	**N/A**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 16:20**	**160217L02F**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	ND	0.0300	0.00898	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC	Date Received:	02/11/16
27201 Puerta Real, Suite 350	Work Order:	16-02-0975
Mission Viejo, CA 92691-8306	Preparation:	EPA 3005A Filt.
	Method:	EPA 1640
Project: Newport Bay Metals TMDL WQ		Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-02-1063-1	**Sample**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 17:38**	**160217S01**
16-02-1063-1	**Matrix Spike**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 17:53**	**160217S01**
16-02-1063-1	**Matrix Spike Duplicate**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 18:01**	**160217S01**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Copper	1.789	0.5000	2.279	98	2.386	119	50-150	5	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

ANCHOR QEA, LLC	Date Received:	02/11/16
27201 Puerta Real, Suite 350	Work Order:	16-02-0975
Mission Viejo, CA 92691-8306	Preparation:	EPA 3005A Filt.
	Method:	EPA 1640
Project: Newport Bay Metals TMDL WQ		Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
NB-36-021116	**Sample**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 17:45**	**160217S02**
NB-36-021116	**Matrix Spike**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 18:09**	**160217S02**
NB-36-021116	**Matrix Spike Duplicate**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 18:16**	**160217S02**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Copper	5.020	0.5000	5.230	4X	5.430	4X	50-150	4X	0-20	Q

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Project: Newport Bay Metals TMDL WQ

Date Received: 02/11/16
Work Order: 16-02-0975
Preparation: EPA 3005A Filt.
Method: EPA 1640

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-823-188	**LCS**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 16:28**	**160217L01F**
099-15-823-188	**LCSD**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 16:36**	**160217L01F**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Copper	0.5000	0.5768	115	0.5827	117	70-130	1	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

ANCHOR QEA, LLC
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Project: Newport Bay Metals TMDL WQ

Date Received: 02/11/16
Work Order: 16-02-0975
Preparation: EPA 3005A Filt.
Method: EPA 1640
Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-823-187	**LCS**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 16:44**	**160217L02F**
099-15-823-187	**LCSD**	**Aqueous**	**ICP/MS 05**	**02/17/16**	**02/18/16 16:51**	**160217L02F**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Copper	0.5000	0.5802	116	0.5394	108	70-130	7	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Glossary of Terms and Qualifiers

Work Order: 16-02-0975 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Return to Contents

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: **16-02-0975**

DATE: 2/11/16

PAGE: 1 OF 3

LABORATORY CLIENT: **Anchor QEA**

ADDRESS: **27201 Puerta Real, Suite 350**

CITY: **Mission Viejo** STATE: **CA** ZIP: **92691**

TEL: **949.347.2780** E-MAIL: cosuch@anchorqea.com

CLIENT PROJECT NAME / NUMBER: Newport Bay Metals TMDL WQ

P.O. NO.: 150243-01.04

PROJECT CONTACT: Chris Osuch

SAMPLER(S): (PRINT) C. Dolphin, N. Kennedy

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):

☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☒ STANDARD

☐ COELT EDF GLOBAL ID: LOG CODE:

SPECIAL INSTRUCTIONS:

Report down to the MDL

Filter at laboratory upon receipt

REQUESTED ANALYSES

Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	EPA 1640 Dissolved Cu	MS/MSD
1	NB-07-021116	2/11/16	0852	WAT	1				X	
2	NB-21-021116		0858		1				X	
3	NB-02-021116		0920		1				X	
4	NB-33-021116		0930		1				X	
5	NB-05-021116		0940		1				X	
6	NB-20-021116		0949		1				X	
7	NB-30-021116		1000		2				X	X
8	NB-14-021116		1010		1				X	
9	NB-23-021116		1018		1				X	
10	NB-31-021116		1033		1				X	

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
C. Dolphin	EEI	2/10/16	1345
N. Kennedy	ECL	021116	1434
		Date:	Time:

