



Drinking Water and Radiation Laboratory Branch

850 Marina Bay Parkway, Richmond, CA 94804

Phone: (510) 620-2911 Fax: (510) 620-2940

FINAL Analysis Results Report for Task ID. 12-0264

Parameter	Method	Result +/- CE	MDA 95	Units
Lab No: 12-0264-01 Sample ID: 2nd Qrt 2012 Time Collected: 5/16/2012 14:45 Sampling Point: Eureka Sample Type: Air Composite				
Beryllium-7	HASL Ga-01-R	0.0372 +/- 0.00131	0.00309	pCi/m3
Potassium-40	HASL Ga-01-R	0.00180 +/- 0.000664	0.00303	pCi/m3
Niobium-95	HASL Ga-01-R	0.0000388 +/- 0.000128	0.000363	pCi/m3
Zirconium-95	HASL Ga-01-R	-0.0000222 +/- 0.000165	0.000351	pCi/m3
Ruthenium-103	HASL Ga-01-R	0.0000863 +/- 0.0000906	0.000274	pCi/m3
Ruthenium-106	HASL Ga-01-R	0.000605 +/- 0.000368	0.00111	pCi/m3
Cesium-137	HASL Ga-01-R	-0.0000387 +/- 0.0000440	0.000118	pCi/m3
Cerium-141	HASL Ga-01-R	0.0000268 +/- 0.000165	0.000399	pCi/m3
Cerium-144	HASL Ga-01-R	-0.0000220 +/- 0.000219	0.000513	pCi/m3

- (1) Precision criteria for these method were determined to be acceptable.
- (2) CE is the counting error at the 95% confidence level as defined in Prescribed Procedures for Measurement of Radioactivity in Drinking Water, EPA-600/4-80-032, August 1980.
- (3) MDA95 is the sample specific minimum detectable activity at the 95% confidence level which is the LLD95 divided by 2.22, the efficiency, and the yield, and may include factors for abundance, decay, and ingrowth, dependent on the particular radionuclide. LLD95 is defined in section 7010G, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where Sb is the square root of the instrument background count rate.



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FINAL Analysis Results Report for Task ID. 12-0268

Parameter	Method	Result +/- CE	MDA 95	Units
Lab No: 12-0268-01	Sample ID: 2nd Qtr 2012	Time Collected: 5/21/2012 12:15	Sampling Point: Humboldt Bay	
	Sample Type: Air Composite			
Beryllium-7	HASL Ga-01-R	0.0347 +/- 0.00117	0.00280	pCi/m3
Potassium-40	HASL Ga-01-R	-0.0000804 +/- 0.000637	0.00299	pCi/m3
Niobium-95	HASL Ga-01-R	-0.0000652 +/- 0.000114	0.000328	pCi/m3
Zirconium-95	HASL Ga-01-R	-0.0000270 +/- 0.000108	0.000320	pCi/m3
Ruthenium-103	HASL Ga-01-R	0.0000532 +/- 0.0000884	0.000240	pCi/m3
Ruthenium-106	HASL Ga-01-R	-0.000415 +/- 0.000429	0.00106	pCi/m3
Cesium-137	HASL Ga-01-R	-0.0000901 +/- 0.0000457	0.000108	pCi/m3
Cerium-141	HASL Ga-01-R	0.000224 +/- 0.000116	0.000366	pCi/m3
Cerium-144	HASL Ga-01-R	-0.000404 +/- 0.000181	0.000522	pCi/m3

- (1) Precision criteria for these method were determined to be acceptable.
- (2) CE is the counting error at the 95% confidence level as defined in Prescribed Procedures for Measurement of Radioactivity in Drinking Water, EPA-600/4-80-032, August 1980.
- (3) MDA95 is the sample specific minimum detectable activity at the 95% confidence level which is the LLD95 divided by 2.22, the efficiency, and the yield, and may include factors for abundance, decay, and ingrowth, dependent on the particular radionuclide. LLD95 is defined in section 7010G, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where Sb is the square root of the instrument background count rate.



