

**Table 1.** Average concentration  $\pm$  standard deviation for air blanks, quality controls (QCs), and reference materials during dissolved trace metal analyses. The limit of detection (LOD) for each dissolved metal was calculated as three times the standard deviation of the air blanks. Two QC surface seawaters were used: Southern Ocean (SO) seawater from a 2016 cruise and Eastern Pacific Zonal Transect (EPZT) seawater from a 2013 GEOTRACES cruise. Reference materials with (SAFe D2 and GEOTRACES GS) and without (GSC and GSP) consensus values were used. Consensus values for SAFe D2 and GEOTRACES GS are available on the GEOTRACES website (<http://www.geotraces.org/index.php/science/intercalibration/322-standards-and-reference-materials>). \*Note that consensus values were converted to units of nM (Mn, Fe, Ni, Cu, and Zn) or pM (Co, Cd, and Pb) using average seawater density of 1.025 kg/L.

	<b>Mn (nM)</b>	<b>Fe (nM)</b>	<b>Co (pM)</b>	<b>Ni (nM)</b>	<b>Cu (nM)</b>	<b>Zn (nM)</b>	<b>Cd (pM)</b>	<b>Pb (pM)</b>
<b>Air blanks</b>	0.0030 $\pm$ 0.0003 (n=7)	0.08 $\pm$ 0.01 (n=7)	1.0 $\pm$ 0.3 (n=7)	0.046 $\pm$ 0.006 (n=7)	0.009 $\pm$ 0.002 (n=6)	0.07 $\pm$ 0.02 (n=7)	0.36 $\pm$ 0.09 (n=7)	0.7 $\pm$ 0.2 (n=7)
<b>LOD</b>	0.0008	0.04	0.9	0.02	0.005	0.05	0.3	0.5
<b>SO QC</b>	0.14 $\pm$ 0.01 (n=14)	0.39 $\pm$ 0.07 (n=14)	39 $\pm$ 3 (n=14)	5.8 $\pm$ 0.3 (n=14)	1.28 $\pm$ 0.06 (n=14)	7.1 $\pm$ 0.4 (n=14)	491 $\pm$ 23 (n=14)	9.1 $\pm$ 0.6 (n=14)
<b>EPZT QC</b>	0.57 $\pm$ 0.02 (n=8)	0.13 $\pm$ 0.04 (n=8)	7 $\pm$ 2 (n=8)	2.31 $\pm$ 0.06 (n=8)	0.40 $\pm$ 0.02 (n=8)	0.38 $\pm$ 0.03 (n=8)	2 $\pm$ 2 (n=8)	188 $\pm$ 9 (n=8)
<b>GSP</b>	0.77 $\pm$ 0.03 (n=6)	0.4 $\pm$ 0.1 (n=6)	8 $\pm$ 1 (n=6)	2.8 $\pm$ 0.7 (n=6)	0.65 $\pm$ 0.02 (n=6)	0.30 $\pm$ 0.09 (n=6)	1.6 $\pm$ 0.9 (n=3)	75 $\pm$ 3 (n=6)
<b>GSC</b>	2.10 $\pm$ 0.08 (n=4)	1.7 $\pm$ 0.2 (n=4)	108 $\pm$ 9 (n=4)	4.1 $\pm$ 0.2 (n=4)	1.24 $\pm$ 0.05 (n=4)	2.1 $\pm$ 0.4 (n=4)	350 $\pm$ 15 (n=4)	48 $\pm$ 2 (n=4)
<b>SAFe D2</b>	0.42 (n=1)	0.732 (n=1)	48.4 (n=1)	8.55 (n=1)	2.27 (n=1)	7.89 (n=1)	975 (n=1)	31.3 (n=1)
<b>SAFe D2, consensus*</b>	0.36 $\pm$ 0.05	0.956 $\pm$ 0.024	46.8 $\pm$ 3.0	8.85 $\pm$ 0.26	2.34 $\pm$ 0.15	7.62 $\pm$ 0.26	1011 $\pm$ 24	28.4 $\pm$ 1.5
<b>GEOTRACES GS</b>	1.65 $\pm$ 0.08 (n=6)	0.567 $\pm$ 0.139 (n=6)	33.1 $\pm$ 2.1 (n=7)	2.17 $\pm$ 0.11 (n=7)	0.88 $\pm$ 0.04 (n=7)	0.241 $\pm$ 0.042 (n=7)	1.4 $\pm$ 0.9 (n=5)	32.1 $\pm$ 1.4 (n=7)
<b>GEOTRACES GS, consensus*</b>	1.54 $\pm$ 0.11	0.560 $\pm$ 0.047	32.6 $\pm$ 1.1	2.13 $\pm$ 0.06	0.84 $\pm$ 0.06	0.042 $\pm$ 0.007	2.1 $\pm$ 0.6	29.3 $\pm$ 1.0