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: 6-02-0975

DATE: 2/11/14

PAGE: 2 OF 3

LABORATORY CLIENT: Anchor QEA	CLIENT PROJECT NAME / NUMBER: Newport Bay Metals TMDL WQ
ADDRESS: 27201 Puerta Real, Suite 350	P.O. NO.: 150243-01.04
CITY: Mission Viejo STATE: CA ZIP: 92691	PROJECT CONTACT: Chris Osuch
TEL: 949.347.2780 E-MAIL: cosuch@anchorqea.com	SAMPLER(S): (PRINT) C. Dolphin K. Kennedy

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☒ STANDARD

☐ COELT EDF | GLOBAL ID: | LOG CODE:

SPECIAL INSTRUCTIONS:
Report down to the MDL
Filter at laboratory upon receipt

REQUESTED ANALYSES

Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	EPA 1640 Dissolved Cu	MS/MSD
11	NB-25-021114	2/11/14	1155	WAT	1				X	
12	NB-11-021114	↓	1200	↓	1				X	

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date: 2/11/14	Time: 1345
Relinquished by: (Signature)	Received by: (Signature/Affiliation) ECI	Date: 021116	Time: 1434
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

06/02/14 Revision

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CHAIN OF CUSTO[illegible] RECORD

WO # / LAB USE ONLY: 16-02-0975

DATE: 2/11/16

PAGE: 3 OF 3

LABORATORY CLIENT: Anchor QEA

ADDRESS: 27201 Puerta Real, Suite 350

CITY: Mission Viejo STATE: CA ZIP: 92691

TEL: 949.347.2780 E-MAIL: cosuch@anchorqea.com

CLIENT PROJECT NAME / NUMBER: Newport Bay Metals TMDL WQ

P.O. NO.: 150243-01.04

PROJECT CONTACT: Chris Osuch

SAMPLER(S): (PRINT) C. Dolphin, K. Kennedy

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):

☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☒ STANDARD

☐ COELT EDF GLOBAL ID: LOG CODE:

SPECIAL INSTRUCTIONS:

Report down to the MDL

Filter at laboratory upon receipt

REQUESTED ANALYSES

Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	EPA 1640 Dissolved Cu	MS/MSD
13	NB-29-021116	2/11/16	1029	WAT	1				X	
14	NB-40-021116		1040		1				X	
15	NB-19-021116		1050		1				X	
16	NB-28-021116		1052		1				X	
17	NB-04-021116		1103		1				X	
18	NB-03-021116		1107		1				X	
19	NB-12-021116		1117		1				X	
20	NB-09-021116		1125		1				X	
21	NB-10-021116		1130		1				X	
22	NB-30-021116		1149		1				X	

Relinquished by: (Signature) K. Kennedy	Received by: (Signature/Affiliation) Anchor QEA	Date: 2/11/16	Time: 1845
Relinquished by: (Signature)	Received by: (Signature/Affiliation) ECL	Date: 021116	Time: 1434
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

06/02/14 Revision

Return to Contents

eurofins | Calscience

WORK ORDER NUMBER: 16-02- 0975

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ANCHOR QEA

DATE: 02 / 11 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC4B (CF: +0.3°C); Temperature (w/o CF): 3.8 °C (w/ CF): 4.1 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: GB

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: GB

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1054

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☑ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB

☐ 125PB**znna** ☐ 250AGB ☐ 250CGB ☐ 250CGB**s** ☑ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s**

☐ 500PB ☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (_____) ☐ EnCores® (_____) ☐ TerraCores® (_____) ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **znna** = $Zn(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: 1054

Reviewed by: 836

Return to Contents

Analytical Resources, Incorporated
Analytical Chemists and Consultants

March 15, 2016

Chris Osuch
Anchor QEA
350 Puerta Real, Suite 350
Mission Viejo, CA 92691

RE: Project: Newport Bay Metals TMDL WQ, 150243-01.04
ARI Job No.: AWS3

Dear Mr. Osuch:

Please find enclosed the Chain of Custody records (COCs), sample receipt documentation, and the final results for samples the project referenced above. Ten water samples were removed from archive and logged under ARI job AWS3. For details regarding sample receipt, please refer to the enclosed Cooler Receipt Forms.