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FINAL Analysis Results Report for Task ID. 12-0265

Parameter	Method	Result +/- CE	MDA 95	Units
Lab No: 12-0265-01				
Sample ID: 2nd Qtr 2012 Time Collected: 5/15/2012 10:05 Sampling Point: Richmond				
Sample Type: Air Composite				
Beryllium-7	HASL Ga-01-R	0.0588 +/- 0.00183	0.00371	pCi/m3
Potassium-40	HASL Ga-01-R	0.000690 +/- 0.000672	0.00313	pCi/m3
Niobium-95	HASL Ga-01-R	-0.0000283 +/- 0.000140	0.000370	pCi/m3
Zirconium-95	HASL Ga-01-R	0.000123 +/- 0.000172	0.000358	pCi/m3
Ruthenium-103	HASL Ga-01-R	0.000134 +/- 0.000101	0.000293	pCi/m3
Ruthenium-106	HASL Ga-01-R	-0.0000231 +/- 0.000393	0.00109	pCi/m3
Cesium-137	HASL Ga-01-R	-0.0000143 +/- 0.0000397	0.000109	pCi/m3
Cerium-141	HASL Ga-01-R	0.000340 +/- 0.000156	0.000490	pCi/m3
Cerium-144	HASL Ga-01-R	0.0000710 +/- 0.000209	0.000639	pCi/m3

- (1) Precision criteria for these method were determined to be acceptable.
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- (3) MDA95 is the sample specific minimum detectable activity at the 95% confidence level which is the LLD95 divided by 2.22, the efficiency, and the yield, and may include factors for abundance, decay, and ingrowth, dependent on the particular radio-nuclide. LLD95 is defined in section 7010G, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where Sb is the square root of the instrument background count rate.



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FINAL Analysis Results Report for Task ID. 12-0272

Parameter	Method	Result +/- CE	MDA 95	Units
Lab No: 12-0272-01 Sample ID: 2nd Qtr 2012 Time Collected: 5/15/2012 09:50 Sampling Point: Livermore Sample Type: Air Composite				
Beryllium-7	HASL Ga-01-R	0.105 +/- 0.00286	0.00277	pCi/m3
Potassium-40	HASL Ga-01-R	-0.000146 +/- 0.000544	0.00257	pCi/m3
Zirconium-95	HASL Ga-01-R	0.000190 +/- 0.000150	0.000321	pCi/m3
Niobium-95	HASL Ga-01-R	0.000134 +/- 0.000117	0.000345	pCi/m3
Ruthenium-103	HASL Ga-01-R	-0.0000805 +/- 0.0000994	0.000268	pCi/m3
Ruthenium-106	HASL Ga-01-R	-0.000333 +/- 0.000347	0.000927	pCi/m3
Cesium-137	HASL Ga-01-R	0.00000930 +/- 0.0000357	0.000101	pCi/m3
Cerium-144	HASL Ga-01-R	0.000118 +/- 0.000169	0.000551	pCi/m3

- (1) Precision criteria for these method were determined to be acceptable.
- (2) CE is the counting error at the 95% confidence level as defined in Prescribed Procedures for Measurement of Radioactivity in Drinking Water, EPA-600/4-80-032, August 1980.
- (3) MDA95 is the sample specific minimum detectable activity at the 95% confidence level which is the LLD95 divided by 2.22, the efficiency, and the yield, and may include factors for abundance, decay, and ingrowth, dependent on the particular radionuclide. LLD95 is defined in section 7010G, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where Sb is the square root of the instrument background count rate.



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FINAL Analysis Results Report for Task ID. 12-0271

Parameter	Method	Result +/- CE	MDA 95	Units
Lab No: 12-0271-01 Sample ID: 2nd Qtr 2012 Time Collected: 5/18/2012 11:46 Sampling Point: San Luis Obispo Sample Type: Air Composite				
Beryllium-7	HASL Ga-01-R	0.0645 +/- 0.00191	0.00343	pCi/m3
Potassium-40	HASL Ga-01-R	0.000601 +/- 0.000683	0.00318	pCi/m3
Zirconium-95	HASL Ga-01-R	0.000321 +/- 0.000173	0.000353	pCi/m3
Niobium-95	HASL Ga-01-R	0.0000790 +/- 0.000125	0.000374	pCi/m3
Ruthenium-103	HASL Ga-01-R	-0.0000290 +/- 0.000102	0.000270	pCi/m3
Ruthenium-106	HASL Ga-01-R	-0.000113 +/- 0.000440	0.00112	pCi/m3
Cesium-137	HASL Ga-01-R	0.0000499 +/- 0.0000446	0.000119	pCi/m3
Cerium-144	HASL Ga-01-R	-0.000286 +/- 0.000197	0.000581	pCi/m3

- (1) Precision criteria for these method were determined to be acceptable.
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- (3) MDA95 is the sample specific minimum detectable activity at the 95% confidence level which is the LLD95 divided by 2.22, the efficiency, and the yield, and may include factors for abundance, decay, and ingrowth, dependent on the particular radionuclide. LLD95 is defined in section 7010G, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where Sb is the square root of the instrument background count rate.