The samples were analyzed for dissolved organic carbon, per email request.

One filter blank analyzed on February 29, 2016 had a result greater than the reporting limit due to carry-over from previously analyzed contaminated samples. No filter blank volume remained for analysis. Sample results associated with this filter blank were re-analyzed on March 3, 2016. All data have been reported as is. No corrective action was taken.

There were no other anomalies associated with the analysis of these samples.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile: AWS3

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Subject: Newport Bay DOC Samples
From: Claire Dolphin <cdolphin@anchorqea.com>
Date: 2/26/2016 10:07 AM
To: "cheronneo@arilabs.com" <cheronneo@arilabs.com>
CC: Cindy Fields <cfields@anchorqea.com>, Chris Osuch <cosuch@anchorqea.com>

Hi Cheronne,
As mentioned on the phone, we are ready to run the DOC analyses on the samples shipped to you two weeks ago. We will only run 10 of the samples and those are:
NB-2-021116
NB-5-021116
NB-7-021116
NB-14-021116
NB-20-021116
NB-21-021116
NB-23-021116
NB-33-021116
NB-36-021116
NB-39-021016
Please also run the MS/MSD on station 39, and hold on to the rest of the samples.
Feel free to reach out with any questions.
Thank you,
Claire

Claire Dolphin
Environmental Scientist

ANCHOR QEA, LLC
cdolphin@anchorqea.com
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691
T 949.347.2780
D 949.334.9615

ANCHOR QEA, LLC
www.anchorqea.com

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: AVZ1
Turn-around Requested:
ARI Client Company: Anchor QEA, LLC
Phone: 949-347-2780
Client Contact: Chris Osuch 350 Puerta Real Suite 350, Mission Viejo, CA 92691
Client Project Name: Newport Bay Metals TMDL WQ
Client Project #: 150243-01.04
Samplers:

Date: 2/11/14
Page: 1 of 3
No. of Coolers: 1
Cooler Temps: 4.3°C

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	DOC	MS/MSD							Notes/Comments
NB-07-021116	2/11/14	0852	WAT	1	X								
NB-21-021116	↓	0858	↓	1	X								
NB-02-021116		0920		1	X								
NB-33-021116		0930		1	X								
NB-05-021116		0940		1	X								
NB-20-021116		0949		1	X								
NB-36-021116		1000		2	X	X							
NB-14-021116		1010		1	X								
NB-23-021116		1018		1	X								
NB-31-021116		1033		1	X								

Comments/Special Instructions: Filter and preserve upon receipt, then withhold from analysis until further notice

	Relinquished by	Received by	Relinquished by	Received by
(Signature)	[signature]	[signature]		
Printed Name	Nick Kenned	Tyler Rankin		
Company	Anchor QEA	ARI		
Date & Time	2/11/16 1230	2-12-16 1535		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: Unless specified by workorder or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.

Chain of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

ARI Assigned Number:	Turn-around Requested:	Date: 2/11/16	
ARI Client Company: Anchor QEA, LLC	Phone: 949-347-2780	Page: 2 of 3	
Client Contact: Chris Osuch 350 Puerta Real Suite 350, Mission Viejo, CA 92691		No. of Coolers: 1	Cooler Temps: 4.3°C
Client Project Name: Newport Bay Metals TMDL WQ			
Client Project #: 150243-01.04	Samplers:		

Sample ID	Date	Time	Matrix	No. Containers	DOC	MS/MSD							Notes/Comments
NB-29-021116	2/11/16	1029	WAT	1	X								
NB 40-021116	↓	1040	↓	1	X								
NB-19-021116	↓	1050	↓	1	X								
NB-28-021116	↓	1052	↓	1	X								
NB-06-021116	↓	1103	↓	1	X								
NB-03-021116	↓	1107	↓	1	X								
NB-12-021116	↓	1117	↓	1	X								
NB-09-021116	↓	1125	↓	1	X								
NB-10-021116	↓	1130	↓	1	X								
NB-30-021116		1149		1	X								

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
Filter and preserve upon receipt, then withhold from analysis until further notice	(Signature) NKennedy	(Signature) [signature]	(Signature)	(Signature)
	Printed Name: Nick Kennedy	Printed Name: Tyler Rankin	Printed Name:	Printed Name:
	Company: Anchor QEA	Company: ARI	Company:	Company:
	Date & Time: 2/11/16	Date & Time: 2-11-16 1535	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: Unless specified by workorder or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested:
ARI Client Company: Anchor QEA, LLC	Phone: 949-347-2780
Client Contact: Chris Osuch	350 Puerta Real Suite 350, Mission Viejo, CA 92691
Client Project Name: Newport Bay Metals TMDL WQ	
Client Project #: 150243-01.04	Samplers:

Date: 2/11/14
Page: 3 of 3
No. of Coolers: 1 Cooler Temps: 4.3°C

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: DOC	MS/MSD							Notes/Comments
NB-25-021114	2/11/14	1155	WAT	1	1								
WB-11-021114	2/11/14	1220	WAT	1	1								

Comments/Special Instructions
Filter and preserve upon receipt, then withhold from analysis until further notice

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)				
Printed Name:	Nick Kennedy	Tyler Rankin		
Company:	Anchor QEA	ARI		
Date & Time:	2/11/14 1230	2-12-16 1535		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: Unless specified by workorder or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Anchor

COC No(s): _____ (NA)

Assigned ARI Job No: AVZ1

Project Name: Newport Bay Metals

Delivered by: ~~Fed-Ex~~ UPS Courier Hand Delivered Other: _____

Tracking No: 8726 7209 7896 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 4-3
Time: _____

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: D0052776

Cooler Accepted by: TR Date: 2-12-16 Time: 1535

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ...	Bubble Wrap (Wet Ice) (Gel Packs) Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	NA	* (YES)	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: AV Date: 2/12/16 Time: 1605

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

Taken to Conventionals to be filtered into preserved bottles.
2/12/16 @ 1605 NB-07-021116 lid received cracked, no sample volume lost

By: AV Date: 2/12/16

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• • •	• • •	● ● ●

Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: AWS3	Turn-around Requested:
ARI Client Company: Anchor QEA, LLC	Phone: 949-347-2780
Client Contact: Chris Osuch 350 Puerta Real Suite 350, Mission Viejo, CA 92691	
Client Project Name: Newport Bay Metals TMDL WQ	
Client Project #: 150243-01.04	Samplers:

Date: 2/10/16
Page: 3 of 4
No. of Coolers: Cooler Temps:

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	DOC	MS/MSD						Notes/Comments
NB-35-021016	2/10/16	1131	WAT	1	X							
NB-16-021016		1139		1	X							
NB-22-021016		1151		1	X							
NB-01-021016		1155		1	X							
NB-34-021016		1202		1	X							
NB-37-021016		1205		1	X							
NB-32-021016		1220		1	X							
NB-38-021016		1225		1	X							
NB-15-021016		1342		1	X							
NB-13-021016		1350		1	X							

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
Filter and preserve upon receipt, then withhold from analysis until further notice	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
	Printed Name: Nick Kennedy	Printed Name: Francisco G	Printed Name:	Printed Name:
	Company: Anchor QEA	Company: ARI	Company:	Company:
	Date & Time: 2/10/16 1520	Date & Time: 02/11/2016 10:15	Date & Time:	Date & Time:

Chain of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

ARI Assigned Number: AWS3	Turn-around Requested:
ARI Client Company: Anchor QEA, LLC	Phone: 949-347-2780
Client Contact: Chris Osuch 350 Puerta Real Suite 350, Mission Viejo, CA 92691	
Client Project Name: Newport Bay Metals TMDL WQ	
Client Project #: 150243-01.04	Samplers:

Date: 2/10/16	
Page: 4	of 4
No. of Coolers:	Cooler Temps:

Sample ID	Date	Time	Matrix	No. Containers	DOC	MS/MSD							Notes/Comments
NB-39-021016	2/10/16	1430	WAT	2	X	X							
NB-18-021016	〃	1439	〃	1	X								
NB-26-021016	〃	1450	〃	1	X								
NB-													

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
Filter and preserve upon receipt, then withhold from analysis until further notice	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
	Printed Name: Nick Kennedy	Printed Name: FRANCISCO	Printed Name:	Printed Name:
	Company: Anchor QEA	Company: ARI	Company:	Company:
	Date & Time: 2/10/16 1520	Date & Time: 02/11/2016 10:15	Date & Time:	Date & Time:

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: Unless specified by workorder or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Anchor

COC No(s): _____ (NA)

Assigned ARI Job No: AVV3

Project Name: Newport Bay Metals TMDL WQ

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Tracking No: 0200 8726 7209 78E9 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 4.1

Time: 1015

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: D00576

Cooler Accepted by: FRANCISCO Date: 02/11/2016 Time: 10:15

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used?	(Bubble Wrap) (Wet Ice) Gel Packs Baggies Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	NA	(YES)	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

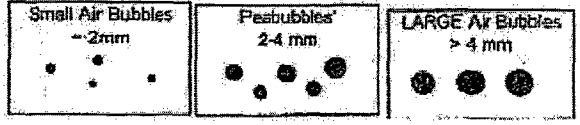
Samples Logged by: TR Date: 2-11-16 Time: 1431

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Conventionals Laboratory Analyst Notes

ARI Job No.: AVV1, AVV3, AVZ1 Client ID: _____

Parameter: DOC Client Project: _____

List problems, concerns, corrective actions and any other pertinent information
All samples filtered and preserved w 0.5ml 9N H_2SO_4 to pH <2.0 and filter blanks. Samples returned to login for Holding.

Analyst Initials:	CPK	Date:	2-15-16

PRESERVATION VERIFICATION 02/29/16
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **AWS3**

Inquiry Number: NONE
Analysis Requested: 02/29/16
Contact: Osuch, Chris
Client: Anchor QEA, LLC
Logged by: TR
Sample Set Used: Yes-481
Validatable Package: LV4
Deliverables:

PC: Cheronne
VTSR: 02/12/16

Project #: 150243-01.04
Project: Newport Bay Metals TMDL WQ
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	~~TOC~~ DOC* <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
16-3203 **AWS3A**	NB-39-021016											P					Y*					
16-3204 **AWS3B**	NB-07-021116											P										
16-3205 **AWS3C**	NB-21-021116											P										
16-3206 **AWS3D**	NB-02-021116											P										
16-3207 **AWS3E**	NB-33-021116											P										
16-3208 **AWS3F**	NB-05-021116											P										
16-3209 **AWS3G**	NB-20-021116											P										
16-3210 **AWS3H**	NB-36-021116											P										
16-3211 **AWS3I**	NB-14-021116											P										
16-3212 **AWS3J**	NB-23-021116											P										

P=pass

*2-29-16 [initials]

Checked By TR Date 2-29-16

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: AWS3
Client: Anchor QEA, LLC
Project Event: 150243-01.04
Project Name: Newport Bay Metals TMDL WQ

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	NB-39-021016	AWS3A	16-3203	Water	02/10/16 14:30	02/12/16 15:35
2.	NB-07-021116	AWS3B	16-3204	Water	02/11/16 08:52	02/12/16 15:35
3.	NB-21-021116	AWS3C	16-3205	Water	02/11/16 08:58	02/12/16 15:35
4.	NB-02-021116	AWS3D	16-3206	Water	02/11/16 09:20	02/12/16 15:35
5.	NB-33-021116	AWS3E	16-3207	Water	02/11/16 09:30	02/12/16 15:35
6.	NB-05-021116	AWS3F	16-3208	Water	02/11/16 09:40	02/12/16 15:35
7.	NB-20-021116	AWS3G	16-3209	Water	02/11/16 09:49	02/12/16 15:35
8.	NB-36-021116	AWS3H	16-3210	Water	02/11/16 10:00	02/12/16 15:35
9.	NB-14-021116	AWS3I	16-3211	Water	02/11/16 10:10	02/12/16 15:35
10.	NB-23-021116	AWS3J	16-3212	Water	02/11/16 10:18	02/12/16 15:35