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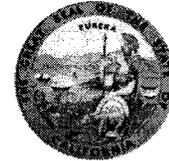
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FINAL Analysis Results Report for Task ID. 12-0269

Parameter	Method	Result +/- CE	MDA 95	Units
Lab No: 12-0269-01				
Sample ID: 2nd Qtr 2012 Time Collected: 5/18/2012 11:23 Sampling Point: Diablo Canyon				
Sample Type: Air Composite				
Beryllium-7	HASL Ga-01-R	0.0616 +/- 0.00192	0.00364	pCi/m3
Potassium-40	HASL Ga-01-R	-0.00138 +/- 0.000716	0.00343	pCi/m3
Niobium-95	HASL Ga-01-R	-0.0000515 +/- 0.000146	0.000401	pCi/m3
Zirconium-95	HASL Ga-01-R	-0.0000676 +/- 0.000192	0.000399	pCi/m3
Ruthenium-103	HASL Ga-01-R	-0.000106 +/- 0.000121	0.000324	pCi/m3
Ruthenium-106	HASL Ga-01-R	0.000729 +/- 0.000414	0.00124	pCi/m3
Cesium-137	HASL Ga-01-R	0.0000884 +/- 0.0000420	0.000129	pCi/m3
Cerium-141	HASL Ga-01-R	0.000262 +/- 0.000159	0.000526	pCi/m3
Cerium-144	HASL Ga-01-R	-0.000271 +/- 0.000216	0.000673	pCi/m3

- (1) Precision criteria for these method were determined to be acceptable.
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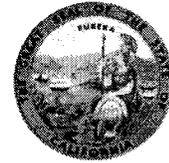
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FINAL Analysis Results Report for Task ID. 12-0267

Parameter	Method	Result +/- CE	MDA 95	Units
Lab No: 12-0267-01				
Sample ID: 2nd Qtr 2012 Time Collected: 5/14/2012 09:30 Sampling Point: Los Angeles				
Sample Type: Air Composite				
Beryllium-7	HASL Ga-01-R	0.0852 +/- 0.00238	0.00337	pCi/m3
Potassium-40	HASL Ga-01-R	0.00385 +/- 0.000649	0.00288	pCi/m3
Niobium-95	HASL Ga-01-R	0.000111 +/- 0.000122	0.000369	pCi/m3
Zirconium-95	HASL Ga-01-R	0.000198 +/- 0.000169	0.000340	pCi/m3
Ruthenium-103	HASL Ga-01-R	-0.0000237 +/- 0.0000989	0.000261	pCi/m3
Ruthenium-106	HASL Ga-01-R	0.000416 +/- 0.000392	0.00104	pCi/m3
Cesium-137	HASL Ga-01-R	0.0000330 +/- 0.0000424	0.000112	pCi/m3
Cerium-141	HASL Ga-01-R	0.0000653 +/- 0.000138	0.000422	pCi/m3
Cerium-144	HASL Ga-01-R	-0.000324 +/- 0.000188	0.000551	pCi/m3

- (1) Precision criteria for these method were determined to be acceptable.
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- (3) MDA95 is the sample specific minimum detectable activity at the 95% confidence level which is the LLD95 divided by 2.22, the efficiency, and the yield, and may include factors for abundance, decay, and ingrowth, dependent on the particular radionuclide. LLD95 is defined in section 7010G, Standard Methods for the Examination of Water and Wastewater, American Water Works Association, 21st Ed., 2005, where Sb is the square root of the instrument background count rate.



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FINAL Analysis Results Report for Task ID. 12-0270

Parameter	Method	Result +/- CE	MDA 95	Units
Lab No: 12-0270-01				
Sample ID: 2nd Qtr 2012 Time Collected: 5/17/2012 16:07 Sampling Point: San Diego				
Sample Type: Air Composite				
Beryllium-7	HASL Ga-01-R	0.0846 +/- 0.00237	0.00302	pCi/m3
Potassium-40	HASL Ga-01-R	0.0000138 +/- 0.000632	0.00297	pCi/m3
Niobium-95	HASL Ga-01-R	0.000171 +/- 0.000123	0.000352	pCi/m3
Zirconium-95	HASL Ga-01-R	0.000304 +/- 0.000156	0.000339	pCi/m3
Ruthenium-103	HASL Ga-01-R	-0.0000385 +/- 0.0000981	0.000269	pCi/m3
Ruthenium-106	HASL Ga-01-R	-0.000306 +/- 0.000366	0.000982	pCi/m3
Cesium-137	HASL Ga-01-R	-0.0000438 +/- 0.0000392	0.000104	pCi/m3
Cerium-141	HASL Ga-01-R	0.000313 +/- 0.000151	0.000476	pCi/m3
Cerium-144	HASL Ga-01-R	0.000297 +/- 0.000198	0.000619	pCi/m3

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