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Duplicate RPD is not within established control limits
B	Reported value is less than the CRDL but ≥ the Reporting Limit
N	Matrix Spike recovery not within established control limits
NA	Not Applicable, analyte not spiked
H	The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
L	Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U	Indicates that the target analyte was not detected at the reported concentration
*	Flagged value is not within established control limits
B	Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
J	Estimated concentration when the value is less than ARI's established reporting limits
D	The spiked compound was not detected due to sample extract dilution
E	Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

S — Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA — The flagged analyte was not analyzed for

NR — Spiked compound recovery is not reported due to chromatographic interference

NS — The flagged analyte was not spiked into the sample

M — Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

M2 — The sample contains PCB congeners that do not match any standard Aroclor pattern. The PCBs are identified and quantified as the Aroclor whose pattern most closely matches that of the sample. The reported value is an estimate.

N — The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y — The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC — Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C — The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P — The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X — Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z — Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

Geotechnical Data

A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F Samples were frozen prior to particle size determination

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

SAMPLE RESULTS-CONVENTIONALS
AWS3-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: MDC
Reported: 03/15/16

Project: Newport Bay Metals TMDL WQ
Event: 150243-01.04
Date Sampled: 02/10/16
Date Received: 02/12/16

Client ID: NB-39-021016
ARI ID: 16-3203 AWS3A

Analyte	Date Batch	Method	Units	RL	Sample
Dissolved Organic Carbon	03/03/16 030316#1	EPA 9060	mg/L	1.00	1.67

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AWS3-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: CDC
Reported: 03/15/16

Project: Newport Bay Metals TMDL WQ
Event: 150243-01.04
Date Sampled: 02/11/16
Date Received: 02/12/16

Client ID: NB-07-021116
ARI ID: 16-3204 AWS3B

Analyte	Date Batch	Method	Units	RL	Sample
Dissolved Organic Carbon	02/29/16 022916#1	EPA 9060	mg/L	1.00	1.51

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AWS3-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: WC
Reported: 03/15/16

Project: Newport Bay Metals TMDL WQ
Event: 150243-01.04
Date Sampled: 02/11/16
Date Received: 02/12/16

Client ID: NB-21-021116
ARI ID: 16-3205 AWS3C

Analyte	Date Batch	Method	Units	RL	Sample
Dissolved Organic Carbon	02/29/16 022916#1	EPA 9060	mg/L	1.00	2.10

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AWS3-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: ac
Reported: 03/15/16

Project: Newport Bay Metals TMDL WQ
Event: 150243-01.04
Date Sampled: 02/11/16
Date Received: 02/12/16

Client ID: NB-02-021116
ARI ID: 16-3206 AWS3D

Analyte	Date Batch	Method	Units	RL	Sample
Dissolved Organic Carbon	02/29/16 022916#1	EPA 9060	mg/L	1.00	2.11

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AWS3-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: CDH
Reported: 03/15/16

Project: Newport Bay Metals TMDL WQ
Event: 150243-01.04
Date Sampled: 02/11/16
Date Received: 02/12/16

Client ID: NB-33-021116
ARI ID: 16-3207 AWS3E

Analyte	Date Batch	Method	Units	RL	Sample
Dissolved Organic Carbon	02/29/16 022916#1	EPA 9060	mg/L	1.00	1.54

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AWS3-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: ASC
Reported: 03/15/16

Project: Newport Bay Metals TMDL WQ
Event: 150243-01.04
Date Sampled: 02/11/16
Date Received: 02/12/16

Client ID: NB-05-021116
ARI ID: 16-3208 AWS3F

Analyte	Date Batch	Method	Units	RL	Sample
Dissolved Organic Carbon	02/29/16 022916#1	EPA 9060	mg/L	1.00	2.20

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AWS3-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: CMC
Reported: 03/15/16

Project: Newport Bay Metals TMDL WQ
Event: 150243-01.04
Date Sampled: 02/11/16
Date Received: 02/12/16

Client ID: NB-20-021116
ARI ID: 16-3209 AWS3G

Analyte	Date Batch	Method	Units	RL	Sample
Dissolved Organic Carbon	02/29/16 022916#1	EPA 9060	mg/L	1.00	2.10

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AWS3-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: ark
Reported: 03/15/16

Project: Newport Bay Metals TMDL WQ
Event: 150243-01.04
Date Sampled: 02/11/16
Date Received: 02/12/16

Client ID: NB-36-021116
ARI ID: 16-3210 AWS3H

Analyte	Date Batch	Method	Units	RL	Sample
Dissolved Organic Carbon	02/29/16 022916#1	EPA 9060	mg/L	1.00	1.44

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AWS3-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: WA
Reported: 03/15/16

Project: Newport Bay Metals TMDL WQ
Event: 150243-01.04
Date Sampled: 02/11/16
Date Received: 02/12/16

Client ID: NB-14-021116
ARI ID: 16-3211 AWS3I

Analyte	Date Batch	Method	Units	RL	Sample
Dissolved Organic Carbon	02/29/16 022916#1	EPA 9060	mg/L	1.00	2.24

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AWS3-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 03/15/16

Project: Newport Bay Metals TMDL WQ
Event: 150243-01.04
Date Sampled: 02/11/16
Date Received: 02/12/16

Client ID: NB-23-021116
ARI ID: 16-3212 AWS3J

Analyte	Date Batch	Method	Units	RL	Sample
Dissolved Organic Carbon	02/29/16 022916#1	EPA 9060	mg/L	1.00	2.06

RL Analytical reporting limit
U Undetected at reported detection limit

MS/MSD RESULTS-CONVENTIONALS
AWS3-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 03/15/16

Project: Newport Bay Metals TMDL WQ
Event: 150243-01.04
Date Sampled: 02/10/16
Date Received: 02/12/16

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: AWS3A Client ID: NB-39-021016							
Dissolved Organic Carbon	EPA 9060	03/03/16	mg/L	1.67	20.5	20.0	94.2%
ARI ID: AWS3H Client ID: NB-36-021116							
Dissolved Organic Carbon	EPA 9060	02/29/16	mg/L	1.44	21.2	20.0	98.8%

REPLICATE RESULTS-CONVENTIONALS
AWS3-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: WL
Reported: 03/15/16

Project: Newport Bay Metals TMDL WQ
Event: 150243-01.04
Date Sampled: 02/10/16
Date Received: 02/12/16

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: AWS3A Client ID: NB-39-021016						
Dissolved Organic Carbo	EPA 9060	03/03/16	mg/L	1.67	1.49	11.4%
ARI ID: AWS3H Client ID: NB-36-021116						
Dissolved Organic Carbo	EPA 9060	02/29/16	mg/L	1.44	1.59	9.9%

METHOD BLANK RESULTS-CONVENTIONALS
AWS3-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: WL
Reported: 03/15/16

Project: Newport Bay Metals TMDL WQ
Event: 150243-01.04
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Dissolved Organic Carbon	EPA 9060	02/29/16	mg/L	< 0.50 U	
		02/29/16		1.25	FB
		02/29/16		< 0.50 U	
		02/29/16		< 0.50 U	FB
		03/03/16		< 0.50 U	

FB Filtration Blank

STANDARD REFERENCE RESULTS-CONVENTIONALS
AWS3-Anchor QEA, LLC

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: MC
Reported: 03/15/16

Project: Newport Bay Metals TMDL WQ
Event: 150243-01.04
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Dissolved Organic Carbon	EPA 9060	02/29/16	mg/L	20.5	20.0	102.5%
ERA #1217-15-04		02/29/16		20.5	20.0	102.5%
		03/03/16		19.5	20.0	97.5%